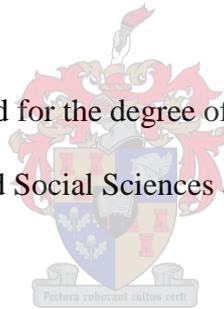


A complex system of complex predicates:  
tense, taxis, aspect and mood in Basse Mandinka  
from a grammaticalisation and cognitive perspective

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## DECLARATION

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## ABSTRACT

The present work analyses the Basse Mandinka tense-taxis-aspect-mood verbal system within the framework of cognitive and grammaticalisation linguistics and from the perspective of complexity theory.

The author builds his study by pursuing the following more specific – gradually more macroscopic and systematic – objectives: (a) a description of the entire semantic potential of all the Basse Mandinka verbal grams; (b) a representation of the synchronic inventories of senses of each Basse Mandinka verbal construction as a coherent phenomenon, i.e. as a kinetic qualitative map ordered by means of grammaticalisation templates or paths; (c) an introduction of the information concerning the prototypicality of the map and the development of a bi-dimensional representation of the meaning as a wave; (d) a construction of streams that contain gram-waves organised along similar evolutionary templates; and (e) a modelling of the entire Basse Mandinka verbal organisation into a system of currents. This system – visualised as an ocean – is demonstrated to have characteristics typical to complex bodies: it is open, situated, fuzzy, full of unstable individuals, highly cardinal, uncontrollable, dynamic, metastable, past dependant, nonlinear, sensitive to initial conditions, deterministically chaotic in some regions, non-additive, non-resultant, but containing emergent properties, structurally intricate, self-organising and characterised by top-down causation and bottom-up causation. Additionally, as far as its methodological properties are concerned, the representation is incomplete, provisional and pluralistic in agreement with models of real-world complexity.



## OPSOMMING

Hierdie werk ontleed die Basse Mandinka verbale stelsel binne die raamwerk van kognitiewe en grammatikaliseringlinguistiek en vanuit die perspektief van kompleksiteitsteorie.

Die skrywer bou sy studie deur die volgende meer spesifieke – geleidelik meer makroskopiese en sistematiese doelwitte na te streef: (a) 'n beskrywing van die volkome semantiese potensiaal van al die Basse Mandinka verbale gramme; (b) 'n voorstelling van die sinkroniese inventaris van sintuie van elke Basse Mandinka verbale konstruksie as 'n samehangende verskynsel, naamlik as 'n kinetiese kwalitatiewe kaart wat volgens grammatikaliseringpatrone of paaie gerangskik is; (c) 'n bekendstelling van die inligting oor die prototipikaliteit van die kaart en die ontwikkeling van 'n tweedimensionele voorstelling van die betekenis as 'n golf; (d) 'n konstruksie van strome wat gramme-golwe bevat wat volgens soortgelyke evolusionêre template gerangskik is; en (e) 'n modellering van die hele Basse Mandinka verbale organisasie in 'n stelsel van strome. Daar word aangetoon dat hierdie stelsel, wat as 'n oseaan voorgestel word, eienskappe het wat tipiese van komplekse liggame is: dit oop is, geplaas, fuzzy, gevul met onstabiele individue, hoogs kardinaal, onbeheerbaar, dinamies, metastabiel, verby afhanklikheid, nie-lineêr, sensitief vir die aanvanklike voorwaardes, deterministies, chaoties in sommige streke, nie-toevoegend, nie-resulterend, maar met ontluikende eienskappe, struktureel ingewikkeld, self-organiserend en wat gekenmerk word deur van-bo-na-onder kousaliteit en van-onder-na-bo kousaliteit. Daarbenewens, wat sy metodologiese eienskappe betref, is die voorstelling onvolledig, voorlopig en pluralisties in ooreenstemming met modelle van die kompleksiteit van die reële wêreld.



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Thank you



## FOREWORD

The present dissertation has its origin in two fascinating phenomena that have captivated my mind for the last five years: the Mandinka language and complexity (theory).

I started my adventure with the Mandinka language in 2010 when I went to Gambia to collaborate with the Centre for Nutritional Rehabilitation and Education in Mansajang near Basse. From the very moment I landed at the Banjul Airport I fell in love with this country, its inhabitants and its languages. Working with people whose knowledge of English or French was often scarce, I was (gladly) forced to rapidly learn rudimentary Mandinka, Fula and Wolof. Among these languages, it was Mandinka that captured my heart and mind mostly because my best friends in Basse were Mandingoes. Although Mandinka was radically different from any language I had learned previously, the knowledge of various Bantu, Indo-European, Afro-Asiatic (including Semitic) and Turkic languages and the incessant help I received from my local “teachers” made this learning process relatively easy, rapid and, above all, fascinating.

Since the very beginning of my stay in Basse I started audio recording the Mandingoes. Being a full blood linguist, my instinct told me to document any aspect of the language I was learning. All the persons who participated in the collection of data or whose explanations to particular examples and uses I recorded always did so with a surprising willingness and enthusiasm. I soon became *the* Tuuba who chatted in Mandinka with sellers at the Basse market, with people in the street, with teachers and pupils of the Bassending school, with the inhabitants of Mansjang, Manne Kunda, Bassending and Kabakama, and above all with the patients and workers at the Nutritional Centre. They never minded being taped and soon associated me with the recorder I always carried in my pocket. They would almost be disappointed if sometimes they were not recorded. It felt wonderful to be accepted by the local Mandingoes, share their culture and become one of them.

I stayed in Basse, with some interruptions, until 2012. At that time, I had already learned Mandinka and elaborated a considerable database. However, even after leaving the country, my studies and research of Mandinka have continued. Since then till now, I have incessantly been consulting my informants and recording new examples simply by means of skype and other digital technologies. Gradually, during my work as a postdoctoral fellow at Stellenbosch University, I have presented some of the empirical data in the form of articles. I have described the semantic potentials of many Basse Maninka grams: KAI (Andrason 2012l), NomKAI (Andrason 2013i, 2014c), NomLA (Andrason 2012k), KA (Andrason 2012j), SI (2012i), TA (Andrason 2011d), YE<sub>1</sub> (Andrason 2012g), NAATA (Andrason 2012m), RII (Andrason 2013h), BANTA (Andrason 2013e), LA (Andrason 2012h) and NAA LA (Andrason 2013d). These papers and the empirical evidence included in them have partially been reused in this dissertation and constitute the foundation of the empirical sections where the corresponding grams are analysed in this study (cf. sections 2.1.1.2, 2.2.1.2, 2.3.1.2, 2.4.1.2, 2.5.1.2, 3.1.1.2, 3.2.1.2, 3.3.1.2, 3.4.1.2, 3.5.1.2, 5.1.1.2 and 5.2.1.2). In some cases, as my understanding of the Basse Mandinka verbal system grew, empirical and purely descriptive studies were accompanied by cognitive analyses. I proposed synchronically plotted, dynamic maps of the NomKAI (Andrason 2014c), RII (Andrason

2013h), BANTA (Andrason 2013e), LA (Andrason 2012h) and NAA LA grams (Andrason 2013d). These cognitive analyses also lay as basis for certain paragraphs of the synthetic and explanatory sections 2.3.2, 3.4.2, 3.4.3, 5.1.2 and 5.2.2. However, the present dissertation greatly surpasses the published papers from which I draw various pieces of the empirical evidence. It introduces new data and, thus, analyses new grams, offers a systematic cognitive explanation of these forms, situates them in a comparative and diachronic Manding and Mande perspective, organises those grams into modules and modularises the system into dynamic sub-parts, and last but not least, develops a holistic global macroscopic picture of the tense-taxis-aspect-mood verbal system. All of this is a result of the fact that this study is no longer about the Mandinka language as such, but rather about language in general and, more specifically, about its modelling within the frame of complexity theory.

My first academic contact with complexity – and more precisely chaos theory – was in 2009 when I discussed some matters related to grammaticalisation paths (and their claimed or rejected universality) with Dr. hab. Andrzej Wereszczyński from the Institute of Theoretical Physics at the Jagiellonian University in Cracow. After that, I established contact with Prof. Dr. Juan Antolín from the Department of Applied Physics at the University of Zaragoza who introduced me to thermodynamics of language. Coming from a mathematical and physical science background, and receiving the help of excellent scholars from Poland and Spain, I had no problem with reviewing and updating my knowledge of chaos theory, thermodynamics and complexity science. I continued my studies on complexity by first – in a fragmentary and less precise manner – adapting the theory of complex systems to Semitic languages, particularly Biblical Hebrew (Andrason 2012a). The use of complexity in the present dissertation is significantly more mature, more precise, more systematic and, in general, more complex. Complexity theory is no longer a loose narrative that explains in a metaphorical manner a language system. It is a relatively precise model in which various features of complexity are easily recoverable. It also lends itself to even more precise numerical treatment and various predictive types of modelling.

The theory of complex systems, being naturally tied to cognitive science, appeared to me as the most accurate way of language modelling, greatly surpassing any other approach to language. However, complexity theory – in order to be adequately implemented, i.e. beyond a simple metaphor – requires complex thinking, which signifies a deeply pluri-disciplinary orientation. I was compelled (gladly) to learn certain areas of physics, biology, economics and sociology in order to understand how realistic complex networks work in the universe and how they can be comprehended in models. This part of my study was no less fascinating than the research on Basse Mandinka and showed me that language is much more than texts and speakers. Language is also a system on its own. We, humans, are the medium in which it can subsist and propagate, and texts are its “paleontological” vestiges by which it can be recognised. I suddenly understood how little we know about our language, how much we simplify reality and how unrealistic our models of language are. Complexity helps to reduce this simplification and unrealistic modelling of language. It reduces it, but of course, does not eliminate it entirely.

Therefore this dissertation is not about the Basse Mandinka verbal system *sensu stricto*. It rather concerns the Basse Mandinka verbal semantics in the frame of complexity

theory. Alternatively, it is about the modelling of the semantics of verbal systems in the frame of complexity theory taking as an example Basse Mandinka. By doing so it aims at advancing the knowledge not only of Mandinka and Manding languages but also, and above all, of language as such. I hope that both scholars of African (Niger-Congo and Mande) linguistics and complexity science will find this study noteworthy, stimulating and thought-provoking.

Alexander Andrason

Woodstock, Cape Town  
July 2015



## ABBREVIATIONS

AC	anterior cline
EC	evidential cline
EXIS	existential particle <i>ti</i>
FOC	focus particle <i>le</i>
NEG.NVP	negative non-verbal predicator <i>te</i>
NP	non-prototypical(ity)
NVP	non-verbal predicator <i>be</i>
OBL	modal particle of obligation <i>fo</i>
P	prototypical(ity)
PARTL	particles <i>ko</i> and <i>baŋ</i>
QUES	question particles <i>baŋ</i> and <i>fo</i>
REFL	reflexive pronouns <i>i</i> , <i>ì</i> , <i>n</i> and <i>ṅ</i>
SP	semi-prototypical(ity)
V	void



## CHAPTER ONE

## INTRODUCTION

## 1. General information and theoretical background

## 1.1 The Mandinka language

## 1.1.1 Manding, Mandinka, (Standard) Gambian Mandinka and Basse Mandinka

Mandinka is a language spoken in West Africa with a total number of speakers reaching one and a half million. It is commonly employed in Gambia (510,000 speakers), Senegal (669,000) and Guinea Bissau (167,000). To a lesser degree, Mandinka is also used in other countries of the region, especially in Mali, Burkina Faso and Sierra Leone. Additionally, there is a Mandinka diaspora in other parts of Africa, Europe and America (Lewis 2009).

Mandinka belongs to the family of Mande languages which is composed of the following groups (Kastenholz 1996, Vydrin 2009a:107):

1. Southern Mande (Dan, Guro, Yaure, Tura, Mano, Mwan, Wan, Beng, Gban, Gbin);
2. Eastern Mande (San, Sane, Bisa, Boko, Bokobaru, Busa, Kyenga, Shanga);
3. Samogo (Jo, Seenku, Banka, Duun, Dzuun, Kpan, Kpeen);
4. Bobo;
5. Soninke-Bozo;
6. South-Western Mande (Mende, Loko, Bandi, Looma, Kpelle);
7. Soso-Jalonke;
8. Jogo (Jogo, Jeri, Numu, Ble);
9. Vai-Kono;
10. Mokole (Mogofin, Kakabe, Koranko, Lele);
11. Manding (Bambara/Bamana, Maninka, Jula, Mandinka, Xasonka, Marka-Dafin, Mau).

Although the above-mentioned groups are well-recognised, their relation and merger into larger branches are more controversial (Vydrin 2009a:107). The most widely accepted tree model has been formulated by Raimund Kastenholz (1996 and 2002; see also Vydrin 2009a, Lewis 2009). Kastenholz rejected the model developed previously by Grégoire & de Halleux (1994) in the framework of glottochronology, founding his classification on shared (lexical) innovations.

The Mande linguistic family belongs to the Niger-Congo realm of languages, arguably being the earliest off-shoot (exemplified by Proto-Mande) from the common stock (Welmers 1971:119). The Mande family is divided into two main branches: Western and Eastern. The Western group is itself subdivided into North-Western and Central/South-western branches.

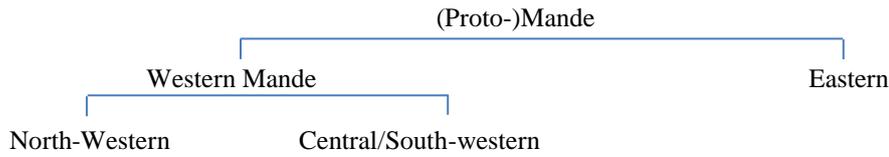


Figure 1.1: Main branches of the Mande family

The internal organisation of each main branch into sub-groups can be represented in the following way following Kastenholz (1996, 2002; see also Vydrin 2009a):

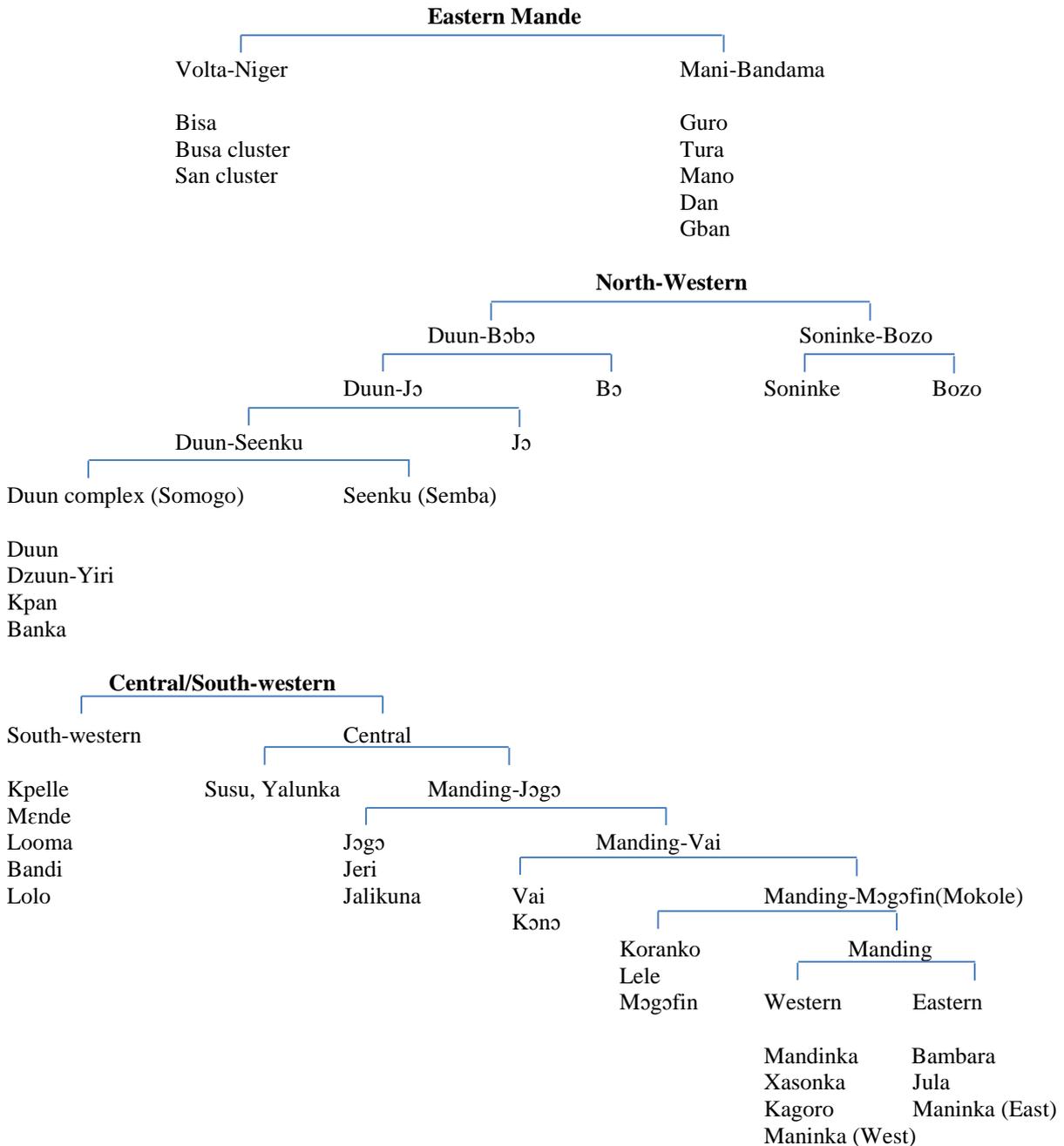


Figure 1.2: Sub-division of main branches of Mande (adapted from Kastenholz 1996:70, 2002, 2003:50, Tröbs 2009:6)

Manding itself is a denomination for a cluster a dialectal continuum containing some forty closely related variants in the Central/South-western branch (Kastenholz 1996:14, 1988b:87, Tröbs 2009:5). The area where Manding is spoken spans from Mali in the north to Ivory Coast in the south, and from the Senegalese and Gambian shores of the Atlantic Ocean in the west to Burkina Faso in the east. Although several variants are to an extent mutually intelligible (or similar enough to enable successful communication), communication between the extremes seem to be relatively difficult (Ebermann 2005:123). As is evident from Figure 1.2, Manding is divided into Western and Eastern branches, Mandinka being classified as a member of the Western group together with Xasonka, Kagoro and Western Maninka (Kita and Niokolo) varieties (Tröbs 2004a:135, 2009).<sup>1</sup> However, it must be emphasised that one deals with a dialectal continuum (and, thus, with an uninterrupted and gradual transformation of one type to another) rather than with clearly cut, discrete and separated groups.

Vydrin (2009a) recently proposed a slightly different branching of Manding in which Mandinka occupies a distinct position in comparison with other dialects. This subdivision of Manding may be represented as follows:

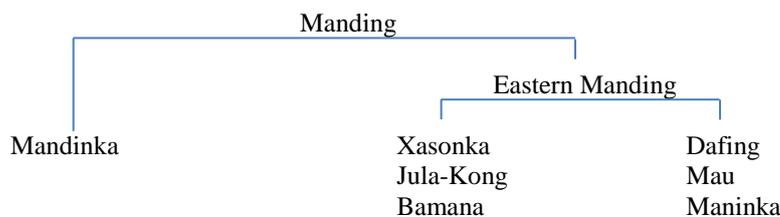


Figure 1.3: Branching of Manding (adapted from Vydrin 2009a:144)

In sum, the detailed genetic classification of Mandinka may be schematised as follows: Mandinka < Manding-West < Manding < Manding-Mokole < Manding-Vai < Manding-Jogo < Central < Central-Southwestern < Western < Mande < Niger-Congo (Kastenholz 1996:281, Williamson & Blench 2000:11-42, Lewis 2009, and Vydrin, Bergman & Benjamin 2010).

From a chronological perspective, the division of Proto-Mande into Western and South-Eastern arguably took place in 3500-3000 BCE, although contacts between branches continued. After 2100 BCE, Proto-Western Mande split into Proto-Soninke-Bozo, Proto-Bobo, Proto-Samogo and Proto-Central/Southwestern Mande. Between 1900 and 1800 BCE, Proto-Central/South-western Mande divided into Proto-Central (Great Manding and Jogo

<sup>1</sup> According to Tröbs (2004a:134, 2009), the following varieties may be classified as eastern: Tenegakan, Maukakan, Finangakan, Korokakan, Baralakan, Wojenekakan, Bodugukakan, Folokakan, Gbelebankakan, Tudugukakan, Vandugukakan, Nɔwolokakan, Sienkokokan, Worodugukan, Kanikakan, Karanjakan, Siakakan, Koyagakan, Korokan, Sagakakan, Nigbikakan, Jula of Kong, Bolon, Mɛɛka (Marka, Dafing), Manya, Maninka and Bambara. Glottolog.org classifies them into 6 groups: 1) Bambara (Beledugu, Ganadugu, San, Segou, Sikasso, Somono, Standard Bambara and Wasulu); 2) Bolon (Black and White Bolon); 3) Jula (Jula Véhiculaire, Kong and Tagboussikan); 4) Manenkan (Eastern Maninkakan [Amana, Bô, Kouloukalan, Mori and Wasulu], Konyanka, Manya and Sankaran); 5) Maninka-Mori (Koro, Koyaga, Mahou [Baralaka, Finanga, Koroka, Mahouka and Tenenga], Wojenaka [Bodougouka Nafana, Odiennaka, Sienkoka, Toudougouka, Vandougouka and Wasulu] and Worodougo [Kanika, Karanja and Worodougouka]); and 6) Marka (Gassan, Nouna and Safané). According to glottolog.org, Western Manding is divided into three groups: 1) Kita-Kagoro (Kagoro, Kita); 2) Mandinka; 3) Xasonka (Jahanka, Western Maninka [Kanieba, Nyoxolonkan] and Xaasongaxango).

and Proto-Southwestern/Soso. During the period of 900-800 BCE, Great Manding and Proto-Jogo-Jeri separated. In the 1<sup>st</sup> century BCE, Great Manding split into subgroups and after that (i.e. from 0 till 1000 CE) into individual languages (Vydrin 2009a:115).<sup>2</sup>

Although, as already mentioned, Mandinka is not confined to one country, in this dissertation, I will deal with phenomena that are related to the Mandinka language used in Gambia and, in particular, to one of its provincial variants, spoken in the eastern part of the country.

To begin with, it should be noted that the official language of Gambia is English, even though it is not the mother tongue of most Gambians. English clearly predominates in all possible formal situations: in governmental meetings and official documents, in education (especially, at secondary schools and universities) and in trade and business. However, despite the supremacy of English in all spheres of modern life, in recent times, Mandingoes have recently succeeded in upgrading the status of their mother tongue. To be exact, in the last twenty years the orthographic convention and grammatical norms of the language have officially been adopted (see, for instance, *A practical Orthography of Gambian Mandinka* (WEC 1988), *Mandinka English Dictionary* (WEC 1988 and 1995) and *Mandinka English and English Mandinka Dictionary* (PCG 1995)). This standardised spelling and normalised grammar have subsequently been implemented in translations of the main works of Muslim and Christian literature, which are of key importance in the lives of Gambians (see, for instance, *Kambej Kutoo* ‘New Testament’ (WEC 1989), *Kambej Kotoo* ‘Old Testament’ (in parts; WEC 1998), *New Testament* (BSG 2011) or *Selections from the Writings of the Promised Messiah* (IIP 1988)). The same standardised language has increasingly been used in various official governmental brochures and educative texts (cf. GFPL & WEC 1998, WHO & WEC 1996, and NFES 1996; compare also Tera 1979), traditional tales (NLAC & WEC 1998, WEC 1991a, 1991b and 1994) and grammars and learning manuals (Lück & Henderson 1993, Colley 1995 and WEC 2002).<sup>3</sup> Identical or highly similar linguistic systems and grammatical rules can in fact already be found in the grammars written by Hamlyn (1935), Rowlands (1959), Creissels (1983a), Gamble (1987) and Creissels & Sambou (2013), which all focus on western Mandinka, including the type spoken in Gambian (cf. also Wilson 2000).

This standardised language of the Mandingoes that live in Gambia, a variety that seems to be gradually acquiring a higher status, expanding to more official and formal domains of linguistic usage, may be referred to as ‘Standard Gambian Mandinka (SGM)’ in

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<sup>2</sup> On the details of the history and classification of the Mande family, see Kastenholz (1996); consult also Welmers (1958), Mukarovsky (1966), Long (1971), Bimson (1978), Pozdnyakow (1978, 1980 1991), Kastenholz (1988a, 1991/1992, 1997, 2002), Dwyer (1989), Barlow (2001), Nicolăi (2006), Vydrin (2006a, 2006b, 2007, 2009a), Ebermann (2005). Concerning the history of Manding and Mande phonology, see Long (1971), Bimson (1978), Pozdnyakov (1978), Grégoire (1988), Vydrin (2002, 2004). For the history of personal pronouns, consult Babaev (2008, 2010a, 2010b), and Vydrin (2010). Concerning the reconstruction of the nominal system, see Dwyer (1986, 1987/1988), Vydrin (1994a, 2006a). On the dialects of Manding, see Bird et al. (1982; see also Long 1971).

<sup>3</sup> These spelling conventions will be followed in the present dissertation. In this orthography, the tone is generally not indicated (with the exception of certain pronominal forms). This spelling is commonly used not only in literary texts and governmental publications but also in grammars, dictionaries, and scholarly papers (Gamble 1987, WEC 1988 and 1995, Wilson 2000). Moreover, as this dissertation does not deal with phonetic or phonological issues, the indication of tone is not necessary.

order to differentiate it from ‘Gambian Mandinka’ that includes all the Mandinka varieties spoken within the territory of Gambia.

In the easternmost part of Gambia, a local subtype of Gambian Mandinka is spoken. This vernacular is mainly used in Basse, the capital city of the Upper River Division – the part of the country located farthest from the sea coast. It is also widely employed in neighbouring villages of the Upper River Division such as Manneh Kunda, Mansajang, Bassending and Kaba Kama. Given its geographic position, this language, which as explained, constitutes the object of my study, has been referred to as ‘Basse Mandinka’.

As far as the sociological environment is concerned, one must note that Basse Mandinka is spoken in the region where, instead of Mandinka, the Fula and Serehule communities (and, thus, their languages) are dominant. Additionally, another dialectal Manding variety, Jahanka (similar, yet distinct, from Mandinka) is extensively spoken in the Basse area. As a result, Mandingoes from Basse and its proximities are constantly exposed to other prevailing linguistic organisations (viz. Fula and Serehule) and to a system which, albeit similar, is sovereign – at least in the speakers’ linguistic self-consciousness (viz. Jahanka).

It must likewise be clearly stated that in contrast to Standard Gambian Mandinka, Basse Mandinka is not a unified system with a constant number of well-defined rules. There is no such thing as a ‘Basse Mandinka norm’. On the contrary, one finds considerable variation concerning the forms, uses and strategies chosen by native speakers. In some cases, speakers who have been interviewed for the purpose of this study disagree on the admissibility of a given construction. For some, the consulted form was fully correct, whereas for others, it was admissible, although they would not employ it themselves. Lastly, others openly reject the possibility of the use of the form in question. As a result, the Mandinka language of Basse could best be understood as a conglomerate of all grammatical possibilities that Mandinka native speakers – as well as second-language Mandinka users – in Basse and its vicinity are bestowed with. This lack of grammatical uniformity can likewise be described in another manner: Basse Mandinka is a continuum of forms which range from more standard (a person employs a variety that strongly resembles Standard Gambian Mandinka) to forms that are radically different and even inadmissible in the normalised language. This absence of homogeneity most likely stems from the exclusively oral character of Basse Mandinka and reflects the aforementioned ethnic and linguistic diversity of Basse and its vicinity. Consequently, as already explained, Basse Mandinka can be understood as a set-theoretic sum of subsystems characterising a part of a village, a family, or even an individual.

### 1.1.2 Methodology and database

From a methodological perspective, Basse Mandinka is a linguistic system that emerges from the evidence collected by the author of this dissertation during extensive field research carried out *in situ* in the Upper River Division in 2010, 2011 and 2012, as well as via Skype in 2014 and 2015. The principal aim of these empirical studies was to examine the main grammatical features of Basse Mandinka, in particular, the properties of its temporal, taxis, aspectual and modal verbal system. For this purpose, ten Mandinka native speakers were

carefully selected. Mirroring the linguistic and socio-ethnic non-uniformity of Basse Mandinka, the informants were intended to represent distinct age groups, different educational and professional strata as well as various ethnic backgrounds. Below, a list of the names of persons who participated in my research is offered. The list, arranged alphabetically, indicates the name, age, gender, profession, place of residence, and ethnic origin of each informant. In addition to the abovementioned native speakers, various second-language Mandinka users (with language proficiency ranging from good to nearly equal to natives) were consulted. Most of them were Fula first language speakers.<sup>4</sup>

- |              |   |
|--------------|---|
| 1. Keba      | 13, male, primary school student, Bassending, Mandingo-Fula   |
| 2. Malik     | 18, male, high school student, Bassending, Mandingo-Fula  |
| 3. Musa (1)  | 24, male, watchman, Basse, Mandingo   |
| 4. Lamin     | 25, male, university student, Manneh Kunda, Mandingoe   |
| 5. Mamanding | 27, male, nurse assistant, Basse, Mandingo  |
| 6. Musa (2)  | 29, male, driver, Kaba Kama, Mandingo   |
| 7. Baba      | 30, male, teacher, Mansajang, Mandingo  |
| 8. Mariama   | 32, female, nurse, Mansajang – originally from Fulla Bantang but living in Basse for many years, Manjago <sup>5</sup> |
| 9. Saikou    | 44, male, health worker, Basse – originally from Serekunda but living in Basse for many years, Mandingo               |
| 10. Kumba    | 56, female, cook, Mansajang, Fula   |

The field work activities that were carried out in Basse over a period of three years and subsequently continued from distance by means of digital media and intermediaries, led to the composition of a comprehensive database that consists of more than 5000 phrases. Each example was recorded with audio-video instruments and thoroughly discussed with the informants. All these examples can be divided into three different types, depending on their “conceptual origin”: a) sentences that were spontaneously constructed by the informants; b) sentences that were produced by the native speakers at the request of the author; c) sentences that were inspired by literary texts, specially by the Mandinka Bible – informants were asked to pronounce, comment on and/or reformulate certain examples extracted from the Mandinka Bible (WEC 1989 and BSG 2011). The aim of all such examples was to discover and/or document the linguistic richness and variability of the Mandinka language spoken in Basse and neighbouring villages. Being aware of its heterogeneity and lack of literary consistency, the corpus of examples contained in this database may be regarded as a relatively trustworthy and representative empirical specimen of the Mandinka vernacular found in Basse.

In the course of the research activity conducted by the author of this dissertation, it became evident that although Basse Mandinka is highly similar to Standard Gambian Mandinka and to other varieties of Gambian Mandinka – since all such varieties are mutually

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<sup>4</sup> All these persons were informed on the purpose of collecting the data. They agreed to be interviewed and collaborate in the project. Only those informants who expressed their explicit consent were audio-video recorded.

<sup>5</sup> As far as tribal origin is concerned, the two first persons on the list are ethnically Mandingo (by father) and Fula (by mother).

intelligible to the fullest extent – and despite the fact that the core of the grammatical structure of the two “languages” is almost identical, several characteristics differentiating Basse Mandinka from the regulated “national” variant may be identified. The next section will present a comparison of the most significant features of Mandinka as used in the Upper River Division with Standard Gambian Mandinka.

### 1.1.3 Distinctive features of Basse Mandinka<sup>6</sup>

In general terms, it seems that even though fully mutually intelligible, Basse Mandinka and Standard Gambian Mandinka differ in various aspects. The differences affect both the vocabulary and core grammar. To be exact, they concern phonetics, phonology, lexicon, morphosyntax and semantics. Additionally, a group of distinctive features of Basse Mandinka is related to a dissimilar usage of certain constructions. As a result, Mandingoes from Basse and neighbouring areas are quite aware of their distinctiveness when compared with the standardised language, and in particular with Mandinka of Komboo, the coastal region and the dominant part of the country as far as politics, economy and education are concerned. When speakers of the Mandinka variety in Basse are exposed to Standard Gambian Mandinka, they usually say: “So speak the people in Komboo”. This means that Mandingoes from the Basse region are aware of employing a slightly different variety of Mandinka. This awareness, which certainly stems from economic, political and educational distinctions of the Upper River Division, enables them to position themselves as being different to Komboo Mandingoes and their language. The geographical, economic, political and educational difference between Komboo and the Upper River Region is thus reflected at the linguistic level.

However, it must clearly be stated that a number of distinctive traits between the variety used in Basse and the standardised language does not necessarily imply that the former should be classified as a genuine dialect of the latter. Most importantly, the two varieties are perfectly mutually intelligible, and it is hardly imaginable that Mandingoes from Basse and Komboo would not understand each other.<sup>7</sup> In fact, Basse Mandinka is a geographic denomination of Mandinka from which my evidence is drawn, rather than a linguistic unit. Overall its distinctive features are of a little importance for communication and represent minimal dialectal variation. As will be evident from the subsequent discussion, the strength and the relevance of the present study lies in the fact that its results are not confined to Basse Mandinka, but they can (and should) be extrapolated to Mandinka in general and to any variety of the great Manding dialect continuum (and possibly beyond).

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<sup>6</sup> This section draws on my article “A contribution to the Mandinka dialectology – Basse Mandinka *versus* Standard Gambian Mandinka” published in *Asian and African Studies* 23/1 (cf. Andrason 2014d).

<sup>7</sup> The comparison that follows in this section involves Basse Mandinka and Standard Gambian Mandinka. Accordingly, certain characteristics that distinguish the Basse variety from the standardised language may very likely be found in other parts of Gambia. Furthermore, some differences between the two varieties may stem from the imprecision and/or scarcity of grammatical studies published thus far. In particular, it is possible that the properties of the BANTA, NAATA and perfective NAA constructions (which are common in Basse Mandinka but almost entirely ignored in works dedicated to Standard Gambian Mandinka and Gambian Mandinka, in general) can also appear in the standardised language (see below in this section).

### 1.1.3.1 Phonetics

As far as the phonetic and phonologic systems are concerned, Basse Mandinka regularly includes in its inventory a consonant that is missing in the standardised language, namely, the voiced velar stop [g]. This consonant typically appears at the beginning of a lexeme that in most cases was borrowed from a language in which the original source word was pronounced with the sound [g]: *Gambiya* ‘Gambia’ (instead of SGM *Kambiya*) or *gañee* ‘win’ (instead of SGM *kañee*). It should be noted that in all such cases, Standard Gambian Mandinka regularly employs a voiceless counterpart, viz. [k]. The consonant [g] may likewise appear in an intermediate position in compounds: *ñaačilaasoo* ‘glasses’. Additionally, there are some typically Mandinka words that can be pronounced both with [k] and [g] (*kodoo* or *godoo* ‘money’), although the use of the voiced consonant [g] here seems to be significantly less frequent. It should be observed that the status of the consonant [g] is phonemic in Basse Mandinka. For example, one finds oppositions of the classes such as [ka] : [ga], e.g. *ka-na* ‘that not’ versus *ga-ñee* ‘win’; [go:] : [ko:], e.g. *goo-loo* ‘goal’ versus *koo-laa* ‘behind’; or [gu] : [ku], e.g. *gu-rupoo* ‘group’ versus *ku-ruboo* ‘sowing *findo*, clearing’. All of this means that the presence of [k] in places where Mandingoes from Basse use [g] is perceived as a trait of the “Komboo” language.

Two other phonetic features that differentiate Basse Mandinka from Standard Gambian Mandinka are a possible use of [g] instead of [w] and that of [b] instead of [v]. As for the former, on some occasions, the SGM consonant [w] in an intervocalic position (e.g. *duwoo* ‘vulture’) offers an alternative and less common variety, *dugoo*. With respect to the latter, in certain borrowings, the labiodental voiced consonant [v] may be preserved in accordance with the original pronunciation of the source language. Accordingly, besides the form *bineegaaroo* ‘vinegar’ that corresponds to the SGM pronunciation in which the sound [v] is generally replaced by [b]<sup>8</sup>, some speakers prefer the variant with [v] *vineegaaroo*.

### 1.1.3.2 Lexicon

Due to its colloquial and informal status, Basse Mandinka speakers use a wide range of lexical borrowings, especially from the English language. Anglicisms are prevalent in everyday speech in Basse, and English loanwords are extremely common although they are adjusted to Mandinka pronunciation, as can be seen in words like *pleya* ‘player’, *loya* ‘lawyer’, *gool* ‘goal’ or *Speyin* ‘Spain’. In fact, the intrusion of the English language can not only be observed in the referential lexicon but also concerns the typically functional or grammatical component of the Mandinka variety spoken in Basse. For instance, certain speakers quite frequently use the conjunction *dat* ‘that’ – an evident loanword from English.

Less commonly, one finds words that are borrowed from French. However, two of them are extremely frequent. These are functional entities: the conjunction *pasike* ‘because’ and the preposition and/or conjunction *puuru* ‘to, for’. Both constitute alternatives to the Standard Gambian Mandinka lexemes *kaatuy* ‘because’, *ye* or *la* ‘for’ and *fo* or *ka* ‘to, in order to, so that’. It is important to note that in Basse, the lexemes *pasike* and *puuru* are

<sup>8</sup> In some words, the original [v] appears as [w] in Mandinka: *wuluuroo* ‘velvet’ from French *voulure*.

exceptionally frequent, being *de facto* much more common than their, still available, SGM equivalents.

Furthermore, the Basse Mandinka vocabulary includes lexemes missing in the standardised language that have not been borrowed from English or other European languages. The most important of them is the interrogative and relative pronoun *joj* ‘who, which’, widely employed in Bambara, a possible alternative to the SGM forms *jumaa* ‘who?’ and *mey* ‘who’, which are likewise acceptable in Basse.

### 1.1.3.3 Core grammar

With respect to the morphosyntactic component of the language, one may identify three main types of peculiarities found in Basse Mandinka if we compare this variety with Standard Gambian Mandinka. First, Basse Mandinka includes forms that are absent in the standardised language. Second, it offers alternative shapes of morphemes and locutions that are already present in Standard Gambian Mandinka. And third, it exhibits differences in the use of equivalent constructions that exist in the standardised language.

An example of constructions that are missing in Standard Gambian Mandinka but that are available in Basse is a possessive or pronominal expression formed by means of the postposition *ye* ‘for’. The sequence [noun + *ye* + noun] expresses possession or certain values typical of the genitive case (e.g. *Laamin ye motoo* ‘Laamin’s car’ or *A ye bukoo* ‘his book’) while the chain [pronoun + *ye*] approximates the meaning and use of possessive pronouns. This is an alternative construction to the standard possessive and pronominal locution derived by means of the postposition *la* ‘with, at, of’: *Laamini la motoo* ‘Laamin’s car’ or *A la bukoo* ‘his book’.

Another example can be an alternative pronoun of the first person plural, i.e. *mol* ‘we’: *Mol ye naa!* ‘Let’s come!’ or *Kabirij Maalik naata mol be taa la marisewo to* ‘When Maalik comes, we will go to the market’. Although this word is derived from the lexeme *moolu* ‘people; they’ (pronounced [mo:l]), the pronoun *mol* invariably shows the short vowel [o] instead of the long variant [o:] found in the underlying substantive.

Basse Mandinka seems to tolerate the use of a genuine passive voice in which the agent is overly expressed by means of an adpositional phrase. According to the majority of the informants, the circumposition *ka bo...la* (originally ‘though, by means of, because of’) may introduce the agent of verbs that are used de-transitively and/or passively, even if the literal reading ‘through, by means of’ is also possible: *Bukoo ñiñ safeeta ka bo nte la* ‘This book has been written by me’.

Among the most important variations of constructions and forms found in the standardised language, one may quote the negative habitual marker *muka*, a by-form of SGM *buka* (cf. section 2.4); the non-verbal predicators<sup>9</sup> *bi* ‘be’ and *ti* ‘not be’, by-forms of the SGM forms *be* and *te*, respectively; the prepositions or conjunctions *ke* and *ki* ‘to, in order to’, by-forms of the SGM lexeme *ka*; the past tense “auxiliaries” of the first person singular *na*, *ñe*, *ne* ‘did, have done, -ed’, by-forms of the standardised morpheme *ña* (cf. section 3.2); the possessive construction of the first person singular *n ne* ‘my’, a by-form of the SGM

<sup>9</sup> On non-verbal predicators and copulas see section 2.1.

expression *n na*; the form *miŋ* ‘who, that, which’, a by-form of the SGM relative pronoun *meŋ*; and the future-modal marker *se* ‘will, shall’, a by-form of the SGM *si* (cf. section 2.5). It should be noted that forms such as *muka*, *ke*, *ki* and *miŋ* are employed and/or considered correct by all informants. However, the acceptance of the morphemes *na*, *ne* and *ñe* as well as *n ne* (even though relatively widespread) seems to be less regular.

Additionally, Basse Mandinka possesses a relative plural pronoun *mellu* ‘(those) that, who, which’, which is a variant of the regular SGM form *mennu*, still extensively used in Basse.

Basse Mandinka also diverges from Standard Gambian Mandinka in the usage of certain constructions. As may be deduced from most grammatical descriptions (Creissels 1983a, Gamble 1987:25, Colley 1995:14-15 and WEC 2002:17-18; see also Dramé 2003), in Standard Gambian Mandinka, a verbal construction composed of the non-verbal predicator *be* ‘be’, a verbal noun and a locative entity, viz. the postposition *la* ‘at, with’ (so-called Nominal LA gram; cf. section 2.3), displays the following distribution in its compatibility with two varieties of verbal nouns that are available in the language, short and long. When the direct object of the underlying verb is not expressed, the long form of the verbal noun is used (most commonly in *-roo* or *-diroo*): *M be domaroo la* ‘I am eating’. On the contrary, if the object of the underlying verb is overtly provided (as well as in the case of intransitive verbs), the short variant appears (most typically in *-o*). In the latter case, the nominal object is regularly found in its stem form: *M be duuta domoo la* ‘I am eating a mango’.<sup>10</sup>

The usage in Basse Mandinka seems to diverge from the formula presented above. To be exact, the distribution concerning the use of the long and short verbal noun of underlying transitive roots is both different and less categorical. Although in certain cases the selection of the long or the short variety of a verbal noun depends on the presence of the nominal complement (or the direct object of the underlying verb), the principle governing it differs from the rule that holds in Standard Gambian Mandinka: whereas only the long form is possible in cases where the complement of the verbal noun is not explicitly uttered (*M be sabaroo la*), both the short and long forms appear if the complement is overtly expressed: *M be sigareetoolu saboo / sabaroo la* ‘I am smoking cigarettes’. However, the abovementioned tendency in the selection of the short or long form cannot be understood as a rigid law, and in numerous instances the short variety is likewise found although the nominal complement is not expressed overtly: *M be senoo / seneroo la* ‘I am cultivating’.

It should also be observed that even though the nominal object of the underlying verb (which as explained is the complement of the verbal noun in the Nominal LA gram) is commonly employed in its stem shape (cf. *A be yiri tutoo la* ‘He is planting (a) tree(s)’), in Basse Mandinka, forms with the suffix *-o* as well as those with the plural morpheme *-olu* are just as common: *M be bukoo ñiŋ waafoo / waafiroo la* ‘I am selling that book’ or *M be yirootu senoo / seneroo la* ‘I am cultivating trees’ (for a detailed discussion of the Nominal LA form, see section 2.3, below).

<sup>10</sup> Strictly speaking, this entity (e.g. *duuta*) is not the direct object of the verb but a complement of the verbal noun (see section 2.3).

Additionally, Standard Gambian Mandinka includes in its verbal repertoire a similar formation to the construction discussed above, the so-called LA gram (cf. section 5.1).<sup>11</sup> As was the case with the Nominal LA gram, this locution is composed of the non-verbal predicator *be* ‘be’ and the element *la* ‘to’ (albeit in this construction it is analysed as an infinitive marker). This time, however, it is the base of a main, lexical verb (and not its verbal noun) that appears between these two components. From various grammatical studies (Hamlyn 1935, Gamble 1987, Creissels 1983a, Wilson 2000 and Creissels & Sambou 2013), one can imply that this form has two main uses: it functions as a future (or a prospective category, since it can be employed as a future in the past) and a progressive present: *A be baloo kosi la* ‘He is playing / will play the xylophone’ (Creissels 1983a, Wilson 2000:116). In Basse Mandinka, however, the LA construction is never employed in order to express present progressive activities: it is never used with a non-future or, more exactly, non-prospective reference. This means that present progressive readings are impossible and the phrase quoted previously is always interpreted as referring to a prospective time sphere, i.e. as a future or as a future in the past (for a detailed analysis of this gram, see section 5.1). In order to express a non-future (present or past) progressive meaning other periphrases must be used.

Another formation whose usage is different in Standard Gambian Mandinka to that of Basse Mandinka is the so-called KAD gram (cf. section. 2.1). This verbal construction consists of the non-verbal predicator *be* ‘be’, the postposition *kay* ‘on’ and the base of the main, lexical verb placed between these two elements. In Standard Gambian Mandinka, the KAD form is typically defined as an aspectual marker indicating continuous actions limited to transitive verbs (WEC 1995:77, WEC 2002:16-17). Very infrequently, the locution may be derived from certain intransitive verbs, which, according to these studies, tend to be used in the RID expression (cf. section 3.4). In fact, even the transitive type itself is regarded as less frequent than another progressive formation, viz. the Nominal LA periphrasis. In contrast to this behaviour of Standard Gambian Mandinka, Basse Mandinka does not display any constraints on the use of the KAD gram, as far as the syntactic environments are concerned. Accordingly, both transitive and intransitive constructions (*M bi naa kay* ‘I am coming’ or *A be kuuran kay* ‘He is getting sick’) are allowed, and both appear with equal frequency. Likewise, there are no restrictions on the type of roots employed in the gram, be they dynamic, non-dynamic and stative or adjectival.<sup>12</sup>

Basse Mandinka also differs in certain uses of the RID gram, which is composed of the non-verbal predicator *be* and the participle in *-rij*. In Standard Gambian Mandinka,

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<sup>11</sup> The term ‘gram’ is a broad notion that makes reference to realistic grammatical constructions (periphrastic locutions, complex predicates, agglutinated or fused forms, or indivisible morphemes) that reflect any stage of grammaticalisation. Grams can be analytic or synthetic; they can be multiclausal or monoclausal; they can also draw from multiple semantic domains. They simply reflect different stages of a grammaticalisation process, from its very origin to its ultimate state. During this grammaticalisation process, grams travel along the path (cf. section 1.2.3) acquiring values that belong to various semantic domains and combining them in multiple (in fact, infinite) possible ways. The traditional concepts of tense, taxis, aspect and mood characterise the semantic potential of grams, but realistic temporal, aspectual, and modal grams can choose their actual meanings from various semantic fields and convey a great array of temporal, aspectual and modal senses (cf. Dahl 2000a:7; on the distinction and relation between semantic domains, grammatical categories (prototypes) and realistic grams, see section 1.2.3).

<sup>12</sup> What happens is that adjectival roots in the KAD gram acquire an ingressive meaning.

intransitive predicates of motion display a certain reluctance to appear in the RII gram, usually failing to be accepted in it. In Basse Mandinka, however, one may observe a further grammaticalisation of the RII gram and its relative acceptance with motion verbs. For instance, verbs such as *naa* ‘come’ and *boyi* ‘fall’ are regularly found in this formation (*A be naarij* ‘He is coming’), while others are accepted by some speakers, for instance, *seyi* ‘return’, *bo* ‘come from’ and *taama* ‘travel’ (e.g. *A be seyirij* ‘He is back’). Nevertheless, the spread to all motion verbs has not been concluded because all the informants found some such predicates unacceptable in the RII construction (e.g. *taa* ‘go’). Additionally, certain reflexive verbs may also be used in the RII gram in Basse Mandinka, e.g. *i kuu* ‘wash oneself’ or *i doŋ* ‘dance’. In such cases, the typical object-place is occupied by the pronominal reflexive entity, e.g. *n* ‘myself’: *M be n dondij* ‘I am dancing’ (for a detailed discussion of the RII construction, see section 3.4).

Another formation whose range of uses seems to be distinct in Basse and in the standardised language is the so-called BANTA gram (cf. section 3.5).<sup>13</sup> This locution consists of the auxiliary *banta* – originally the verb *banj* ‘be finished, end’, employed itself in the TA form (cf. section 3.1) – and the base of a meaning verb. The data collected in Basse demonstrates that the semantic potential of this locution greatly exceeds the meaning of an epistemic past, which is typical for Standard Gambian Mandinka (cf. WEC 1995). In Basse, this formation offers a significantly wider scope of uses that regularly draw from two semantic domains. As will be indicated in detail in section 3.5, one domain includes taxis-aspectual-temporal senses (present perfect, perfective and non-perfective past, pluperfect, resultative, stative and non-stative present) while the other consists of three possible modal nuances (evidential, inferential and, just like in standardised language, epistemic, viz. probability or likelihood). In all concrete instances, the BANTA form combines one atomic semantic component of the former group with one atomic element of the latter class. This means that in comparison to Standard Gambian Mandinka, the gram in Basse conveys evidential and inferential values beside the past epistemic sense, and the epistemic value itself is not limited to a past time sphere but may also refer to actual present situations and activities: *A banta a loŋ* ‘He may know it / He probably knows it’.

Basse Mandinka also possesses a verbal gram that undeniably exists in the standardised language but which has almost entirely been overlooked in grammars, teaching manuals and scientific articles available thus far (see, Rowlands 1959, Gamble 1987, WEC 1993 and 2002, Colley 1995, Wilson 2000; cf. however Creissels & Sambou 2013 who discuss it). The construction in question is the so-called NAATA form (cf. section 3.3). The NAATA gram is a locution composed of the verb *naa* ‘come’ (itself employed in the TA

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<sup>13</sup> It should be noted that the results of the comparison of the BANTA, NAATA and perfective NAA forms with their respective SGM counterparts must be taken with some caution. To be precise, although the three formations are present in literary works composed in Standard Gambian Mandinka, their analysis in grammatical studies dedicated to this standardised variety (or to the Mandinka language, including other territories in general) is either superficial (cf. BANTA) or generally missing (NAATA and perfective NAA). This fact complicates (and in a way obscures) an adequate comparison of the two vernaculars. One should acknowledge that the use of the element *naa* as a predicative marker and the behaviour of the cognates of the BANTA gram are extensively described in studies dedicated to other Manding dialects (see, for instance, Bird, Hutchison & Kanté (1976), Brauner (1977), Samassekou (1981), Koné (1984), Tera (1984), Idiatov (2000), Blecke (1988/2004) and Tröbs (2009; for details, see sections 3.3, 3.5 and 5.2).

form) and the base of a lexical verb, e.g. *n naata taa* ‘I went’. This expression is extremely common in Basse Mandinka and has been grammaticalised as the main expression of a dynamic (present or past) perfect and perfective past: *A naata taa kunuŋ* ‘He went yesterday’ or *Ì naata kendeyaa kunuŋ* ‘They were cured yesterday / They got well yesterday’ (see sections 3.3 and 3.6). Furthermore, besides being profoundly grammaticalised as the expression of a dynamic perfect and perfective, by which the gram may diverge from its SGM homologue,<sup>14</sup> the NAATA formation offers certain senses that seem to be missing in the texts published in Standard Gambian Mandinka. In Basse, the NAATA form often expresses the ideas of non-intentionality, accidentality or spontaneity of a corresponding perfect or past event (compare, however, a similar behaviour of a cognate construction in Bambara noted by Idiatov 2000). In other words, it indicates (especially in discourse) that a given perfect or past action has occurred spontaneously and accidentally, or due to the fact that the subject has changed his or her original intention: *N naata a ke* ‘It happened that I did it (first, I was not going to do it, but I did it)’.

In Basse Mandinka, one of the most important functions of the morpheme *naa* (which is present in the NAATA construction, as mentioned in the previous paragraph) is the expression of a dynamic perfect and perfective aspect. In fact, as will be explained in detail in sections 3.3 and 5.2, the entity *naa* is an overt and explicit vehicle of the sense of a dynamic perfect or a perfective aspect. Its use in the NAATA form is particularly frequent, although it may also be found in all the remaining verbal constructions. To put it simply, since *naa* is a highly grammaticalised marker of a perfect and/or a perfective aspect, it can be employed in various verbal locutions, deriving their perfectal or perfective counterparts. While a simple tense can express both perfectal-perfective senses and non-perfective senses (sometimes, even durative and progressive), the varieties extended by the entity *naa* are typically limited to perfectal and perfective values. In such cases, the morpheme *naa* emphasises the fact that a given action has been performed (the sense of a dynamic perfect) and that it was punctiliar, temporarily bounded, and ingressive or terminative (the sense of a perfective aspect; for examples of this, see sections 3.3 and 5.2). This use seems to be either missing or at least less patent in Standard Gambian Mandinka.

Lastly, one may also quote a peculiar use of the interrogative pronoun *muŋ* ‘what’, which in Basse can also be employed as a relative pronoun: *Karammoo muŋ ka n karandi* ‘The teacher who teaches me’. In the plural, the corresponding forms are *munnu* or *mullu*, depending on the type of assimilation: *Musoolu mullu naata* ‘The women who came’.

## 1.2 Theoretical frame of reference

As already mentioned, the present dissertation will only deal with a part of the Basse Mandinka language, i.e. the verbal system and, in particular, its tense, taxis, aspect and mood (TTAM) semantics. In this study, the analysis of the TTAM Basse Mandinka verbal system is

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<sup>14</sup> However, in order to conclude whether the NAATA form is more grammaticalised in Basse Mandinka than in Standard Gambian Mandinka, more research is needed. The only fact is that most studies of the Mandinka language have ignored this construction, while in Basse the gram has been generalised as the most explicit expression of a dynamic perfect (both present and pluperfect) and perfective past that the language actually possesses.

founded on two main principles and two frameworks that respectively stand for them. On the one hand, the analysis of the Basse Mandinka verbal system aspires to be compatible with the modern view on real-world systems (i.e. realistic systems existing in the universe) proposed by the theory of complex systems (section 1.2.1). On the other hand, it will follow the most contemporary understanding of grammatical meaning developed within cognitive linguistics (section 1.2.2). From the following discussion, it will be evident that both approaches contribute equally to the model of a verbal system that will be employed in this study. Therefore it is necessary to explain the two theories and/or frameworks in detail.

### 1.2.1 Complexity<sup>15</sup>

As acknowledged by complex-system theory, the idea of complexity underlies all real-world organisations. Complexity is present everywhere. However, the definition of complexity – just like the systems to which it applies – is far from simple<sup>16</sup> and is codified in an accumulative manner as a set of more specific properties. To be precise, a system is complex if it displays some or all of the following properties: it is open, situated, boundary-free and replete with unstable individuals; infinitely cardinal, uncontrollable and uncertain; dynamic, metastable and path dependent; nonlinear, sensitive to initial conditions, exponentially amplifiable and in regions chaotic; emergent, non-additive, non-modularisable, irreducible and organisationally intricate. It is also self-organising and adaptive. Where its modelling is concerned, a complex system is typically incompressible, model-specific and model-pluralistic (Cilliers 1998 and 2005, Schindwein & Ison 2007:232, Wagensberg 2007:12, 27, 56-62, Hooker 2011b:20-21, 40, Bishop 2011:112, Cilliers et al. 2013:2-4).

In this section, the aforementioned properties of complex systems will be described in detail and their contribution to the overall intricacy of such organisations explained. First, the complexity of realistic natural systems will be discussed (cf. section 1.2.1.1) and subsequently the characteristics of their modelling (cf. section 1.2.1.2).

#### 1.2.1.1 Real-world complexity

Real-world complex systems are never isolated. As they exchange material, energy and information with the environment, they are inherently open and relational. The concepts of openness and interaction with the external world are so relevant that all natural systems – as well as their parts and constituents – are viewed as essentially situated entities: their behaviour depends not only on the parts of which they are composed but also on the whole(s) in which they are embedded. Given that various important properties of the system are

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<sup>15</sup> This section reproduces parts of my paper “Language complexity – an insight from complex system theory” published in *International Journal of Language and Linguistics* 2/2 (cf. Andrason 2014e).

<sup>16</sup> According to Edmonds (1999), there are at least forty definitions of complexity (cf. also Horgan 1995:74, Franco Parellada 2007:154, and Cejnarova 2005:16, 57; see also Lloyd 2001). Sometimes it is also claimed that “complexity [...] appears as essentially undefinable in any way that allows objective measurements” (Ayres 1994:13-14). On complexity and its measures, such as Kolmogorov complexity (also known as algorithmic, descriptive or program-size entropy) or Gell-Mann complexity (also denominated as effective complexity), see Gell-Mann (1995), Gell-Mann & Lloyd (1996, 2004), Gell-Mann & Tsallis (2004), Li & Vitányi (1995, 2008) and Esquivel et al. (2010).

dictated by its global situation and that the essence of a constituent derives from non-interiorised relations with other parts of the system, the line between the system and its environment, or between the individual and its context, becomes fluid. The concept of a boundary between an individual and the surrounding system is highly problematic. In fact, a clear distinction between the individual and the system in which it is embedded – or between the entire system and its external background as well between parts and wholes – is pragmatic rather than real. In nature, rigid and permanent boundaries do not exist – we merely draw them according to our needs. What does exist are fuzzy transition phases (Dimitrov 2002, 2003, Munné 2013:176-178).<sup>17</sup> Consequently, the environment in which the system or individual is inserted constitutes this system's or individual's important part. The environment participates in the system's behaviour and regulates it, being in turn simultaneously influenced by the system, which it frames. It is impossible to determine which fragments of the environment are irrelevant for the system – and, thus, unconnected to it – because even the smallest value in the external universe can have a substantial (including catastrophic) impact on the system due to nonlinearity and an exponential amplification of the error margin (cf. below in this section). Furthermore, since boundaries are arbitrary or subjective, and allegedly external relations may in fact represent important properties of an individual, the very idea of individuality is challenged. Individuals, rather than forming stable phenomena, deliver flexible hierarchies of individuality. In these hierarchical lattices, a lower-level individual invariably constitutes a part of a higher-level individual and the behaviour of the latter can be viewed as a significant factor affecting the properties of the former. Boundaries and individuals are also questioned because of the inherently dynamic nature of complex systems: as everything is a process, constituents cannot be fully individualised (Cilliers 1998:4, Auyang 1998a:47, 121, Schneider & Sagan 2009:141-142, 376-377, Prigogine 2009:177, Richardson, Mathieson & Cilliers 2000, Hooker 2011b:23, 31-35, 43, Bickhard 2011:98-101, 112, 115, 127, Cilliers et al. 2013:2).

Real-world complex systems contain an immeasurable number of components. Since individuals are fluid (they can be deconstructed into more basic constituents and composed into larger singularities) and since the boundaries of the system are arbitrary (in order to satisfy the system, this system should comprise everything, including the environment, in which it is embedded), the cardinality – or the total number of the participating elements – is infinite. Even if we select a finite set of components, the amount of possible configurations is infinite or radically uncontrollable due to the nonlinear nature of the relations that exist among them (see below in this section). As everything interacts with everything else – every entity somehow affects the state of the remaining entities, being simultaneously affected by all the other components and the system globally – the network of interconnections and possible states that emerge from them is absolutely untreatable. In fact, it is relations – even more than constituents – that render complex systems entirely uncontrollable. Relations constitute the core of complex systems – they cannot be understood as external and

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<sup>17</sup> On fuzziness, fuzzy logic (a mathematical convention to treat fuzziness), and fuzziology (the study of fuzziness in complexity and/or human life) see Zadeh (1973), Zadeh & Yager (1987), Klir (1992), Dimitrov (2002:10-15, 18-19; 2003), Dimitrov & Hodge (2002), Dimitrov & Korotkich (2002), Siagian (2003). See also sections 1.2.2.2 and 1.2.2.3 below.

exogenous to the system's constituents because the system or higher level constituents are not mere aggregates of isolated (lower-level) individuals, but strongly depend on multi-level (micro- and macroscopic) interactions. Relations in complex systems are typically nonlinear and create feedback loops (the results of an action feed back onto itself; Morin 1999, Bastardas-Boada 2013b:157).

Apart from the infinite number of components, relations and configurations, the infiniteness of complex systems surfaces in yet another manner. When determining the state of a system or even one of its components, it is impossible to provide a complete series by which it could be fully represented. To ultimately satisfy such a description, an infinite amount of information would be needed, which is physically impossible. This stems from the fact that there is no limit to the longitude of an empirical series that represents realistic phenomena – therefore the series can be extended indefinitely. By increasing the longitude of the sequences of data, at a certain point, any two series will always diverge. This is related to the fact that all the realistic contexts are unique and no two phenomena are indistinguishable. Since we must impose limits when describing an object or phenomenon, a portion of data must be put aside in determining a series. This portion is infinite because of the infinite cardinality explained previously. This, in turn, implies that there will always be an inherent disturbance or uncertainty in defining the state of a system or a component. Due to the phenomena of nonlinearity and exponential amplification of error margin, this uncertainty – at the beginning unimportant and almost trivial – will, after a certain time, have an unpredictable effect on the behaviour of the system (Auyang 1998a:344, Richardson, Cilliers & Lissack 2007:33, Wagensberg 2007:27, 56-60, Schneider & Sagan 2009:55, Bishop 2011:116-117, 121-123, Cilliers et al. 2013:2).

The complexity of natural systems is additionally augmented by the fact that such organisations are inherently evolving. Reality is dynamic and time is a central concept in real-world organisations. It is not enough to describe static properties of the system and its components as they appear at a time  $t_0$ . In fact, “[a]ny analysis of a complex system that ignores the dimension of time is incomplete” (Cilliers et al. 2013:2). One *must* provide information about the system's dynamics. This should ideally include all its past states (as well as the states of the external environment) and equations regulating this organisation's development. These equations, on the one hand, relate the system's past to its present and, on the other, predict its possible future behaviours. Although various real-world objects are, for certain reasons, regarded as static things, they are in fact processes. Metastability – or the process-like nature of entities that are taken for inert objects – underlies individuals and signifies that we incorrectly conceptualise processes as fixed states. This dynamic understanding of the components of a complex system (and the dynamic understanding of the system itself) implies that the system and its parts strongly depend on their history. Path dependence signifies that the momentum of the system is regulated by the precise – already dynamic – conditions where the first “step” was made. The intensity of this dependence is evident in the fact that, due to the nonlinear amplification, even the most insignificant feature in the past may have a global and drastic effect after a time (see next paragraph). Hence, in order to understand the system, its past is as relevant as its present situation (Dobzhansky 1973:125, Yates 1987:414, Werndl 2009:197, Prigogine 2009:155, Schneider & Sagan

2009:151-152, Hooker 2011b:20-21, 33, 2011c:867, Bickhard 2011:95, Hofkirchner & Schafrank 2011:188-189, Cilliers et al. 2013:2).

The concept of nonlinearity has already been mentioned several times in the above discussion. Nonlinearity<sup>18</sup> is a property of complex systems that, even more than cardinality, renders them uncontrollable, both synchronically and historically. A nonlinear system does not satisfy the superposition principle: its functioning cannot be described by equations of the first degree and its outputs are not directly proportional to the inputs so that a microscopic disturbance is typically amplified in an exponential manner. Synchronically, the linear increase in the quantity of components causes that the amount of configurations among them expands exponentially and becomes unmanageable. Historically, the insignificant behaviour of a single piece of the system may trigger a dramatic macroscopic fluctuation after a time. The historical nonlinearity makes complex systems highly sensitive to initial conditions, which, in turn, increases their uncontrollability. The sensitivity is understood as an exponential divergence of processes issuing from neighbouring initial states, i.e. states that are finitely identical or identical within a margin of error. Because of this sensitivity, the behaviour of complex systems is chaotic – it is unpredictable although laws governing such organisms are, in principle, deterministic. The margin of error or rounding assumed in any approximation (due to the fact that realistic infinite series must be made finite) will, after a time, exponentially inflate the previously controlled inaccuracy, rendering any exact prediction invalid (Yates 1987:412-416, Gleick 1987, Eve, Horsfall & Lee 1997, Smith 1998, Strogatz 1994, Alligood, Sauer & York 1997, Auyang 1998a, 1998b, Elaydi 1999:117, Wagensberg 2007:56-57, Prigogine 2009:222-223, 324, Schneider & Sagan 2009:45, 115, 319, 350, 363-369, 377-379, Werndl 2009:203-204, Hooker 2011b:21, 25-26, Bishop 2011:105-111, Cilliers et al. 2013:2).

Another phenomenon that derives from the nonlinearity of complex systems is emergence, or the capacity of developing emergent properties. Emergent traits are characteristics that fail to be qualitatively comparable and analogous to the properties present in constituents or that are not directly derivable from lower-level entities. Inversely, systems that are emergent are non-resultant, non-additive and non-modularised: they cannot be explained by their microanalysis into independent parts because they are not mere superposed computations of their isolated components. Emergence emphasises the existence of multiple echelons in a system (each one with their own properties, processes, terminology and behaviours) and the interplay between them. Accordingly, complex systems are irreducible – it is impossible to divide the system into subsystems without an important loss of information. As certain important features are recognisable only from the whole system's perspective, any modularisation will trigger a damage of information. In other words, since the behaviour of the components depends on the emergent properties of the whole – and important characteristics of a lower level are dictated by a higher level – the system cannot be deconstructed into isolated individual portions, where the behaviour of a constituent appears as independent from the rest. Rather than being composed of modules, a complex system is a self-organising organism in which all the components are embedded and to which they all

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<sup>18</sup>The term 'nonlinearity' employed in complex-system theory refers to an entirely distinct phenomenon than the notion of nonlinearity used by Dahl (2011) in his treatment of linguistic complexity.

contribute. The organisational depth of complex systems is itself highly sophisticated: multi-dimensional, multi-level, multi-phasic with intra- and inter-level relations, and with top-down causation in addition to bottom-up causation. In this global non-modularisable coherence, a mechanic modular view breaks down and an organic one arises (Pagels & Llyod 1988, Crutchfield 1994, Casti 1994, Mihata 1997:31, Marshall & Zohar 1998:137-139, Auyang 1998a:178-179, 342-343, 2000:170, Schindwein & Ison 2007:237, Prigogine 2009:177, Hooker 2011b:21-22, 28-29, 40, 50, Bishop 2011:126, 128, Cilliers et al. 2013:2-3).

The above discussion shows that complex systems are extremely intricate, being persistently infinite: a) as boundaries are artificial inventions and the system is always a subsystem of a higher organisation, the constituents and their types or varieties – should the system be complete – are infinite; b) as everything is connected to everything else, the amount of relations existing among the constituents is infinite; c) the phenomenon of nonlinearity triggers an infinite amount of the system’s configurations even if the number of constituents is restricted to a finite one; d) due to the lack of boundaries and fluidity of individuals, the elaborateness of the system into organisational levels – from the most microscopic to the most macroscopic – is also infinite; e) to be complete, the series representing the system’s state or states of its components should be infinite; f) the system’s static or synchronic infiniteness is further complicated by its dependence upon history as all the previous states somehow contribute to the present situation, sometimes in an exponential manner.

Since any realistic complex system is infinitely complex, and is so in various aspects – these aspects may involve constituents, types, relations, configurations, descriptive empirical series and historical states upon which they depend, as well as organisational depth – a possible quantification of the complexity of a real-world system may be viewed as a multifariously infinite cardinality.<sup>19</sup> As a result, the total information included in any real-world complex system can be represented as an infinite set.

### 1.2.1.2 Models of real-world complexity

The properties of realistic complex systems outlined above have some important bearings on the scientific treatment of such organisations in models, distinguishing them from other simpler structures and their representations. Apart from being characterised in terms of their traits – such as those described in the previous section – complex systems can also be defined in terms of their models. Generally speaking, “complexity is the property of real-world systems that is manifest in the inability of any one formalism being adequate to capture all its properties” (Mikulecky 2007). While simple systems can be fully described by their models, a complex system never can (Cilliers et al. 2013:3-4).<sup>20</sup>

<sup>19</sup> It is important to note that although cardinality is not a unique or even the most important property of a complex system, the measurement of complexity of one, or more, complex systems can only be made in a numerical manner. Hence, it will necessarily involve the measuring and/or comparison of cardinality of a certain type.

<sup>20</sup> In general terms, all models of realistic phenomena are theoretical hypotheses that (because of approximations, idealisations and rounding) drastically simplify reality. However, in comprehending reality, no other solution is available. In fact, science is possible only because of approximations, idealisations and rounding (Rosen 1985, 1991, Futuyama 1998:128, Auyang 1998a:69-70, Cilliers 2007:82-83, 88, Diéguez

As complex systems are incompressible and irreducible, their models – irrespective of the degree of sophistication – are always incomplete. Since the information included in a complex system is infinite and the system cannot be sliced up into subsystems “without suffering an irretrievable loss of the very information that makes these systems a system” (Casti 1994:272), a complex system can never be entirely compressed by models, which are by definition finite, isolated and partial. Therefore, models never contain all the information that exists in the realistic system. If a model of a complex system were complete and able to represent all the possible behaviours of that system, the model in question would have to be at least as complex as the system it represents. Inversely, since all models of the real world inevitably simplify, only a limited portion of information corresponding to the real world will be present. A part of the data will always be left outside the arbitrary limits of description, imposed by the model itself. As explained, this portion is, in fact, infinite and, due to the sensitivity to minimal fluctuations present in initial conditions, will inevitably affect the system’s running after a time. Furthermore, a model of any complex system must partially frame the system it aspires to represent, isolating it from the environment. However, given that there is only one complete complex system, viz. the entire universe, and that no absolute boundaries are present in reality, the very isolation of the system and the specification of its boundaries – i.e. separating it from the remaining portions of the real world – will render the model incomplete. In order to model a complex system accurately, a scientist should model everything – life and reality included. Consequently, the incompressibility and irreducibility of real-world complex systems and the incompleteness of their models jointly imply that representations of complex systems are *per se* provisional. Any model is inherently tentative and fragmentary: it can always be expanded or comprised as far as its sophistication is concerned and developed within a different perspective. The representation and understanding of a complex system always changes as the theory, with which it is dealt, is revised (Richardson, Cilliers & Lissack 2007:26-28, Schlindwein & Ison 2007:237, Allen 2001, Allen, Strathern & Varga 2010, Cilliers et al. 2013:3).

By resorting to approximations in delimitating its content and limits of representation, any model of a complex system inevitably falsifies the real picture of affairs. The type of relation between the models and states of a realistic, target, complex system is many-to-many. There are an infinite number of states of the target system which can be mapped into the same state in the model (for instance, the series of a model is finite and corresponds to an infinite number of similar series in the target system that, however, diverge after the end point of a chosen approximation) and an infinite number of models can map a state of a single target system (for example, each model employs a different cardinality of the series representing a given state of the target system). Accordingly, the scopes and boundaries of models can be multiple and diverse. There is no unique model – no perspective can represent all the properties of a complex system. Hence, the study of complex systems necessitates a number of perspectives – an epistemological principle in analysis of such compositions is the exploration of perspectives (Cilliers et al. 2013:2-3).

The determination of the boundaries of a model and the limits of its precision (and, thus, the designation of the rest as a non-relevant noise and/or inactive environment) rather

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Lucena 2010:66, 75).

than being dictated by the system itself, is a pragmatic question of cutting up the ‘system’ and ‘environment’ that depends on convenience and suitability for a given analysis (so-called framing). As a result of this, the observer’s position, scientific needs (description purposes) and the model’s constructor or human actor should all be incorporated into the representation (or at least acknowledged in it). Epistemologically, it is impossible to separate the observer from the world: to a degree, reality results from the decisions made by the observer, just like the explanations concerning the world depend on the explainer. In complexity thinking, a basic assumption is that the subject and object of an experiment or an analysis cannot be radically separate: “complexity resides as much in the eye of the beholder as it does in the structure and behaviour of a system itself [...] and requires the reintegration of the observer in his observation” (Schlindwein & Ison 2007:236). Since complexity results from the position and perception of the observer, a certain portion of complexity is, in fact, subjective and hinges on how the explainer looks at and analyses the system. Complexity is something that exists as well as something we construct in models. Therefore, the degree of the complexity offered by a model will depend not only on the system represented by that model but also by this system’s interaction with another system, i.e. the observers or explainers. Complex-system thinking demonstrates that there is no one right answer when approaching a complex system – as a complete representation of a complex system is impossible, various manners of representation are conceivable. Each model answers only the questions relevant to itself – it does not respond to all possible questions (Senge 1990:281, Casti 1994:269-270, Cilliers 1998:4, 2007:82-83, 88, Smith 1998:127, Richardson, Mathieson & Cilliers 2000, Richardson, Cilliers & Lissack 2007:30-31, Prigogine 2009:222-223, Schlindwein & Ison 2007:233-238, Bickhard 2011:101, Hooker 2011b:43, 84, Bishop 2011:112, 115, 117, 121-123, Cilliers et al. 2013:3).

Just like any model of realistic phenomena, in order to be scientific, models of complex systems necessarily approximate the system under analysis and represent it in partially ideal terms. Only by making the complex simpler, can complexity be controlled, becoming knowledgeable for us. There is no a rule of thumb for developing models of complex systems and delimiting their (i.e. the models’) minimal complexity. Generally speaking, the less reductionist and simplistic a model is and/or the more accurately it preserves typical properties of complex systems outlined above – being still treatable or transparent enough to be comprehended – the “better” it is. There are three main ways of approaching complex systems in scientific representations: by designing many-body models (a large number of constituents of a few types are connected to each other by a few types of relations – it is their nonlinearity that renders these models complex); organic models (highly specialised constituents of a variety of types are strongly coupled and integrated in the whole) and cybernetic models (these representations combine many-body and organic models). Nowadays, many-body theories are the most advanced, probably, because they generalise the most (for detail, see Auyang 1998a, Hooker 2011b and 2011c:864).

As a main rule, a conceptual framework of complex systems – and, in particular, of many-body models – necessitates at least two, somehow related, scales: a composite macro-scale or macro-explanation, and a variety of situated micro-scales or micro-explanations in which individuals can be accommodated and by means of which they can be connected. By

representing macro- and micro-levels and the relation existing among them, the framework appears as both holistic and atomistic. Macro-explanations solve for the behaviour and dynamics of the system as an all-inclusive rounded individual, while micro-explanations couple the dynamics of the whole to the dynamics of underlying constituents and their connections. Moreover, the relation between the levels is not only bottom-up but also top-down. This means that causation operates in both directions. On the one hand, it goes upwards from micro-levels to macro-levels: atomic components combine and condition the behaviour of more complex entities and then the global system itself. On the other hand, the causation goes downwards from macro-levels to micro-levels: the system and more complex compositions condition the properties of atomic elements. Thus, the explanation of complex systems in their models “involves integrated holistic processes that resist modelling as simple bundles of separate units” (Hooker 2011b:50) and necessitate multidimensional treatments (Cilliers et al. 2013).

Apart from this, as already mentioned, the more properties typical of a realistic complex system a given model preserves, the more adequate it is. In this manner, models range from more resultant, isolated, coarse-grained (less precise), settled for equilibrium, with fixed boundaries or external world relegated to exogenous parameters, and with endogenous variables externalised or regarded as given and fixed, to more emergent, open, relational, fine-grained (more precise), endogenous and dynamic. In all such cases, the exact shape of a representation is dictated by the aimed statistical treatment, generalisations to be discovered and the required precision in controlling causal factors in the system. By doing so, each model unveils different macro-truths and their relation to micro-states, and solves for distinct fragments of the target real-world system, distinguishing diverse patterns and dissimilar facets of its organisational consistency (Auyang 1998a:11, 15, 67-70, 342-344, Prigogine 2009:177, Diéguez Lucena 2010:66, 75, Hooker 2011a, 2011b and Cilliers et al. 2013).

### 1.2.1.3 Language as a complex system

As already explained, complexity underlies all real-world systems, not only physical, biological and chemical ones, but also – and, in fact, especially – those related to human activity, be they economic, social or cultural (Cilliers et al. 2013). Accordingly, language – a phenomenon where physical, biological and socio-cultural factors coexist and intervene – is viewed as an exemplary real-world complex system (Pinker 1994, Li & Vitanyi 1995, Larsen-Freeman 1997, Bastardas-Boada 1999, 2013a, 2013b, Herdina & Jessner 2002, Culicover & Nowak 2003, Cejnarova 2005, Larsen-Freeman & Cameron 2008, Köhler, Altmann & Piotrowski 2005, Miestamo, Sinnemäki & Karlsson 2008, Beckner et al. 2009, Ellis & Larsen-Freeman 2009, Faraclas & Klein 2009, Givón 2009, Givón & Shibatani 2009, Nichols 2009, Pellegrino et al. 2009, Sampson, Gil & Trudgill 2009, Solé 2010, Dahl 2011, Massip-Bonet 2013, Munné 2013, Mufwene 2013; see also Jenner, van Peursen & Talstra 2006, Sinnemäki 2011, Andrason 2011a, 2012a, Aronin & Singleton 2012, Evans 2014:5, 23-24, 157-158, Aronin & Jessner 2015 and Andrason & Visser forthcoming).

In this way, it is assumed that language should offer all the characteristics typical of realistic complex bodies, being open, situated with fluid boundaries and unstable individuals; “infinitely” cardinal with respect to its components, relations and configurations; dynamic, metastable and path dependent; nonlinear, sensitive to initial conditions, exponentially amplifiable and in regions chaotic; emergent, non-additive, non-modularisable and organisationally intricate. As far as the modelling of language is concerned, this will typically be incompressible, model-specific and model-pluralistic. Therefore, as was the case with other real-world complex organisations, high cardinality (especially, of components and relations or rules) constitutes only one of the features that make language an exemplary complex system (Beckner et al. 2009, Munné 2013, Mufwene 2013, Massip-Bonet 2013, Bastardas-Boada 2013a and 2013b; see also Massip-Bonet & Bastardas-Boada 2013).<sup>21</sup>

Language is a prototypical open system that constantly exchanges material and energy with the environment. It influences our reality and perception (for instance, through categorisation), being, at the same time, affected by the external world (for example, through the creation of new lexemes necessary to represent new objects). The openness of a linguistic organisation – or anyone of its sub-parts – is also evident in a constant grammatical renewal of languages. Like energy, words propel the formation of novel, grammatical constructions (usually periphrastic) so that the grammatical inventory of forms (‘core grammar’) is constantly renovated by using lexical and syntactic material. As older, more schematic categories become obsolete and disappear, new formations are continuously derived. By interacting with its milieu, language is always a situated phenomenon: it is invariably embedded in a culture, social organisation and higher bodies upon which it depends and to which it simultaneously contributes. Accordingly, any fragment of a language is embedded in a larger system so that no components can be viewed as isolated with clear boundaries and fully externalised exogenous settings. In general, the boundaries at which language comes into contact with the physical world, biology of human mind or socio-cultural institutions, are vital parts of the linguistic system itself, so that, under certain approximations, physics, biology, sociology and culture can be considered important spheres of languages. As everything is open, situated and embedded with no non-arbitrary boundaries, the individuality of the components of a language is fluid and unstable. An entity that at a certain level appears as an individual may at more macroscopic levels be a component of another individual. Inversely, if envisaged from a more microscopic perspective, an individual can constitute a system of closely collaborating elementary individuals. Boundaries and taxonomical classes are fuzzy (on the fuzziness of language, see Munné 2013:178-186; of the use of fuzzy logic and fuzziology in linguistics, see Zalewski 1988 and Hodge 2003; see sections 1.2.2.2 and 1.2.2.3, below). As will be explained below in this chapter, the meaning of a grammatical category such as a verbal tense – when approached from the perspective of cognitive linguistics – constitutes a typical example of such behaviour. At a macro-level, a gram –

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<sup>21</sup> On complexity of language(s) and its characteristics, see also Trudgill (2001, 2004), Sampson (2001, 2009), Dahl (2004, 2009, 2011), Gil (2006, 2007, 2008), Kusters (2003), Hawkins (2004), Miestamo (2006, 2008, 2009), McWhorter (2005, 2009), Nichols (2007a, 2007b, 2009), Miestamo, Sinnemäki & Karlsson (2008), Sampson, Gil & Trudgill (2009), Deutscher (2009), Bisang (2009), Progovac (2009), Givón (2009), Givón & Shibatani (2009), Lee et al. (2009), Sinnemäki (2011), Kortmann & Szmrecsanyi (2012), Szmrecsanyi & Kortmann (2009, 2012).

treated in its totality as an individual – offers a certain global meaning that interacts with other macroscopic grammatical objects in the system. At this moment, the meaning can be viewed as the information which is attached to the form as such. However, when analysed at a lower level of description, the formation equals a fluctuating mass of more atomic cases and senses, each one with its particular individuality and network of relations with other lower-level individuals (e.g. words appearing in the immediate vicinity that contribute to the context and the specific sense of this gram; Bastardas-Boada 2013a:16, 18-19, 2013b:156-159, Massip-Bonet 2013, Munné 2013, Mufwene 2013, Andrason 2012a; on the openness of language, see also Jenner, van Peursen & Talstra 2006, van Uden 2007:148-150).

The cardinality of the components of a language is extreme. Only the number of words is enormous and due to the derivation or composition *de facto* infinite. If other purely linguistic components are accounted for (sounds and their formants, morphemes such as inflectional endings, derivational affixes, as well as clitics, grammatical rules, conceptualised meanings, etc.), the amount of constituents of a language is absolutely untreatable.<sup>22</sup> Probably, this infinite cardinality appears in its clearest form at the level of sentences, as their number in any language is endless.<sup>23</sup> The immensity of the components and factors that concern language becomes even more evident if one includes physical, biological or sociological parameters and variables. An extreme cardinality of components, even if approximated to purely linguistic ones, renders the number of relations among constituents absolutely overwhelming. As everything interacts with everything else, language establishes a gigantic set-up of connections – the amount of combinations between the components that belong to various levels in clauses, phrases and sentences is absolutely unmeasurable. These interactions are infinite due to the fact that all the components of a written text, oral discourse or pragmatic situation constantly influence one another in a circular, feedback-loop manner: the environment and the entity which is embedded in it are given simultaneously and cannot be separated. To put it simply, the context influences the entity, being at the same time already influenced by it. There is no exact starting point of this mutual interrelation as neither the individual nor the context comes first: their relation is absolutely interwoven and inextricable.<sup>24</sup> The infinite cardinality of language may also be seen at another plane. As the number of features, parameters and variables is infinite (language being embedded in the realistic world), the series with which one would aspire to capture the total information provided, even, by a microscopic fragment of a language is uncontrollable: it can always be expanded *ad infinitum*. For instance, a series (i.e. a string of information) that describes a single sense offered by a gram in a precise time and place can be made infinite as, gradually, more factors are incorporated, from coarse-grained and purely linguistic to fine-grained and pragmatic, up to the entire universe (Cejnarova 2005, Solé 2010:191-217, Andrason 2012a,

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<sup>22</sup> Moreover, due to the instability and fluidity of individuals, the cardinality of components can always be increased to infinity.

<sup>23</sup> As far as grammatical components (up to the level of sentences) are concerned, their cardinality could be viewed as potentially infinite. It is possible to imagine that, at least in theory, one could count all the components (e.g. morphemes, lexemes, words and sentences) *produced* in a language from a time  $x$  to a time  $y$ . This would be logically represented as a finite number  $n_a$ . However, this finite number would not capture the language as noosphere, i.e. as an analysable system with a potential that can be realised or not.

<sup>24</sup> This mutual relation involves an infinite number of interdependent feedback acts, uncontrollable for even two participants whose interaction gives a differential second-order *nonlinear* equation (cf. section 7.3.1.4).

Bastardas-Boada 2013a:18-20, 2013b:156-159, Munné 2013, Mufwene 2013; cf. Evans 2014:173-174).

Language is an inherently dynamic phenomenon corresponding to a network of incessant fluctuations and modifications. The stability of language is only illusory. Although in grammar books we take it for a stable set of rules, we know that it is constantly changing. It is a trivial statement that *all* languages evolve. They evolve at the level of ontogeny (in an individual human being), glossogeny (historical change in a population) and phylogeny (evolution of the language capacity in the species). This dynamic nature of language and its metastability may be identified in cognitive definitions of meaning, where the semantics of a construction is represented as a map whose elements are linked by means of evolutionary (or diachronic) templates, so-called grammaticalisation paths (see, section 1.2.2, below).<sup>25</sup> The inherently dynamic character of language is also evident in its historicity and strong dependency on previous stages. The history of language clearly conditions its present state and future development (Bybee, Perkins & Pagliuca 1994, Klein 1999:220, 348-349, 391, 515-517, Culicover & Nowak 2003, Levin & Folley 2004:448-487, Massip-Bonet 2007, 2013, Fitch 2010:32-34, Dahl 2011, Narrog & van der Auwera 2011, Bastardas-Boada 2013a:19, 28, 2013b:159-161, Munné 2013, Mufwene 2013, McMahon & McMahon 2013).

The infinite interactions between the incalculable components of a language are typically nonlinear: a small fluctuation in certain variables can, after a time, have enormous consequences for the system in question. This nonlinearity explains why linguistic systems that have emerged from a common ancestor can become extremely dissimilar, even though

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<sup>25</sup> Grammaticalisation is not a unified concept. It has been defined in a variety of manners. From a diachronic perspective, grammaticalisation traditionally refers to the development of a lexical element to a grammatical element, or to the evolution of a grammatical element from less grammatical to more grammatical (Kuryłowicz 1975:52; see also Heine, Claudi & Hünnemeyer 1991, Bybee, Perkins & Pagliuca 1994, Dahl 2000a and Hopper & Traugott 2003; cf. Meillet 1948:132). It can also be viewed as a “change which gives rise to linguistic expressions which are coded as discursively secondary” (Harder & Boye 2011:60-61, Narrog & Heine 2011a:2), as “the addition of procedural information to the semantics of a construction” (Nicolle 2011, Narrog & Heine 2011a:2), or as a process “by which the parts of a constructional schema come to have stronger internal dependencies” (Haspelmath 2004; cf. also Harder & Boye 2011:64). Some regard grammaticalisation as a mechanism of a change (Haspelmath 1998), while others view it as an epiphenomenon of various changes. It is also defined as a type of language change “in which form and meaning pairings change, i.e. of morphosyntax and morphology” (Traugott 2011:21). Usually, grammaticalisation is used hermeneutically (Klausenburger 2000, Campbell 2001a, Plag 2002, Sansò & Giacalone Ramat 2008). As will be demonstrated in this dissertation, it can be also employed to formulate predictions (e.g. reconstructions; cf. Heine 1997). Following Dahl (2000a), I will understand grammaticalisation in its broadest version, i.e. as an inclusive phenomenon that covers all processes by which grammatical items and features may develop. Thus, it is a process where a lexical (syntactic and pragmatic) pattern becomes grammatical (morphological and semantic), where a grammatical pattern becomes more grammatical, and where (having reached its apogee of grammaticality) a grammatical pattern becomes de-grammaticalised. In this way, grammaticalisation captures the entire life of grammatical constructions.

Furthermore, grammaticalisation can refer to synchronic fieldwork. This has especially been explored in cognitive linguistics and typology (Langacker 2011, Cacoulios & Walker 2011, Kortmann & Schneider 2011, Bisang 2011, Narrog & Heine 2011b). In the present study, grammaticalisation will have both diachronic and synchronic dimension. On grammaticalisation, see Givón (1979), Heine & Reh (1984), Lüdtke (1987, 1989), Greenberg (1991), Ramat (1992), Dixon (1994), Lass (1990, 1997), Giacalone Ramat & Hopper (1998), Campbell (1998, 2001), Haspelmath (1999, 2003, 2011), Klausenburger (2000), Heine (1993, 2003:173-174), Detges & Waltereit (2008a, 2008b), Fischer (2011) and Bybee (2011). On possible counterevidence for grammaticalisation, see Campbell (1991, 2001a, 2001b), Newmeyer (1998), Janda (2001), Norde (2001). On the incorporation of degrammaticalisation to broadly understood grammaticalisation, see (Heine 2003; cf. also Giacalone Ramat & Hopper 1998, Norde 2011 and Börjars & Vincent 2011).

the difference between them would originally have been insignificant. Given that the series describing a state are, in reality, infinite, while for any description they must be made finite and, thus, rounded and approximated, certain variables are ignored. However, due to the nonlinearity of the interactions, the uncertainty or the error assumed in rounding will be inflated exponentially and the calculation fallacious. In other words, the approximation in some linguistic or extra-linguistic characteristics and relations will, after a time, render any exact prediction (or reconstruction) of the state of a language (or even of one of its components) invalid. Thus, language evolution is a probabilistic and chaotic phenomenon: its unpredictability and randomness derive from the high complexity of a language and the nonlinear sensitivity to the error assumed in specifying the set of initial conditions. This means that although laws governing language evolution could be and/or are in theory deterministic – in the way that each effect has its deterministic immediate cause – an exact and complete outline of long-term evolution (or reconstruction) is unpredictable (or unrecoverable). Due to the sensitivity to the initial conditions and exponential inflation of the error, the exact state of a gram after a long interval of time cannot be estimated although the laws governing such organisms are deterministic and each single next-stage change is predictable (of course, within an error bound; Culicover & Nowak 2003, Bybee 2010, Andrason 2012a, Massip-Bonet 2013, Munné 2013, Bastardas-Boada 2013a:19-20).

Language fails to be a simple aggregate of its atomic material. On the contrary, new emergent and non-resultant properties appear as constituents organise so that the system, as a whole, develops novel characteristics that originally did not exist at the constituents' level. This will be evident from the discussion in section (1.2.2), where I will show that according to cognitive linguistics, the meaning of a form as such – i.e. the total meaning of an entity, be it grammatical (e.g. a tense) or lexical (e.g. a word) – is much more than a mere summation of concrete microscopic instances where this item appears. It has novel properties that do not exist at a lower level. To be precise, at a more macroscopic plane, where the form is analysed as a holistic phenomenon, the vector of direction or change becomes an integral feature of the semantic representation: atomic empirical instances belonging to the micro-level generate a dynamic structure of a higher rank, a gram viewed as a developing phenomenon where time and evolution are central parameters. In this manner, a set-theoretic union of microscopic senses available on concrete occasions (the polysemy of a gram) comes to make reference to the evolutionary capacity of grammatical forms and of the language in general. This novel property can clearly be recognised in semantic maps organised along the grammaticalisation paths which are commonly used to represent and define the meaning of grams viewed macroscopically. In these representations, the time-dependency or vectored orientation is a new emergent characteristic of a formation, unperceivable at the microscopic level, where the description of atomic cases is conducted (for detail, see section 1.2.2). As macro-levels are not additive conglomerates of micro-properties, the whole is not directly reducible and merely modularisable into unrelated parts. The existence of emergent properties emphasises the relevance of organisational depth and its intricacy. Various levels exist embedded in one another and influencing one another: each one with its specific emergent properties that differentiate it from the lower and higher planes (Hopper 1988, Bybee & Hopper 2001,

Culicover & Nowak 2003, Croft 2003:288, Cejnarova 2005, Massip-Bonet 2013, Munné 2013, Mufwene 2013, Andrason 2012a).

To recapitulate, language is a prototypical complex system and, hence, offers all the properties typical of complex bodies. As in real-world complex systems, the cardinality of its constituents, relations, configurations, the empirical series that describe it, historical states upon which it depends or organisational hierarchical structures are all infinite. Therefore, the information included in (a) language – as in any real-world complex system – equals an infinite set.

In addition, all models of linguistic complexity – irrespective of their sophistication – inevitably face exactly the same problems that accompany representations developed for other realistic complex organisations: they are incomplete, provisional, pluralistic and characterised by distinct modelling intricacy. Language viewed as a realistic complex system is incompressible and irreducible, which means that its model will always be incomplete and fragmentary. As has been explained previously, if one wishes to model a complex system accurately, s/he would have to model everything, including life and reality. Given that in order to be complete, a series describing a linguistic phenomenon (or the entire system) would have to be infinite, and that our descriptions – if they are to be manageable – must be finite, it is necessary to establish the limits of precision and, hence, to idealise the organisation to be represented by means of rounding, introducing boundaries and isolating that target organisation. Under such an approximation, the infinite amount of data is neglected: any series and thus the entire model are made uncertain. Since all the linguistic models drastically simplify and since this simplification typically depends on utilitarian factors and on the perspective adopted by the researcher, all models are provisional. Given that the determination of the limits of the model and the extent of its precision, rather than being dictated by the system itself, is a pragmatic question of framing, the observer's position and model constructor's objectives must somehow be acknowledged, if not explicitly incorporated into a proposed representation. This also means that there is no unique model that would be capable of representing all the properties of a complex linguistic system. Hence, an infinite number of models can map a state of the target grammatical system. Each model employs a different cardinality of the series representing a given state of the target system. Accordingly, the scopes and boundaries of models can be multiple and diverse – the representation of a language is inherently pluralistic. However, this relativity should not be regarded as a weakness typical of and limited to linguistics. It is exemplary of any modelling of real-world complex systems by which such organisations are distinguished from non-complex and non-realistic systems (Cilliers et al. 2013; cf. also Massip-Bonet 2013a:17-18, 2013b:153, 155 Munné 2013 and Mufwene 2013).

### 1.2.2 Complex system of TTAM verbal semantics<sup>26</sup>

Given that language displays characteristics that are exemplary of complexity (such as openness, situatedness, fuzziness, instability of individuality, infinite cardinality, dynamics, meta-stability, emergence, nonlinearity, organisational intricacy with multiple macro- and micro-levels, and chaos) and may be therefore viewed as a prototypical complex system, its modelling – or the modelling of one of its subparts – is required to preserve properties typical of complex bodies (cf. Massip-Bonet 2013:54-57, Bastardas-Boada 2013a:28-29, 2013b:167-171 and their programmes of complexity linguistics).<sup>27</sup> Therefore, the analysis of the TTAM semantics of the Basse Mandinka verbal system, which constitutes the object of this dissertation, will be based on the complexity model.

In general terms, in recent years, it has been demonstrated that various complex properties of language – in particular of its TTAM semantics – can be preserved if diachronic laws, so-called grammaticalisation paths, are employed as explanatory vehicles of meanings, and analysed synchronically. This basic principle enables scholars to explore and describe a given verbal system in a dynamic, fuzzy, nonlinear, intricate manner, thus replacing the stasis, rigidity (and/or neatness), linearity and minimal intricacy of structuralism. To be precise, the use of grammaticalisation paths (with their qualitative and quantitative dimensions), which correspond to tendencies governing the evolution of grammatical constructions (aspects, tenses and moods; cf. below in 1.2.2.2 and 1.2.3), bestows linguists with the possibility of defining synchronic entities and the entire synchronic system “as macroscopic dynamic meta-stable phenomena that, in a nonlinearly manner, emerge from the microscopic complexity, delivering in certain regions a typical chaotic behaviour: although laws controlling the development are deterministic, unpredictability and irregularity appear” (Andrason 2012b:161). Since the majority of features that are characteristic of real-world complex bodies – if not all of them – can be maintained in this manner, the model of verbal semantics based on grammaticalisation paths “represents linguistic a reality with a lesser approximation and rounding margin and hence with a major precision than all structuralist descriptions” (ibid.). Therefore, it can be viewed as more adequate than traditional structuralist and modernistic representations.<sup>28</sup> In the following sections this approach will be explained in detail.

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<sup>26</sup> Although the model presented in this section draws from ideas proposed by other scholars (usually working within cognitive linguistics, grammaticalization theory, typology and usage-based approach), several aspects of this representation have been advanced by myself. To be precise, the ideas of a wave (section 1.2.2.3), a stream (section 1.2.3.4), and an ocean (section 1.2.2.5) are my own contributions.

<sup>27</sup> This proposed synchronic linguistics should include the following features: dynamics, time-dependency, meta-stability, variability, multi-level (or manifold) complexity, situated-ness, relationality (connectivity), openness (connection to the linguistic and extra-linguistic context, as well as inclusion of non-systemic parts), fuzziness, non-modularity, emergence, holistic integration of parts and wholes, nonlinearity, recursive loop principle, bottom-up and top-down causation, probabilistic behaviour, chaos, acknowledgment of provisionality and incompleteness of the model and inclusion of the observer (human factor) in the representation (Massip-Bonet 2013, Bastardas-Boada 2013a, 2013b, Munné 2013).

<sup>28</sup> I use the term ‘structuralism’ in a broad sense, similar to that employed by Bybee (2010:182-193). It encompasses all modernistic models in which language (both as far as its structure and semantics are concerned) is represented as a static, neat, tidy and oversimplified system. Thus, the term may refer to structuralist models *sensu stricto*, to functional models, to generative models and to typological models.

### 1.2.2.1 Sense and polysemy

In accordance with usage-based approaches to language – such as cognitive and grammaticalisation theories – and in agreement with the supreme intricacy of linguistic systems, the meaning of grammatical constructions is regarded as a complex construct.

The most elementary level of analysis involves senses. A sense may be defined as a concrete value which is displayed by a locution in a specific place and time, and which is “experimentally” measured by employing determined semantic domains or categories. It is thus a value that a gram receives in a precise context, a value that is categorised by means of available conceptual structures. This implies that atomic senses depend on their contextual settings (i.e. on linguistic and extra-linguistic factors) and on our classification devices (i.e. on properties of humans’ conceptual categories; cf. Evans & Green 2006:352-353, 368 and Nikiforidou 2009:17, 26). The definition of a sense may in fact be reduced to the following statement: a sense is a compatibility of a form with a concrete context.

As defended by modern science, no two contexts describing the real world are perfectly identical. On the contrary, they invariably differ in some parameters. The detection of this dissimilarity depends on the precision adopted in the description and analysis. Coarse-grained (macroscopic) analyses typically group various contexts as identical, while fine-grained (microscopic) studies treat previously indistinguishable milieus as different. But, whatever our level of precision is, in an ultimate – i.e. the most atomic – description, two contexts are always dissimilar due to the infinite complexity of the universe (Auyang 1998a:344, Smith 1998:51-67, 90-115, Wagensberg 2007:56-57, 60, Schneider & Sagan 2009:55). Since senses are contextual phenomena – they are activated in determined environments – and since no two contexts are ideally duplicated, no two senses can be perfectly the same. In a certain approximation, any two senses somehow differ because the contexts in which they appear – if analysed with the highest precision – are dissimilar. In living languages, the ultimate dissimilarity of any two contexts stems from yet another fact: no two utterances can be pronounced at the same place and time. Thus, if otherwise superficially identical, they must differ at least in their temporal settings. This implies that all the uses are produced in different contexts and therefore convey distinct senses. For any natural living language with an interminable production capacity and an unlimited number of contexts, the amount of senses for any gram (or element) will, thus, be infinite (Aarts et al. 2004, Riemer 2010, Evans 2014:173-174; on problems related to distinguishing senses, see Taylor 1989, Tyler & Evens 2001:731-733).

A form may be found in an infinite number of contexts, delivering a likewise infinite number of senses. Certainly, such a fragmentary description of reality (in our case of a verbal gram) is unpractical. Therefore, scholars usually employ larger concepts that enable them to jointly treat various contexts and senses, and inversely to reduce the infinite amount of data to a finite and workable series. As mentioned, the extent of this reduction (and hence the precision of an analysis) is linked to the categorisation technique adopted in a given study (Auyang 1998a:344 and Prigogine 2009:213). Thus, the number of senses observed empirically by a researcher when providing a taxonomy of uses of a gram is closely related to

how reality is divided into conceptual boxes. If the “measuring tools” (viz. concepts or categories) are broad, a construction may seem to convey a few senses. In fact, if extremely wide taxes are used, the procedure can deliver a single sense in all uses. However, such an approach usually fails to be helpful because the analysed gram will be equalled with a sense that does not explain its entire semantic nature and that, incorrectly, admits the inclusion of forms other than the gram itself. The definition is too imprecise and too broad (cf. Bybee 2010). If, on the contrary, our conceptual devices are sufficiently sensitive, a gram may seem to provide ten, hundreds, or thousands of senses.<sup>29</sup> Typically, the former description ensures the conceptual consistence of a phenomenon but lacks precision, while the latter provides a far too detailed and disordered view. It is important to emphasise that any such categorisation is external to the universe and, hence to language, being rather tied to our theoretical and cognitive foundations. What is empirically certain or objective (if anything can be absolutely objective in science) is that a form may appear in a potentially infinite amount of uses and, therefore, in an infinite number of contexts which at an ultimate level invariably differ in certain parameters due to the complexity of the real world. Consequently, if the world’s complexity is envisaged, a form is inherently polysemous: the range of this polysemy is infinite but, depending on our categorisation, it will appear as more (high fragmentarisation) or less (low fragmentarisation) extensive.

The polysemy or diversity of senses of a grammatical item is the norm among the languages of the world. Any linguistic form regularly provides several senses that in some cases may appear as unrelated and even contradictory to each other (Cuykens & Zawada 2001a, 2001b, Croft & Cruse 2004, Evans & Green 2006:169, Bybee 2010:183, 186-187, Falkum & Vicente 2015:1; cf. also Heine 1997, Evans & Tyler 2004, Evans 2006, Taylor 2006). Modern linguistics assumes that this typical semantic polyvalence of a grammatical form necessarily arises due to language change or, as is broadly understood, grammaticalisation. To be exact, one grammatical construction typically offers various senses that are activated or become evident in specific contexts. Each context (which is ultimately somehow different from the previous contexts in which the form has appeared) calls upon slightly different semantic properties of the formation.<sup>30</sup> It is due to this ability to be constantly reused in new contexts that constructions (words, morphemes, syntactic locutions, etc.) evolve (Evans & Green 2006:352-353, 368, Nikiforidou 2009:17, 26, Bybee 2010:183, 186-187).

Obviously, as each sense is prompted in and produced by a specific context, all of them depend on environmental factors. It must however be emphasised that all senses – from a sense that seems to be a stabilised, “normal” value of the form (the most prototypical), to the most exceptional one (the least prototypical) – are contextually induced. In language, there are no senses that are context-free, because any sentence or text (be it written or uttered) is produced in a concrete environment. Even supposedly context-free encyclopaedic meanings are contextual, since they are restricted to their own milieu, i.e. general quotations or dictionary entries (cf. Börjesson 2014:308). If anything, the absence of context (i.e. the

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<sup>29</sup> As explained, if our concepts are extremely atomised, the number of senses will become infinite.

<sup>30</sup> As far as verbal semantics is concerned, these contextual senses, which a single form can convey, may make use of distinct and even contradictory semantic domains within the categories of tense, aspect, taxis and mood.

non-presence of certain overt contextual elements, which could make a given sense explicit) is a type of context, as well.

### 1.2.2.2 Meaning as a qualitative dynamic map – a vector

A highly important property of any polysemous set – either extended (in a more atomic description) or minimal (in a more coarse-grained description) – is that it is not an accidental cluster of disparate values. One of the most fundamental principles with respect to polysemy is the fact that diverse senses conveyed by the same form are necessarily related. Relatedness of senses is a constant feature in languages and constitutes one of the tenets of cognitive linguistics. Nothing is random in reusing a form in new contexts and, thus, in adopting it to new values. The cognitive relation between the senses conveyed by a construction – labelled as the ‘relatedness principle’ – is both conceptual and chronological. First, as far as the conceptual link is concerned, one sense constitutes a semantic foundation of another in the way that by applying universal human cognitive mechanisms (for example, metaphor, image-schema processes, metonymy, subjectivisation, context induced reinterpretation, conventionalisation of implicatures, abduction, etc.) the formation can be extended to a new environment, where a new value is activated (Austin 1962, Andersen 1973, Anttila 1989, Sweetser 1990, Lichtenberk 1991, Traugott & König 1991, Bybee, Perkins & Pagliuca 1994:289, Heine 1997, Radden & Kövecses 1999, Panther & Radden 1999, Croft & Cruse 2004, Steen 2007, Yu 2008, 2009, Carstairs-McCarthy 2010, Geeraerts 2010:203-222). Second, as far as the chronological relation between two adjacent senses is concerned, the value that represents the conceptual foundation of another usage and, thus, of a new sense, historically precedes the sense which has been derived from it, by definition.

In even stronger terms, linguists talk about “a cognitive fact”: polysemous meanings are related in reasonable and methodical ways (Tuggy 2003:323-324). Polysemy is not just a set of different meanings attached to a form. On the contrary, in a polysemous structure, the connection among the senses is inherently logical and systematic (Tuggy 2003:348-350; cf. Munné 2013, Massip-Bonet 2013). A polysemous space constitutes a well-ordered conceptually coherent whole (cf. Heine, Claudi & Hünnemeyer 1991:224-225). The relation unifying the senses is reasonable and systematic because polysemous extensions reflect and arise from the abovementioned universal human cognitive mechanisms that ensure a conceptual bond among numerous values, even the most disparate ones. By applying these cognitively natural procedures, speakers expand one sense into another and in this manner construct superficially incongruent polysemous compositions (cf. Taylor 2002:138-139, Tuggy 2003:348-350, Evans & Green 2006:332-352, Andrason & Locatell forthcoming; see also Ibarretxe-Antuñano 1999:29-30). The conceptual relation is possible and visible only for adjacent senses. For large polysemous compounds, the conceptual coherence can uniquely be recovered from a diachronic perspective, as it corresponds to the reiteration of a conceptual relation that exists between the immediately adjacent values. In other words, two similar senses are conceptually related – one is derived from another by means of various cognitive mechanisms. However, a large number of senses of an extremely broad polysemous set are

conceptually coherent only because this conceptual relation that links two senses has been applied  $n$  times (cf. Andrason & Locatell forthcoming).

Accordingly, following cognitive, grammaticalisation and usage-based theories, the form's meaning is understood as its entire, logically organised and coherent polysemy. Since this semantic potential consists of an array of individual concrete senses which are somehow related, or since there is, by definition, "a motivated [linear or multi-linear] relationship between polysemous senses" from a central value to its extensions (Cruse 2004:108; see also pages 109-110), the total meaning can be represented as either a map, a web, or a network (Tyler & Evans 2001:746, 2003:261-262, Geeraerts 2010:192-199, 203, Broccias 2013:2-4, Falkum & Vicente 2015:11-12, Evans 2004, 120, 2015:104, 122). In these maps, multiple components (i.e. the senses) are connected by links that chain them to one another. As previously explained, this linkage is both conceptual (it reflects universal cognitive procedures which allow certain meaning extensions) and historical (it reflects the historical expansion of the polysemy; Lakoff 1987:12-13, Gibbs 1994:157, Heine, Claudi & Hünnemeyer 1991:224-225, 259-260, Taylor 2002:98, 138-139, Tuggy, 2003:323-324, 348-350, Janssen 2003:96, Haspelmath 2003, Evans & Green 2006:36, 169, 328, 331-352, Lewandowska-Tomaszczyk 2007:140, 147-148, Nikiforidou 2009:17, 26, Bybee 2010, De Haan 2010, and Van der Auwera & Gast 2011:186-188; on current approaches to polysemy in cognitive linguistics, see Falkum & Vicente 2015).

To show the coherence of a polysemous set, the map can be linked in two manners, either by using static (i.e. purely conceptual) or dynamic (both conceptual and diachronic) explanations. The difference between them reflects the two properties of polysemous compounds presented above, i.e. the conceptual and/or chronological relation of their elements.

One type – one of the so-called 'psychological' or 'statistically plotted maps' (Narrog & van der Auwera 2011 and Andrason forthcoming (a)) – has a primarily synchronic dimension and portrays the radiation of the components of the map from the central to other peripheral elements and their possible psychological reality for speakers.<sup>31</sup> The central senses (i.e. those from which other values radiate) are prototypical, while peripheral ones (i.e. those that spread from the central value) are non-prototypical. Since, in most studies, prototypicality is correlated with frequency, prototypical senses are the most common and non-prototypical ones are infrequent and/or exceptional. Frequent senses are stabilised and, therefore, likely correspond to the users' representation of the meaning of a form. Infrequent senses, on the contrary, do not enter into this representation, being rare and psychologically non-stabilised (Gries & Stefanowitsch 2006, Gries 2006, Gilquin 2006; concerning the issue of prototypicality, see also Evans 2004, Geeraerts 2010:183-189; cf. next section 1.2.2.3). This means that radial maps are not only qualitative but also quantitative. They are usually plotted from statistical studies, which involve the analysis of frequency, the most tangible proof of prototypicality. This statistical essence makes it possible for these maps to determine and portray what the conceptual relation in the speakers' mind may be. They represent the

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<sup>31</sup> This type roughly corresponds to maps designed by means of the so-called space-driven or meaning-driven approach as described by Zwarts (2010). In this model, maps are sometimes referred to as radial networks, mental maps, mental spaces, or semantic spaces.

psychological cohesion of meaning. They tell us what speakers think about the form and how they relate the various meanings of it to each other. As explained above, the most prototypical sense constitutes the map's nucleus, which is associated by the speakers with the form, whereas less prototypical values correspond to radial extensions (for details, see Lakoff 1987, Langacker 1988, De Haan 2004, 2010). Both properties (i.e. the inclusion of quantitative information and relation with the psychological reality of the form) can be viewed as advantages of this type of map. However, a weakness of this representation is a possible disconnection from diachronic reality and, in principle, an exclusive synchronic dimension leading, in some instances, to "folk-etymological" maps.

The other type of maps (sometimes labelled 'classical maps'; Narrog & van der Auwera 2011) have an inherent diachronic dimension, apart from the synchronic one, and represents the chronological connection between the components of a polysemous set attested synchronically (cf. Haspelmath 2003, Geeraerts 2010:203; see also Moravcsik 2013:249-252).<sup>32</sup> Such dynamic maps aim to portray the synchronic meaning of a form not by relating its statistical nucleus to more external – and less frequent – radiations, but by employing organisational templates inferred from typological diachronic studies. In other words, the elements of a map are organised along a typological template, one of the grammaticalisation paths, which provides a diachronically based cohesion of the synchronic array of senses conveyed by a form that is being mapped. In this way, the synchronic map makes reference to this form's history, showing or hypothesising the way in which the polysemy has actually arisen.

Typological studies have discovered that languages are governed by evolutionary laws (or under less strong assumptions, tendencies), so-called grammaticalisation paths. These paths – which constitute idealised models of the most common evolutions of a gram belonging to a certain type – have been derived from and tested on a great number of languages. They are viewed as empirical facts that indicate how certain types of polysemies evolve. To be precise, they determine the exact order of senses that are gradually acquired by a class of grammatical forms and incorporated into these forms' semantic potentials. As a result, grammaticalisation paths stipulate the most plausible or most common developments that are typical of determined types of polysemies (Heine Claudi & Hünnemeyer 1991:221-222, 225-228, 260-261, Bybee, Perkins & Pagliuca 1994, Haspelmath 2003, Dahl 2000a, 2000b, Bybee 2010).

Since grammaticalisation paths represent – and predict – the most likely meaning extensions that are exemplary of certain grammatical categories, and since the chaining of a polysemous map is required to be not only conceptual but also diachronic, grammaticalisation clines are extensively used as templates for the linking of synchronic semantic potentials. In fact, being typologically universal or, at least, constituting highly likely tendencies, paths are nowadays regarded as one of the most plausible matrixes for the chaining of polysemous webs. Cognitive and grammaticalisation linguists usually represent

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<sup>32</sup> This class of maps is generally equivalent to maps plotted by means of the matrix-driven approach (Zwart, 2010). In these maps, the traditional distinction between synchrony and diachrony is blurred as synchrony is also dynamic. As defended by cognitive linguistics, "there is no sharp distinction between synchrony and diachrony" (Langacker 2011:79; cf. Hopper 1987:142; see also the concept of panchrony in Heine, Claudi & Hünnemeyer 1991:248-259 and Andrason 2010a, 2013a).

the polysemy of a grammatical entity as a portion of a path or as a collection of related paths, where each distinct sense offered synchronically by a concrete gram represents a stage on the abstract grammaticalisation cline with which this gram is modelled. It is assumed that the proposed mapping is not only typologically plausible (as it is based on a universal template) but also realistic – it aspires to represent how the components of the map of this specific form have actually expanded one from another (Heine, Claudi & Hünemeyer 1991:221-228, 260-261, Bybee, Perkins & Pagliuca 1994:15-19, Heine 1997:10, Haspelmath 2003, Tyler & Evans 2003:344-346, Sadler 2007:33, Ariel 2008, Bybee 2010:198-199, De Haan 2010 and van der Auwera & Gast 2011:186-188, Moravcsik 2013:249-252).

Although, as mentioned above, the mapping is not only typologically plausible but also true for the concrete diachronic evolution of the form under analysis, as long as it is exclusively based upon a synchronic array of uses and typological evolutionary scenarios – albeit it is fairly reliable and allows for quite solid predictions concerning genetic motivation and relations among senses (Heine 1997:10) – it remains a mere hypothesis. In order to be accepted as a scientific *fact*, the posited linkage of the components of a given semantic potential must be verified by certain proofs.

The most straightforward manner to validate a typologically posited mapping – and, thus, to demonstrate that the construction acquired the senses as has been hypothesised by employing typological universals – is to directly trace the grammatical development of the formation, from its “birth” to the point where it displays the analysed semantic potential. This should be consistent with the map in the way that the senses should have been incorporated in the order predicted by the grammaticalisation cline. In addition, as far as the shape of the entire map is concerned, it is expected that at earlier phases, the semantic potential of a form would correspond to less advanced sections of the path, while at posterior phases it would match its more advanced fragments. Simply speaking, earlier and posterior evolutionary stages of the formation should demonstrate that the construction has travelled a given cline to a lesser or greater extent, respectively.

Of course, the access to diachronic evidence differs among languages. In some cases, old texts in the language under analysis (and in cognate tongues) are abundant and enable linguists to empirically confirm the posited map. Nevertheless, in others, it is impossible to trace the diachronic progress of the form and observe how the construction has “built up” its semantic potential by having incorporated senses to the extent and in the order predicted by the path. Although an absolute lack of historical and/or comparative evidence is rather uncommon, there are various languages where direct diachronic proofs (i.e. older texts) do not exist. However, even in cases where diachronic evidence is relatively scarce, the mapping based on paths or diachronic universal patterns may still be corroborated. In such instances, it is the structural properties of the modelled construction that may confirm (or falsify) the hypothesised mapping.

Cognitive linguists generally agree that form and meaning are related. Grammar is understood as a literal or metaphorical conceptualisation of a person’s experience and, thus, the form of a given grammatical entity is necessarily connected to its meaning and function. Lexicon and so-called core grammar constitute an inseparable continuum where central grammatical elements regularly originate in semantically transparent and possibly iconic

lexemes and/or their compositions. Even more importantly, such input constructions are claimed to be semantically and functionally consistent with the entire evolutionary growth of a given form: they are cognitively plausible for this construction and its entire development at any stage of its history. Put simply, the form of the original periphrasis motivates all the senses conveyed by this construction during its entire grammatical life. Inversely, all the senses are by definition derivable from – or, at least, compatible with – the original input-form.

As a result, if the entire semantic potential is mapped as a path or a cluster of grammaticalisation trajectories, it should be reducible to the input which is cognitively compatible with the posited cline. This input must motivate the path and allow for all possible meaning extensions that have been detected synchronically. The form of the source is required to be harmonious and congruent with the posited path. Hence, given that structural properties – similar to semantic properties – are vestiges of the diachronic history of a gram, they may be employed in order to reconstruct the diachronic origin of that form and, thus, to posit the original input expression which will validate or falsify the proposed mapping. If the structure of the form is cognitively compatible with its path-mapping – the construction is supposed to have derived from an original expression which is fully compatible with the cline – the hypothesised mapping may be viewed as verified even if direct diachronic proofs are missing (for the relation between form and meaning, consult Heiman 1985a:1-7, 1985b:8, 18, 2011, Kirsner 1985:250, 253, Givón 1985:213-215, 2000, Bybee, Perkins & Pagliuca 1994:9-12, Croft & Cruse 2004:1-3, 255-256, Heine & Kuteva 2007:58, 348, Langacker 2007:421-422 and van Langendock 2007:396, 401-402).

Additionally, one may employ comparative evidence which is required to demonstrate that the mapping of cognate expressions in related languages makes use of the same – or similar – diachronic templates. However, such cognate constructions can profoundly vary in the sections of the cline they cover: some may correspond to initial stages, while others may match the ultimate stage (Andrason 2010a, 2011a, 2013a)

The above-explained approach of dynamic mapping bestows linguists with the possibility to preserve the contextual richness of a gram and at the same time to coherently represent its meaning, despite the fact that this construction may otherwise resist any consistent classification, in particular, lacking a straightforward definition by means of available taxonomical classes. That is to say, the model based upon grammaticalisation clines perfectly tolerates the situation where a gram provides various – even disparate and contradictory – senses and/or is used in contexts that are typical of more than one taxonomical class. Furthermore, as the model builds on synchronic variability, this representation preserves the empirical diversity of a form, enabling us to recover, relate and explain even the most microscopic levels of description. However, it also yields unified and homogenous label-like definitions of grammatical constructions in terms of (portions of) directional paths, or grammaticalisation vectors. In this way, it develops dynamic formulae, with which a given construction is concisely defined, making, hence, reference to the process-like nature and evolutionary capacity of a form – the semantic potential is represented as a kinetic vector of change. Thus, the definition tells us not only what the form is, but also where it comes from and where it is heading to. The kinetics or time-dependency

present in these definitions corresponds to an emergent property delivered by a non-resultant collaboration of all the micro-states (cf. Heine, Claudi & Hünemeyer 1991:225, 248, 251, 259, Nichols & Timberlake 1991, Heine 1997, Dahl 2000a:15-17, Bybee 2010, van der Auwera & Gast 2011:186-188, 281; for a detailed discussion of qualitative mapping, see Haspelmath 2003 and Andrason 2010a, 2010b, 2011a, 2011b, 2012a, 2013a; concerning the necessity of vectors in the synchronic description of languages, see Massip-Bonet 2013).

It should be noted that even though grammaticalisation paths and dynamic maps, which are based on them, represent the meaning and its expansion as a linear (or multi-linear) composition of a few separate components, this discrete-stage view is not realistic, but stems from the categorisation issue. Instead of being composed of discrete boxes or stages, and thus instead of adding new distinct senses in a sudden, disrupted or disconnected manner, any grammaticalisation trajectory constitutes a gradual and uninterrupted development through an infinite series of highly similar phases characterised by a minimal degree of meaning extension. Metaphorically speaking, if we imagine the grammaticalisation path as a link that connects colours that represent senses, the gram does not incorporate new values by “jumping” to a new discrete colour, but rather smoothly “moves along” the colour spectrum, only slightly modifying the gradient. Of course, at a more coarse-grained level of analysis, we can slice the trajectory into separated phases and group certain senses as belonging to a single class (see the seven stages *a*,  $x_1$ ,  $x_2$ ,  $x_3$ ,  $x_4$ ,  $x_5$ , *b* in Figure 1.4, below). However what really happens is the following: semantic extensions correspond to microscopic changes which modify the semantic range of a gram in a continuous, boundary-free and fuzzy manner with no drastic transformations from one discrete phase to another. Therefore, in certain instances it becomes quite difficult to precisely categorise a determined sense, as it may correspond to an intermediate zone. It is this fuzziness and mosaic evolution of larger coarse-grained senses through an overwhelmingly great number of microscopic modifications (almost unperceivable for speakers) that make the grammaticalisation process and change of macroscopic meaning possible (cf. Munné 2013:180-182; on the gradualness of meaning change, see Evans 2014:80, 87-88, on fuzzy effects of prototypicality, see Geeraerts 2010:188-189).

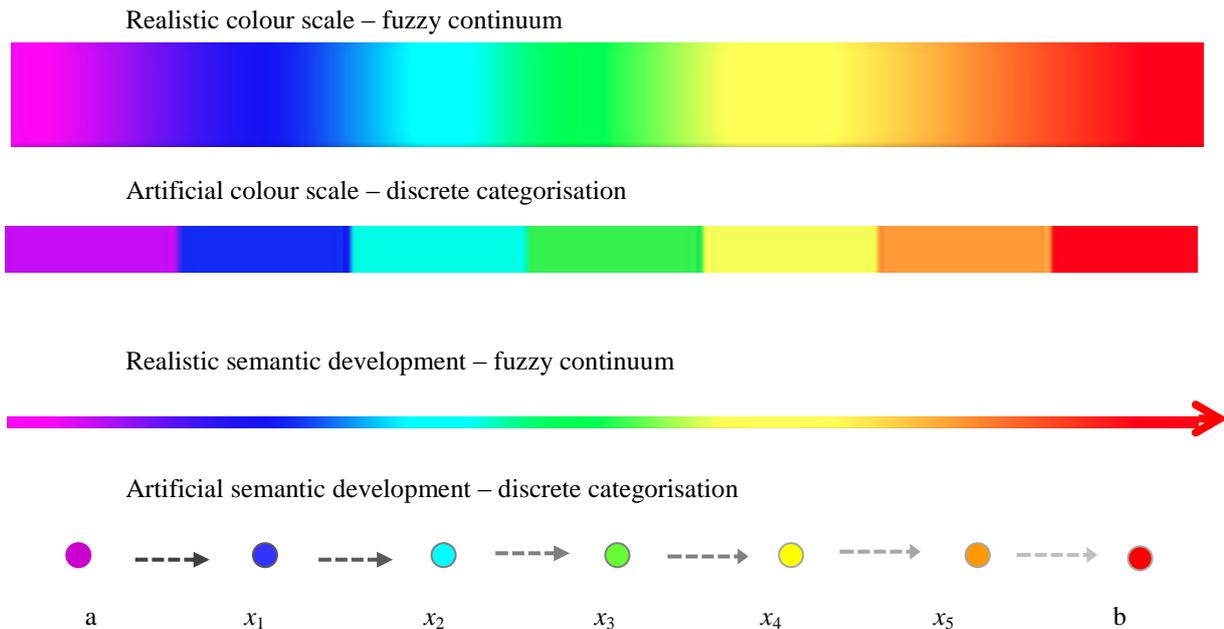


Figure 1.4: Semantic development – fuzziness and discreteness

This approach clearly indicates that the conceptual relation is mainly recoverable for adjacent senses of a polysemous set, whereas for extensive polysemies, this can only be achieved from a diachronic perspective by means of reiteration (see previously in this section). By using a variant of the colour continuum, viz. the black-white scale, in order to travel from the “whitish” sense *a* (the input) toward the “blackish” sense *b* (the final value available on the path), the gram must first go through the “blackish-to-whitish” spectrum of intermediate senses. Although there is not a direct conceptual relationship between black and white, one can easily see such a connection between grey and lighter grey. Thus, the entire movement along the path is possible because of the conceptual similarity of adjacent senses, represented in the figure as colour similarity. The conceptual relation between black and white is only recoverable in the path itself which represents the *n* reiteration of adjacent coherences (Andrason & Locatell forthcoming).

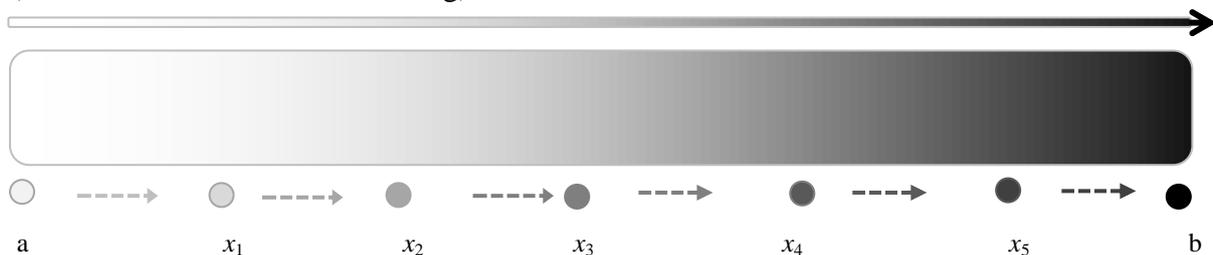


Figure 1.5: Conceptual gradient of senses

As the psychological maps and the dynamic maps constitute two distinct methodological and heuristic approaches to the mapping of meaning, they do not have to coincide. They may differ as far as their nucleuses are concerned given that the centre of a psychological map is usually inferred statistically, while that of a dynamic map typically reflects the component that is historically the most original. In fact, they can be dissimilar with respect to their entire

topologies, as the radiation of the psychological map is only conceptual, whereas that of the dynamic map is diachronic and conceptual (albeit only from a diachronic perspective; for a further comparison of these two types of maps and for a description of other mapping models, as well as of their relation, see Zwarts 2010 and Narrog & van der Auwera 2011).

The psychological mapping, which probably constitutes a more intuitive linkage of the components of the semantic grid of a form, can be viewed as being, to a great extent, subjective and on many occasions unverifiable or unfalsifiable. Another, already mentioned, weakness is its possible disconnection from diachrony and the actual manner in which the polysemous set has been built up. On the contrary, the dynamic mapping based on typological diachronic universals can be regarded as more secure: it is empirical, testable and easily accessible or repeatable, and thus, objective. Moreover, it not only reflects human cognitive mechanisms underlying meaning extensions, but also gives access into the realistic diachrony of the form, showing how such meaning extensions have actually occurred. In this way, this type of map preserves the dynamic character of language, portraying it as a metastable phenomenon – synchronic but inherently kinetic. Given these advantages of dynamically plotted maps, in this dissertation, this mapping procedure will be employed.

However, it is important to realise that traditional dynamic maps are not flawless. First, they are mainly qualitative as they build on the array of senses irrespective of their prototypicality or frequency. Inversely, dynamic maps usually fail to provide statistical information concerning the prototypicality of their components. As a result, they seem to treat all the components of a given semantic network as if they were equally important. Of course, scholars are aware of the fact that different components have a distinct weight in the map and contribute to it in a dissimilar manner, but the information concerning the prototypicality or frequency is not included in this model. Second, by ignoring the prototypicality issue and focusing on a diachronically based cognitive cohesion, dynamic maps are less likely to recover what the actual cognitive association of the form is and what its psychological reality may be. They give little insight into speaker perception (for a more detailed discussion of shortcomings of the two types of maps see Zwarts (2010)). This is especially evident for large polysemies whose maps may span an entire grammaticalisation trajectory (cf. Andrason & Lyle 2015 and forthcoming). The diachronic cohesion of this map usually fails to represent the speakers' association of the form since speakers are not (at least consciously) aware of grammaticalisation paths that regulate the expansion of polysemous sets (Givón 2000, Haspelmath 2003, 2004, Narrog & van der Auwera 2011:323-326).

It is evident that in order to be more representative and adequate, dynamic maps must include information concerning prototypicality. In the next section, an expanded prototypicality-sensitive model of maps based on grammaticalisation paths will be explained.

### 1.2.2.3 Meaning as a qualitative-quantitative dynamic map – a wave

The dynamic model of meaning presented above can be denominated as qualitative – it is a map that specifies the variety of senses conveyed by a form and orders them into a kinetic vector matching a grammaticalisation path. This qualitative representation of the semantic potential of a gram can additionally be enriched by data concerning the prototypicality of the

various senses, now depicted as stages on a path. In this manner, the network becomes quantitative: each sense is accompanied by the information that specifies its weight in the semantic potential of a gram. The necessity of including the information concerning prototypicality stems from the following well-known fact, which has already been mentioned in the previous section. Although a gram can convey a great variety of values, their weight and relevance for the macroscopic classification and/or analysis – as well as for the perception of the meaning of this form by the speakers – is not identical, but depends on the prototypicality with which such senses are conveyed. Frequent, semanticised and prototypical senses play a more crucial role in the total meaning of a gram than senses that are infrequent, pragmatically driven and non-prototypical.

According to cognitive and corpus linguistics, the most frequent senses are viewed as conceptual nuclei of the map, although not necessarily as their historical centres. This was already evident in the discussion on psychological maps. The most frequent senses are statistically the most probable. They are semanticised – or semantically stabilised – and likely correspond to the users' representation of the meaning of this form. In one word, they are the most prototypical. *De facto*, cognitive and corpus scholars agree that high frequency or statistical prototypicality is correlated with cognitive prototypicality understood as “the first-come-to-mind manifestations of abstract thoughts” (Gilquin 2006:180). In other words, the prototypical feature is cognitively the most salient item and this saliency can overtly be observed by the item's high frequency within a given corpus. On the contrary, less frequent features or behaviours are not viewed as prototypical or stabilised. Since they are uncommon or even exceptional, they fail to contribute to the user's representation of a form (for details, see Gries & Stefanowitsch 2006, Gries 2006, 2010, Gilquin 2006, Glyn 2010:14-15, Fischer 2010, Gries & Divjak 2010: 338-339; compare also Langacker 1987: 59-60 and Evans 2004).<sup>33</sup>

This frequency-based prototypicality likewise implies that the classification of an entity as a member of a taxonomical class – and the degree of this inclusion – depends not only on the extent of the conditions fulfilled by this item, but also on the intensity (commonness/frequency) with which this fulfilment takes place. To be classified as a prototypical member of a taxonomical type – for example, to be classified as a perfect, a perfective or a past – the comportment of an individual must frequently agree with the prototype posited for this class (cf. Geeraerts 1988:221-222, Stubb 2004 and Gilquin 2006:159). A gram is an ideal present perfect if it is always used as a present perfect, the present perfect value being conveyed on 100% of its occurrences. Similarly, it is an exemplary perfective aspect if it is at all times found in the function of a perfective aspect.

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<sup>33</sup> Of course, frequency and its relation to prototypicality and/or saliency are complex phenomena; consider, for instance, the problem of corpus representativity (i.e. whether any corpus can be viewed as representative), the context-specific frequency pattern (i.e. each corpus can exhibit different frequency distribution), the overall frequency of a context (e.g. some senses can be fully semanticised although they are rare because contexts in which they appear are *per se* uncommon) or the domain-specific frequency pattern (i.e. the distributional pattern of grams expressing a certain domain; in other words, the study of how a given semantic domain is expressed in the language). However, even crude (global) frequency usually gives a good picture of the prototypicality/saliency of a feature. For a more thorough discussion of the complex nature of frequency in cognitive semantics refer to Glyn (2010), Gries & Divjak (2010, 2012) and Glyn & Fischer (2010; see also section 7.2.3).

The same holds for its definition as a past tense or any other grammatical category. The problem is, however, that – as is evident from the commonness of the polysemy of grams – reality seems to be much less strict. In effect, the fulfilment of the ideal condition of 100% of the cases classifiable as complying with the hypothesised prototype and, hence, the description of realistic phenomena, including grammatical ones, in terms of binary completion [+/-] are usually impossible. The universe – physical and linguistic – is inherently fuzzy and intermediate stages of mixed properties are more frequent than phases of absolute taxonomical distinctiveness and uniformity.

In order to explain the relevance of fuzziness in grammar, I will return for a while to the process of grammaticalisation. Traditional grammaticalisation clines, such as those proposed by Bybee, Perkins & Pagliuca (1994), link stages in such a way that each stage reflects a distinct taxonomical type, giving the impression that (a) grams jump from one stage to another; (b) they acquire a new sense, which is clearly distinct from the previous one (as it constitutes a new conceptual box), in an equally abrupt manner; and (c) once they have acquired certain stages on the path, constructions convey the senses corresponding to these phases with equal intensity.

The real state of affairs is, however, different. First, grammaticalisation paths do not imply a drastic transformation from one stage to another in the sense that when the posterior stage is acquired, the previous one is necessarily abandoned. Grams typically accumulate values that reflect subsequent stages of grammaticalisation so that they can span a large section of the path. Second, the incorporation of a new sense constitutes a gradual process of approximating to the targeted semantic prototype through a continuum of intermediate values. By being similar to both the input class *a* (the original sense distinguished on the path) and the output class *b* (the posterior sense distinguished on the path), these values provide a conceptual link that connects both prototypes. As explained in section 1.2.2.2, the ultimate number of such intermediate senses is extreme, if not infinite. Third, the acquisition of new developmental stages and, thus, new senses is always statistically (or numerically) gradual and the entire process corresponds to a progressive modification in the prototypicality of an item (cf. Bybee, Perkins & Pagliuca 1994:8, 17-19, Andrason 2011a:18, 49-50, 2011b:50, 2012b:52, 2013a:355-256). To conclude, the realistic grammaticalisation process – or a realistic evolution of grams – involves a continuum of phases in which various senses (which can be divided into larger discrete classes and which correspond to subsequent stages on abstract grammaticalisation paths) intervene with different degrees of prototypicality. Some senses (stages on the path) are frequent, semanticised and prototypical, while others are infrequent, mainly pragmatic and non-prototypical. What happens over time, is that both the composition of the polysemy (the types of senses) and its overall prototypicality (the frequency of each sense) will change.

Grammaticalisation is strongly correlated with the intensification of prototypicality in the way that less grammaticalised senses of a formation are less semanticised and less prototypical, while fully grammaticalised values are more semanticised and prototypical (Bybee, Perkins & Pagliuca 1994:8-23, Dahl 2000a, 2000b, Hopper & Traugott 2003:126,

129, 172-174, Ariel 2008:142, Bybee 2010:171-172, 193).<sup>34</sup> Since grammaticalisation operates through gradually amplified automatised and the progress of grammaticalisation is generally accompanied by the increased frequency of a feature, grammaticalisation is profoundly related to statistics. However, given that, just like in mathematics, the increase in prototypicality or frequency can range from 0% to 100% with any intermediate transitional stages, grammaticalisation is infinitely gradual and, hence, fuzzy. Since the degree of prototypicality is related to the extent of resemblance to the prototype, the array of this compatibility can also theoretically range from a total match (100% of resemblance) to null similarity (0% of resemblance) – as mentioned, the absolute match with a prototypical stage constitutes, uniquely, one possibility among an infinite number of others.

Even though the ideal cores of prototypicality – i.e. the two states that correspond to the two poles of a continuum ranging, for instance, from a perfect (more original stage of grammaticalisation) to a past (more advanced stage on the cline; see section, 1.2.3.1) – are relevant for the determination of the cline and may arguably be found crosslinguistically (there may be entities that fulfil the absolute degree of prototypicality for a present perfect or a past tense), intermediate phases seem to be more common. What is important is that the transition between the two prototypicality poles and between all the intermediate states is always fuzzy. This implies that taxonomical classes (linguistic categories included) cannot be defined with rigid boundaries of Boolean terms of belonging or non-belonging. Such an attempt of categorisation corresponds to an excessively abstract and naive theoretical simplification. In fuzzy terms, the relation of belonging to a class should rather be comprehended as gradually approaching the prototypical attractor (Wittgenstein 1972, Ross 1973, Labov 1973, Rosch & Mervis 1975:575, Jackendoff 1983, Hopper & Thomson 1984, Lakoff 1987, Taylor 1989, Heine, Claudi & Hünnemeyer 1991:227, Langacker 1987, 1991:266, 2006, 2008:8, Aarts et al. 2004, Cruse 2004:130-132, Riemer 2010, Munné 2013).

It is important to emphasise that such intermediate stages are typical to nature, while the phases of a total compliance with a prototype constitute some exceptional instances. Indeed, fuzziness is an archetypal qualitative aspect of real-world complex systems and stems from the fact that all the sub-systems of the realistic universe are infinitely open and are not comprised within sharp discrete boundaries. If the continuum of prototypicality is acknowledged, it is virtually impossible to determine a precise and non-arbitrary line which would distinguish objects belonging to a class (viewed as compatible with the prototype of this class) from those belonging to another class (that represents a subsequent stage on the grammaticalisation path). This borderline is always arbitrary and will depend on the explainer and his model. In the realistic universe, the transition is smooth and borderless (Zadeh 1973, Dimitrov 2002:10-12, 15, 18-19, Dimitrov & Hodge 2002:37, Munné 2013:181, Mufwene 2013, Massip-Bonet 2013).

The fuzziness viewed as a gradual approximation to an archetype – in terms of frequency and numerical prototypicality, i.e. from 0% to 100% – eliminates any categorical

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<sup>34</sup> However, one should also note that values that have previously been grammaticalised and/or were originally common may, at posterior periods, again become uncommon and lost. This reflects the grammaticalisation process, which goes not only from non-grammaticalised (peripheral) to grammaticalised (central), but also from grammaticalised (central) to a loss (peripheral).

boundary between pragmatics and semantics. In this representation, pragmatics and semantics are not radically divided into two discrete black and white boxes (cf. Riemer 2010:22, 89, 129-130, Geeraerts 2010:182, 222, Langacker 2011:79, 81, Broccias 2013:193; see also Hopper 1982, Langacker 2005 and 2009). They rather constitute two poles of a gradient, in which darker sections of the continuum represent more entrenched semantic values whereas the lighter fragment represents senses driven pragmatically. The more frequent, entrenched and prototypical a sense is the more semantic(ised) it is. The less frequent, entrenched and prototypical it is, the more pragmatic it is. However, the precise and sharp boundary where a certain sense is conventionalised to the degree that it can be regarded as semanticised cannot be posited, and thus the exact place of the line separating pragmatics and semantics cannot be determined. Any such demarcation will be arbitrary and artificial. Certainly, the opposite poles that correspond to the ideally pragmatic ( $x$  is found uniquely in one case or in 0.000000...1%) or semantic ( $x$  is found in all the cases or in 100%) nature of a feature are important – at least for designing the continuum itself. However, realistic situations regularly fail to comply with such ideal archetypes. What does exist in languages of the world are the intermediate situations where a feature is expressed, semanticised and prototypical to a certain degree, being located somewhere on a lighter or darker section of the gradient (cf. Figure 1.6; on the relation and distinction between semantics and pragmatics from the perspective of cognitive linguistics, see Ariel 2012 and Börjesson 2014).



Figure 1.6: Fuzziness – pragmatics-semantics continuum

The dynamic model of verbal semantics based on grammaticalisation paths – where the meaning of a form is defined as a kinetic vector comparable with a portion of a cline – is highly suitable for the fuzzification of meaning. The path model gives us the opportunity to account for any distribution of prototypicality of the senses and, thus, of the components of the semantic map, without introducing artificial boundaries and rigid limits. It can account for all fuzzy transition phases or objects that can be viewed as conceptually located between two ideal poles of a total belonging (all the conditions are always fulfilled) and non-belonging (no condition is ever fulfilled).

In this model, the meaning of a grammatical construction approached in its totality can be portrayed as a bi-dimensional phenomenon. Its shape is mainly determined by the horizontal  $x$ -axis – a grammaticalisation cline (or a cluster of clines) with which the components of the semantic potential of a form are linked (cf. senses *a, b, c, d, e, f* and *g* or the horizontal colour spectrum in Figure 1.7 below). This  $x$ -axis overlaps with the qualitative

mapping discussed in section 1.2.2.2. However, as the parameter of prototypicality is introduced, each uni-dimensional path can be vertically “lifted” at the stages which correspond to more prototypical senses (for example, the senses *d*, *e* and *f* in Figure 1.7). In this representation, the more lifted a given portion of the path is, the more frequent, semanticised and prototypical the sense associated with this place on the grammaticalisation-based horizontal *x*-axis becomes, and thus the more easily speakers can associate it with the form. Less common values will remain less vertically risen and will be perceived by speakers as exceptions that are pragmatically driven and/or restricted to special contexts<sup>35</sup> – inversely, they will not be semanticised or easily associated with the form. Given the numerical foundation of frequency, entrenchment, semanticisation and prototypicality (i.e. from 0% to 100% through an infinite number of intermediate values), the relation between an entrenched and non-entrenched sense, semantic(ised) and pragmatic, and/or prototypical and non-prototypical is gradual, forming a borderless, uninterrupted, fuzzy continuum (see the vertical black-white colour spectrum in Figure 1.7, below).

To summarise, by using the qualitative and quantitative information, the meaning of a gram can be depicted as a wave: the horizontal axis indicates the range of the meaning (i.e. the set of senses that are expressed by the gram organised along the grammaticalisation path) while the vertical axis represents prototypicality (i.e. it specifies which senses are common and semanticised which are rare and more pragmatic).

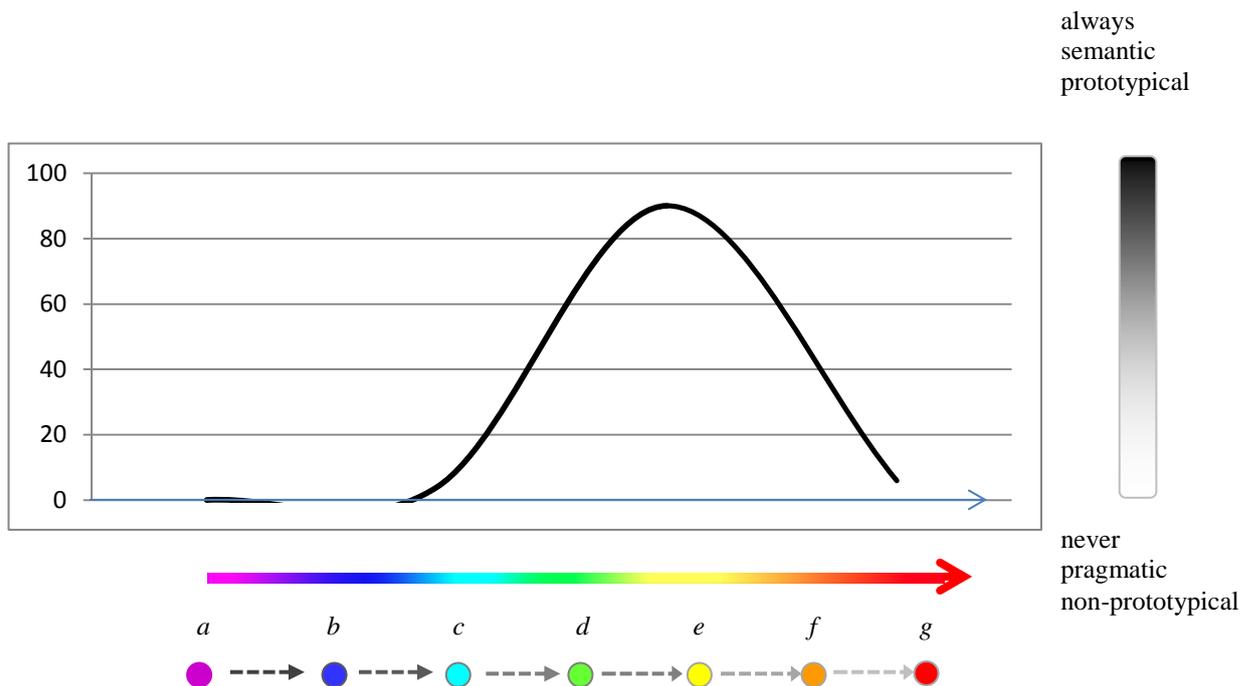


Figure 1.7: Wave model of verbal meaning

If the wave model is employed to study the development of a gram, this will consist of qualitative and quantitative modifications of the map. The former involves the changes in the

<sup>35</sup> It should, however, be remembered that all senses are contextual.

extent of the path with which a given polysemy can be matched, whereas the latter concerns the changes of the prototypicality of senses corresponding to the stages of the cline. As the formation evolves diachronically, it qualitatively spans more advanced sections of the *x*-axis (it travels the path by incorporating new senses) and gradually moves the prototypicality peak to more advanced regions as well.

The introduction of information concerning prototypicality to the semantic definition of a form – and, thus, the formulation of quantitative maps, in addition to the qualitative ones – as well as the recognition of the crucial role of frequency in the process of grammaticalisation, have another highly important effect on the analysis of verbal meaning. That is, the idea of prototypicality and its gradualness directly defies the structuralist dogma of complementary distribution. Rather than being complementary with respect to function or meaning, grammatical entities usually overlap functionally and semantically – they share the *x*-axis. The difference between them does not necessarily concern their qualities, but rather the prototypicality with which these qualities are materialised. As a result, it is the statistical or prototypicality-based, and not the complementary distribution, that plays the central role in moulding grammar (for similar views, see Langacker 1987, Hopper & Traugott 2003:35, 130, Cruse 2004:150, Ariel 2008:114-115, 142, 148, Bybee 2010).

Just like the uni-dimensional qualitative model of a vectored semantic potential, the bi-dimensional model of a wave accounts for the entire semantic diversity of the gram on the one hand, and its fuzziness on the other. However, it does so even better because it captures a twofold degree of fuzziness, as gradualness concerns both meaning extensions (the *x*-axis) and their prototypicalities (the *y*-axis). The information concerning fuzziness is overtly preserved in the model by means of the smoothed clines with which waves are depicted. The smoothed uninterrupted horizontal expansion of the cline makes reference to the qualitative fuzziness of semantic categories, illustrated by the colour spectrum in Figure 1.7 (cf. section 1.2.2.2). The smoothed uninterrupted vertical ascension or descent refers to an infinitely gradual variation in prototypicality that may range from 0% to 100% through an endless spectrum of intermediate values, represented by the vertical black-white spectrum in the same figure.

Moreover, the wave representation offers other advantages that were already present in the more traditional model of vectored semantic potentials described in section 1.2.2.2. Although it builds on empirical diversity and heterogeneity, it develops definitions that are simple and scientifically manageable, without introducing arbitrary dichotomies and rigid unnatural boundaries (compare the same idea in Munné 2013). Such classifications are still coherent, explanatory and predictive. They are far from being mere taxonomies or collections of micro-data. On the contrary, they depict the form at a more global level as a geometric – at least bi-dimensional – object with well-determined topological properties that enable us to relate it to other formations and/or distinguish it from them (cf. next section 1.2.2.4). In addition, instead of static definitions, one formulates classifications that are dynamic, as the qualitative extent of the meaning (represented by the *x*-axis) is in fact equivalent to a kinetic vector organised by means of an evolutionary, both universal and realistic, template.<sup>36</sup>

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<sup>36</sup> The wave representation is thus compatible with complexity theory: the model of the gram's meaning is complex (it incorporates an infinite number of specific senses available on concrete occasions at the micro-

#### 1.2.2.4 Situating a qualitative-quantitative dynamic map – a stream

Although quantitatively enhanced semantic maps are much more adequate than their purely qualitative counterparts, such representations also exhibit certain limitations. In particular, a form that is represented by means of a wave is studied in isolation from the language in which it exists and in which it has been developing. The meaning of a construction and its model are derived from the form's intrinsic properties and behaviour: the array of senses expressed on concrete occasions and the frequency or prototypicality of these senses. The item that is being modelled is represented as independent from the language system as such, and disconnected from the remaining components of this system, especially from other forms portrayed as maps. It seems as if the mapped construction exists autonomously in a type of a grammatical vacuum. The information concerning the environment in which the form is embedded is entirely missing. This constitutes, of course, an important simplification of the real-world state of affairs.

Scholars – especially cognitive and grammaticalisation linguists – are certainly aware of the fact that the evolution of a gram and, thus, the expansion of its semantic potential and structure of a semantic map are deeply conditioned by this gram's interaction with the system in which it has been developing. Thus, the growth of a form and its map are not only determined by the properties included in the input formation from which a gram has emerged and which predicts, to a degree, its possible grammaticalisation path. Paths are also bound by context, being invariably conditioned by the dynamics of the embedding environment in addition to their own dynamics (Bybee, Perkins & Pagliuca 1994, Hopper & Traugott 2003). As a result, the mapping technique should make reference to the relational property of meanings and show how a map, in wholeness, relates to other maps and the entire system as such. In this section, I will explain how the isolation of dynamic maps can be overcome and such maps represented as situated phenomena. This will in turn demonstrate that the benefits of a wave model can be expanded to more macroscopic and holistic levels of analysis.

First of all, it should be noted that, due to its complexity, the approach explained in section 1.2.2.3 renders the interaction between even two components of the system extremely intricate and the nature of their mutual similarities and dissimilarities profoundly sophisticated. From a macroscopic perspective, as far as two components of the entire verbal system are concerned, their comparison first involves the contrast of their qualitative maps. This means that the horizontal geometric shapes of various grams may be compared and their correspondence, overlapping or divergence established. The maps can be different if they follow different evolutionary templates that traverse different semantic domains or that lead across similar domains but in a distinct manner and/or order. In the latter case, even though the semantic potentials of two grams are similar, their maps are topologically distinct. If the

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level), metastable (although, from a more global perspective, a gram may be viewed as a static individual or a topologically stable map, it constitutes, in fact, a process of an acquisition of new senses which appear in new contexts), organisationally intricate with access to micro- and macro-levels of analysis (it accounts for individual micro-senses and for the global all-inclusive macro-meaning) and emergent (the model develops new exotic properties at higher levels unperceivable in the micro-analysis, such as vector of time or path organisation; for details see section 7.3).

meanings of two formations are organised along the same grammaticalisation cline, their maps can be similar. This occurs in cases where the maps of two or more forms overlap, either entirely or partially. Nevertheless, even when following the same path, the maps can be distinct if they span completely different sections of the cline. Furthermore, if grams happen to follow identical grammaticalisation paths and also occupy – at least relatively – similar sections of the cline, their maps may be compared on the vertical axis of prototypicality. In such cases, the comparison of the maps involves quantitative aspects.

As geometric models of verbal formations are complex (they are at least bi-dimensional involving two different axes: horizontal path-axis or vertical prototypicality-axis) and intricate (each path may consist of more specific clines and each stage may be deconstructed into more fragmentary stages), the commensurability between two or more constructions involves a great number of features and parameters. The geometric spaces that model the meaning of grams are distinguishable, at least, by three meta-features: (i) different shapes due to different horizontal qualitative  $x$  clines along which they are organised; (ii) different advancement on identical horizontal qualitative  $x$  clines in case they develop along the same paths; (iii) different degrees of prototypicality represented by the vertical qualitative cline  $y$  if they are organised along an identical cline and span its similar or distinct regions. In addition, grams can exhibit distinct ranges of prototypicality with similar semantic domains which have been developed following different paths and thus dissimilar  $x$ -axes.

As a result, the determination of the systemic interaction between even two grams seems to be highly difficult and obscure. However, a more straightforward relationship between grammatical constructions can be recovered if one employs and further expands the wave model.

I have previously explained that grams can be modelled as topologies organised along two axes: one corresponds to the grammaticalisation path (the  $x$ -axis) with its consecutive sense-stages and the other provides information concerning prototypicality (the  $y$ -axis). If all the sub-paths and microscopic sub-developments are ignored, and we inversely focus on higher-level robust features, various grams can appear as sharing their  $x$ -axis. This overlap may be complete or partial. If we now imagine that the  $x$ -axis represents not the gram specific development, but a grammaticalisation channel recursively activated in a language – labelled as a ‘stream’ – two grams can be located on the same  $x$ -axis and their topologies compared.<sup>37</sup> The notion of a stream even enables us to compare waves that fail to exhibit any topological intersection and, thus, grams that do not overlap semantically by any degree. Accordingly, the introduction of the concept of a stream implies that grams whose semantic potentials – similar or dissimilar, and generated by completely different input expressions – arose by following the same (typologically, speaking) path can be commensurate and modelled as representing different states of an equivalent, but more universal and abstract, grammaticalisation scenario. Simply speaking, they can be located on different sections of this higher level template which, however, just like their own  $x$ -axes, makes use of a grammaticalisation path. One should emphasise that while for a wave the  $x$ -axis represents a concrete grammatical development (in most instances consistent with diachronic universals),

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<sup>37</sup> On the metaphor of a stream as a dynamic conceptualisation of grammatical structures in complexity linguistics, see Bastardas-Boada (2013b:161).

in the stream, the  $x$ -axis represents a more general and abstract rule that accommodates various specific and realistic evolutions.

Thus, semantic potentials found in a language, portrayed as waves organised by means of the same dynamic template, can be imagined as recursive waves on the stream, a grammaticalisation conduit typical to this language. The differences between the waves of grams on a stream reflect their respective, topologically distinct advancement on the cline, both in qualitative (the  $x$ -axis) and quantitative (the  $y$ -axis) terms. Some cover advanced sections of the stream and/or locate their prototypicality peaks in such regions, while others correspond to non-advanced segments and/or their prototypicality peaks match such zones (compare gram  $\alpha$  with gram  $\beta$  in Figure 1.8, below). To put it simply, each wave occupies a different section of the stream, with respect to its topology or prototypicality, or both.

The wave model, discussed in section 1.2.2.3, implies that during its grammatical life, a construction travels on its evolutionary path modifying its relation to the  $x$ -axis (semantic potential) and the  $y$ -axis (prototypicality of the senses). Both the order of the values available along the  $x$ -axis and the order of the peaks of prototypicality are strictly ordered and can be acquired in the way predicted by the grammaticalisation template. Simply speaking, the wave and its prototypicality peak gradually move to more advanced sections of the  $x$ -axis. By applying this to the stream-representation, the following can be postulated. Younger waves (i.e. more recent ones) have been traveling along the stream for a shorter period of time and, thus, locate their prototypicality peaks or entire topologies in more original sections of this evolutionary channel (this situation would correspond to gram  $\beta$  in Figure 1.8, below). On the contrary, older waves (i.e. historically earlier) are more developed, since they have been propagating on the stream for a longer time. They will hence exhibit their peaks of prototypicality and whole topologies in more advanced sections of the stream (cf. gram  $\alpha$  in Figure 1.8; Andrason & Visser forthcoming, Andrason forthcoming (a) and (b)).

In this manner, the stream model maintains a dynamic character of grammatical entities: waves are compared in kinetic terms of topological advancement and historical age (or sequence). The introduction of the concept of a stream makes the comparison of formations developing along similar grammaticalisation paths relatively easy and renders the great intricacy of their dynamic maps fully manageable.

Furthermore, by introducing the notion of a stream, a wave ceases to be an isolated phenomenon. On the contrary, it becomes situated, as it is always accompanied by other waves. The wave becomes a wave within a context. It may be preceded (and, thus, hindered) by an older, more advanced, wave and it can be followed (and, hence, pressed) by a younger, less advanced, wave. The travel-ness is now conditioned not only by the wave's own dynamics but also by the dynamics of the other waves on the stream. The relative position of a wave on the stream and its relation to the other waves, in turn, enables one to determine certain features of the meaning of a form that are conditioned by the environment. In this manner, the meaning ceases to be an entirely internal phenomenon, which uniquely depends on the atomic properties of the gram, viz. senses and their frequency or prototypicality, disconnected from the other components of the system in which this gram exists. In other words, the meaning is conditioned not only by the structure of a wave, but is also dictated by the interaction of the gram's wave with the other grams traveling along a shared stream. At

this moment, both the peak of prototypicality of a map and its uniqueness on the stream are relevant.

Arguably, a gram is grammaticalised as the expression of a given semantic domain (available on the path) if this domain is prototypical in its internal semantic potential (it constitutes the wave's peak) and/or if the gram's peak surpasses the waves of the other grams at the stage of the stream representing this semantic domain (inversely, if the internal prototypicalities of the other maps are lower). Figure 1.8 can be used as an illustration of this phenomenon. Given the relative position of formations present on the stream, gram  $\beta$  would be prototypically associated with senses  $b$  and  $c$  (and possibly also  $a$ ), while gram  $\alpha$  would be a prototypical expression of senses  $d$  and  $e$  (and possibly  $f$ , as well). This happens even though, on the one hand, senses  $d$  and  $e$  (especially the former) are relatively important in the semantic potential of gram  $\beta$ , and on the other hand, the sense  $a$  is paradoxically not. However, the fact that gram  $\alpha$  greatly surpasses the wave of gram  $f$  in stages  $d$ ,  $e$  and  $f$ , together with the fact that in stages  $a$ ,  $b$  and  $c$ , it is the gram  $\beta$  whose peak is the highest, jointly minimise the relevance of the stages  $d$ ,  $e$  and  $f$  on the one hand, and emphasise the importance of senses  $a$ ,  $b$  and  $c$  for gram  $\beta$ , on the other (for examples of this phenomenon in Semitic languages see Andrason forthcoming (a) and (b)).

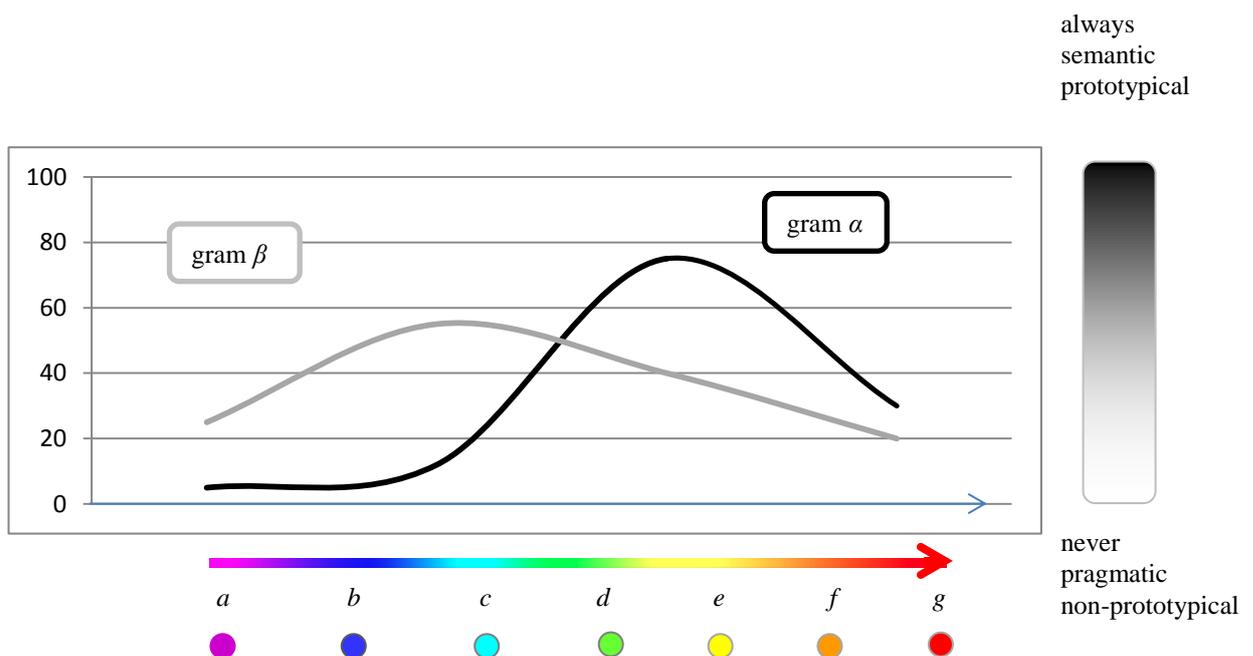


Figure 1.8: Stream of two waves

Consequently, the model of verbal semantics in terms of a wave situated on a stream demonstrates that important properties of a gram stem not only from its inner properties but also from the relation it establishes with other components of the system. In a way, relations that are usually viewed as exogenous become interiorised as the gram's endogenous characteristics. As a result, a more comprehensive type of the gram's prototypicality can be viewed as a product of its own prototypicality and the prototypicality of the other waves of

the stream. This type of prototypicality can be referred to as product prototypicality (Andrason & Visser forthcoming, Andrason forthcoming (a) and (b)).

#### 1.2.2.5 Ocean

The advantages of the dynamic analysis in terms of vectors, waves and streams do not cease at the level of the description of situated individual grams, as was presented in the previous section. It can further be expanded to more macroscopic levels. At this moment, streams can be viewed as individuals – sometimes, referred to as currents (Andrason forthcoming (a) and (c)) – bestowed with their own higher-level emergent characteristics and the entire system modularised into dynamic sub-parts. Inversely, the most systemic view is achieved by combining the streams conceived as individuals into an emergent object – the all-encompassing ocean. Accordingly, the entire verbal system is portrayed as a dynamic, self-organising body composed of a number of individualised streams, each containing its own waves. As individual waves propagate in the stream, the individualised streams disperse in the ocean.

As explained in sections 1.2.2.2-4, dynamics underlie the model, being present at all its levels and in all its manifestations, i.e. when the gram is represented as a vector, a wave or a wave on a stream. This is necessary because all these representations derive from grammaticalisation paths, gradually building into more complex entities. A concrete grammaticalisation cline appears as the vector of senses in the uni-dimensional map and next as the qualitative  $x$ -axis in the bi-dimensional wave. Subsequently, albeit in a more abstract form, it is used to represent the horizontal, relatively invariant structure of the stream on which different waves propagate.

These dynamics are also visible if a stream is approached as an individual. That is to say, when individualised, a stream can be viewed as a developing wave itself, a wave whose semantic values indicated by the  $x$ -axis are correlated with prototypicality measurements of the  $y$ -axis. Although the horizontal  $x$ -axis of the individualised stream is relatively constant – as it codifies a long-term evolutionary mechanism repeatedly activated in the language – the values of the  $y$ -axis are changeable. However, they fluctuate in a cyclical manner as older waves move further on the path and newer ones emerge.

This means that individualised streams enable us to modularise the language into sub-systems – which is necessary in order to treat a verbal organisation globally – in an explicitly dynamic manner. Rather than being static, such modules are inherently kinetic, as they refer to the most productive evolutionary patterns in the language. In addition, as was the case with waves, the structure of any module is characteristically fuzzy and trans-categorical (in traditional terms) because a single, individualised stream makes use of various domains available on the grammaticalisation path in any possible proportion. These domains are not only different but belong to distinct meta-categories such as tense, taxis, aspect and mood. In fact, the modules – which enable us to access global truths by slicing the system into parts – must be dynamic and fuzzy because their components (maps portrayed as vectors or waves) are dynamic and fuzzy themselves.

Individualised streams constitute modules that transcend traditional classifications by means of static, rigid terms, such as a taxis sub-system, an aspectual sub-system, a temporal sub-system and a modal sub-system. Instead of forming artificial static and neat parts of the verbal system – which are commonly employed in linguistic studies – realistic modules of language portrayed as streams go across various semantic domains by a multitude of intermediate domains.

Furthermore, although for transparency's sake a given verbal system can be pictured as a semantic surface cut up by independent individualised streams and analysable into relatively autonomous (yet dynamic and fuzzy) modules, it is important to emphasise that streams interact with one another. They interact because they may lead to identical or highly similar semantic domains, thus sharing the topology of the semantic surface of the language.<sup>38</sup> In general, individualised streams are themselves situated phenomena – their topology is conditioned not only by the properties of their components, but also by the environment in which they are embedded (Andrason forthcoming (a), (b) and (c)).

The understanding of verbal systems in the manner presented in this section has another important implication. Languages may not be classifiable as tense, aspect or mood languages, exclusively. A language rather constitutes a system for which the four meta-categories of taxis, aspect, tense and mood are relevant in proportion to the undulations of the individualised streams. Indeed, from an evolutionary perspective, it would be strange if a language would be an ideal tense or aspect or mood language, because if the streams' prototypicalities were limited to one of these meta-domains, too much of the ocean's surface available along the grammaticalisation paths would be left uninhabited. Grams expand in a wave-like manner, chasing each other along the path. They interact with other waves of the stream as well as with other waves in the system (cf. Dahl 2000a:13-14). A possible polarisation of the system into a temporal, aspectual or modal system, if it exists, constitutes a by-product of grammaticalisation and derives from the relative position of grams on their path. However, due to the multidimensionality of the grammaticalisation process and the inherent polysemy of grams, such a polarisation (and the creation of an exclusive temporal, aspectual or modal contrast between two or more constructions) is extremely rare. On the contrary – and due to the fact that grammaticalisation clines do not form dichotomies – the verbal systems of languages are compositions of more than one meta-domain. The exact structure of the currents is different in different languages, but in most of them, it makes use of two or more meta-domains. Consequently, languages do not display a system of contrasts built in accordance with the principles of economy and symmetry. The structuralist or modernistic claims whereby “each language represents a tidy system in which units are defined by the oppositions they enter into and the object of study is the internal system the units are supposed to create” are untenable (cf. Dahl 2000a and Andrason 2011a, 2012a).

It should be noted that waves situated in and embedded by distinct streams can also exert trans-stream interactions with each other. Such relations commonly occur, for instance, if waves that belong to different streams traverse similar semantic domains, or if the morphosyntactic shapes of the grams symbolised by distinct waves are similar (i.e. if

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<sup>38</sup> As will be evident from the discussion in section 1.2.3, various grammaticalisation paths overlap and/or head to a common final attractor.

genetically different constructions are phonologically, morphologically or syntactically alike; cf. Andrason forthcoming (a) and (b)). This means that the environment of a gram and its wave is expanded beyond the limits of its own stream, also including the global situation in the system and the properties of other streams and their waves. Therefore, verbal systems can be imagined as systems where everything interacts with anything else within those systems. Of course, some interactions are more crucial for a given object, whereas others are only marginal. For example, for a given wave, the interaction with its immediate neighbour (another wave on a shared stream) is more relevant than the relationship with the wave that belongs to a different stream and traverses entirely different semantic domains. However, all the components of the ocean – from the most microscopic to the most macroscopic – somehow affect the remaining ones. The verbal ocean is an organism where everything exerts some sort of impact on the remaining parts of the system, being at the same time inversely influenced by the system in its totality and by all its components individually (Andrason forthcoming (b)). It is a holistic dynamic fluctuating and interconnected field (Bastardas-Boada 2013b:157). (The examples of individualised streams, the construction of a holistic ocean, and a more detailed discussion of emergent properties developed at the systemic level of analysis will all be provided in the concluding part of this dissertation, i.e. chapter 7).

### 1.2.3 Grammaticalisation paths

Since grammaticalisation paths are crucial for mapping – both qualitative and quantitative (vectors and/or waves) – and, thus, for the organisation of streams and the entire ocean, they must be carefully explained. In this section, I will present the major evolutionary templates discovered empirically by linguists (imperfective path, resultative path, modal path, future path and modal contamination path) with their principal sub-developments and branches.

It should be noted that in the standard model of paths (e.g. Bybee, Perkins & Pagliuca 1994), the consecutive evolutionary stages frequently represent gram types with different semantic-functional properties. By using this procedure, one gets the impression that constructions develop by transmuting or “jumping” from one phase to another. This is, in fact, the language Bybee, Perkins & Pagliuca (1994) commonly use, arguing that a gram *x* develops into *y*. Real-world grammatical formations however do not “jump” from one stage to another. On the contrary, they rather amass meanings that correspond to sections of a given evolutionary cline, being able to preserve the meanings acquired previously (which are located at a less advanced portion of the cline) or span even the entire length of a trajectory.<sup>39</sup> As explained in section 1.2.2 above, grams develop by modifying their semantic potentials, which means that they either extend or limit the range of their compatibility within certain contexts. Consequently, instead of saying that a grammatical item develops and moves from category *x* into category *y*, the standard model should be reinterpreted as the codification of a gradual and ordered incorporation of new senses (symbolised by stages) prototypical of formations that originate in certain inputs. Accordingly, each stage makes reference to a new semantic value that can be acquired by the gram and introduced as a new component to its semantic potential.

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<sup>39</sup> This accumulation of stages (which represent meanings) is referred to as a ‘state’.

This means that (at least) three distinctions should be made: a semantic domain (an abstract semantic category with which a sense [the information that is conveyed by a grammatical form] is being “measured” or matched), a prototypical grammatical category (an idealised linguistic prototype) and a realistic gram that by being able to express various domains may – and most commonly does – transcend the grammatical prototypes. For instance, realistic present perfects are grams that develop along the anterior cline (cf. section 1.2.3.2, below). As present perfects, they usually express inclusive, resultative, experiential and indefinite perfectal values – semantic subdomains that jointly deliver the perfectal domain (for definitions of these labels, see section 1.2.3.2). By doing so, they comply with the linguistic prototype of a present perfect. However, realistic present perfects can also draw from other semantic domains, especially from two domains that correspond to other stages of the anterior path: the resultative domain (that corresponds to the stage from which perfects derive) and the past domain (that corresponds to the stage towards which perfects move). Accordingly, by offering these values, realistic perfect grams can range from those that strongly resemble the perfectal prototype to those that do so to a lesser degree. As they become less compatible with the prototype of a perfect, they may inversely approximate other prototypes. In general terms, less developed (younger) perfects approximate the resultative-proper prototype, whereas more advanced (older) perfects approximate the past-tense prototype. Furthermore, realistic perfects can fail to comply with the perfectal prototype because the perfectal domain is itself composed of the sub-values mentioned above. This means that a realistic perfect can be compatible with one, two or three such sub-domains instead of four, again, more or less approximating the perfectal prototype. For example, the Icelandic *búinn að* gram is only used in the inclusive and resultative functions, while the Swedish *har gjort* gram is acceptable in the four perfectal senses (cf. Figure 1.9). The Spanish *pretérito perfecto* is used in three perfectal functions (resultative, experiential and indefinite) as well as in the function of a hodiernal (today’s) past tense. Lastly, the French *passé composé* is compatible with all the semantic domains available along the anterior path, although the values of the resultative proper and the inclusive perfect are extremely infrequent and limited to determined types of verbs:

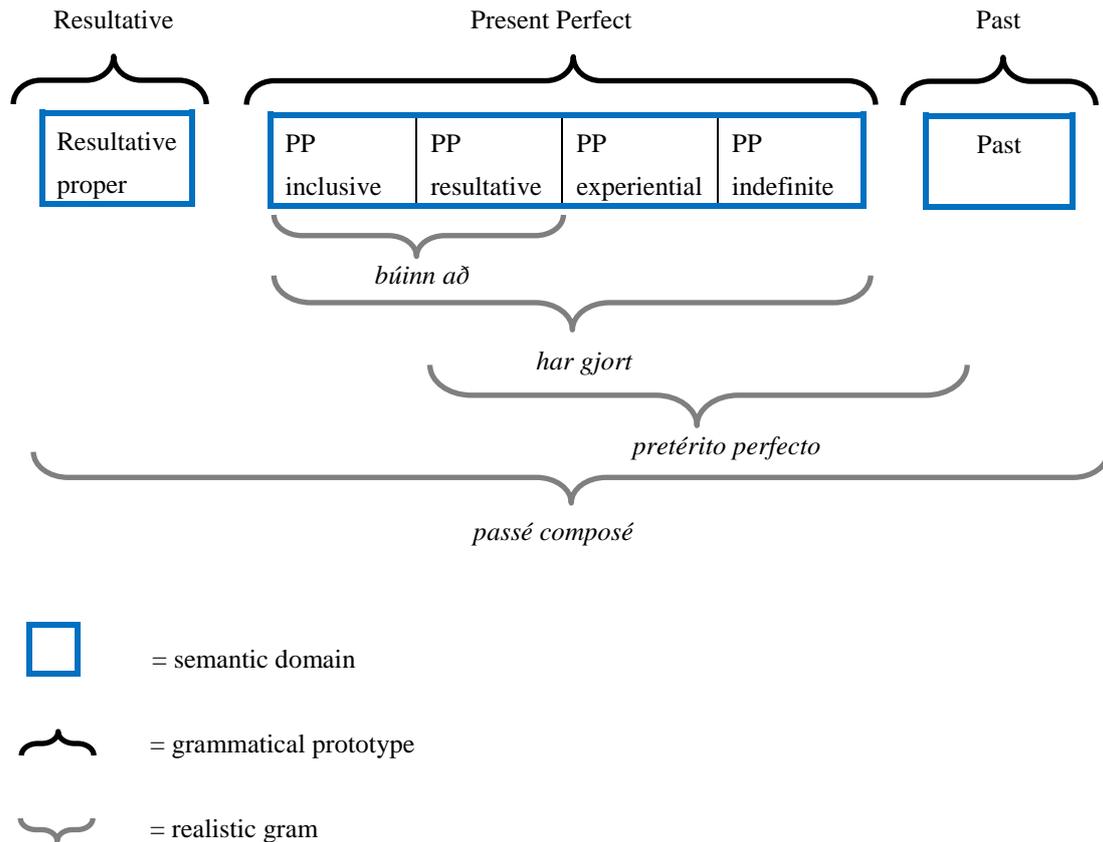


Figure 1.9: Semantic domains, grammatical prototypes and realistic grams (adapted from Andrason & Locatell forthcoming)

### 1.2.3.1 Imperfective path and its extensions

#### *Imperfective path*

The standard model which portrays the grammatical life of imperfective and present grams has been posited by Bybee, Perkins & Pagliuca (1994) and further developed by Haspelmath (1998) and Dahl (2000b). According to Bybee, Perkins & Pagliuca (1994:125, 128, 154, 160-164, 166-174), imperfective formations originate in lexical periphrases that are commonly derived via reduplication and, hence, accompanied by an inherent repetitive force.<sup>40</sup> Depending on whether the repetition concerns a single or various occasions, such locutions display a progressive (they denote ongoing dynamic activities and are usually not used in stative situations)<sup>41</sup> or iterative (they denote events that are repeated, whether on one occasion or numerous occasions)<sup>42</sup> sense, respectively. In their iterative function, such grams are typically employed with dynamic predicates. Subsequently, frequentative constructions develop into habituals (they introduce situations which span extended periods of time), while

<sup>40</sup> Bybee, Perkins & Pagliuca (1994:127-133) also study other sources of imperfective gram.

<sup>41</sup> Bybee, Perkins & Pagliuca (1994) distinguish a pre-stage, so-called continuative where the gram expresses the idea of keeping on doing something on a single occasion.

<sup>42</sup> Bybee, Perkins & Pagliuca (1994) use the term frequentative.

progressives become continuous grams (a situation, and not only a process, is viewed as being in progress and thus the gram tolerates non-dynamic and stative predicates; Bybee, Perkins & Pagliuca 1994:317). At the next stage, the two trajectories, and, thus, the two types of constructions, may merge into an imperfective aspect (Bybee, Perkins & Pagliuca 1994:125-175). In posterior phases, imperfective grams commonly abandon their aspectual value, developing into general present tenses.<sup>43</sup> Consequently, general present tenses are common successors of old imperfective grams which have been devoid of their original progressive, continuous, frequentative and habitual values (Haspelmath 1998:41-45). This change regularly occurs due to the formation and expansion of new progressive-continuous and frequentative-habitual constructions. Thus, old imperfectives evolve into present tenses due to the reduction of their original semantic and functional domain. This model of an imperfective path may be geometrically represented in the following manner:<sup>44</sup>



Figure 1.10: Imperfective path (adapted from Bybee, Perkins & Pagliuca 1994:166-73 and Dahl 2000a:14-17)

Given that in the model employed in the present study, stages represent not distinct grammatical types by rather different senses acquired by a gram, and that the representation should be suitable for a higher-level analysis in the form of waves, several modifications are necessary.

First, in accordance with the observation already found in Bybee, Perkins & Pagliuca (1994:125-126, 172-173), I will introduce two additional segments, i.e. ‘durative’ and ‘gnomic’. During these phases, the gram becomes acceptable in stative situations, expressing duration without making any particular reference to the actual progressivity or habituality of an event (e.g. in Polish: *Pomnik Kościuszki stoi w Warszawie* ‘The monument of Kosciuszko stands in Warsaw’) and is able to express general or atemporal truths (cf. again in Polish: *Ziemia kręci się wokół Słońca* ‘The Earth turns around the Sun’ or *Lubię lody* ‘I like ice-cream’; a similar stage ‘imperfective/gnomic’ was posited by Bertinetto & Lenci 2010).

Second, and more importantly, the stage labelled as ‘imperfective’ will be eliminated since the imperfective – as correctly observed by Bybee, Perkins & Pagliuca (1994:125-126, 141, 317) – includes all the values previously developed on the imperfective path (i.e. progressive-continuous, iterative-habitual, durative and gnomic) or, at least, the majority of them (this will be discussed further in the next paragraph). What also happens at the imperfective stage is that the gram enters into a systematic contrast with another simple or perfective formation. In addition, it is less semantically restricted and usually allows all types

<sup>43</sup> Commonly, the notion ‘simple’ is used in order to refer to such general present tenses (cf. the simple present in English or *presente simple* in Spanish). However, in order to avoid the confusion with an identical term that is employed when referring to ‘simple past tenses,’ (which makes reference to an entirely different phenomenon), I will prefer the label ‘general’ (cf. footnote 45, below).

<sup>44</sup> In this figure, the imperfective additionally evolves into the intransitive (Bybee, Perking & Pagliuca 1994:173).

of verbs, irrespective of their nature. This means that the imperfective is not a new sense the gram incorporates but rather a summation of various more specific microscopic values as well as their macroscopic interaction with some other constructions (a perfective or a simple/general tense). It is a label that relates and unifies various distinct, more individual concepts and behaviours. It is the agglomeration of progressive-continuous, iterative-habitual, durative and gnomic values that delivers a prototypical imperfective gram. Not all such properties must, however, be present in a formation labelled in reference grammars as imperfective. For instance, while in French and Polish imperfective past tenses (*je faisais* and *robilem* ‘I did, used to do, was doing’) – i.e. imperfective grams that have been evolving in a past time frame – span the entire length of the path from the continuative-progressive and frequentative-habitual sections to the durative segment, the Spanish *imperfecto* (*hacía* ‘I did, used to do’) and the Modern Hebrew *hayah qotel* have lost their continuative-progressive uses (Andrason 2014a).

Third, the comprehension of the phase corresponding to a simple or general tense must also be revised. The ‘simple’ temporal value (especially the ‘simple past tense’), just like the category of an imperfective, is not a new value diachronically subsequent to the durative. The adjective ‘simple’ makes reference to a non-overt aspectual sense: the gram may express situations and activities which approximate both imperfective and perfective aspects, depending on the context. What happens during the transformation of imperfective grams – of any extension, i.e. of any amalgamation of the meaning reflecting stages up to the durative phase – into a simple gram is that they spread to non-imperfective uses, such as punctual and, as paradoxical as it sounds, perfective values (cf. Bertinetto & Lenci 2010:36-38). The arrangement of meanings corresponding to progressive-continuous, iterative-habitual, durative and gnomic stages on the one hand, and the senses reflecting perfective uses on the other, delivers, in a single construction, what we label ‘a simple tense’. The process of spreading to perfective contexts may be observed in Icelandic where, in the modern colloquial usage, the originally progressive gram *var að* can be employed to denote punctiliar, unique and bounded actions: *Hann var að koma klúkkan 6* ‘He came at 6 o’clock’ (originally, ‘He was coming’; cf. Comrie 1976).<sup>45</sup> Thus, the terms ‘simple tense’ and ‘imperfective’ do not refer to new specific meanings but refer to a particular collection of atomic values.

Fourth, the model established by Bybee, Perkins & Pagliuca (1994:125-175; see particularly pages 166-174) and presented above is especially pertinent for reduplicative inputs which can develop along two sub-tracks independently. As will be evident from the discussion in chapter 2, in the case of Basse Mandinka, the role of reduplication is less relevant since none of the periphrases derives from a reduplicative locution. All of them

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<sup>45</sup> It should be observed that the term ‘simple’ in the categories of a ‘simple present tense’ and a ‘simple past tense’ does not refer to the same phenomenon. A simple present may be understood either as a broad general present tense (with all possible senses up to the durative or gnomic stage, cf. Spanish *hago* ‘I do, I am doing’) or as a habitual-durative-gnomic present that stands in contrast to a progressive or continuous present gram (cf. *I do* in English; Bertinetto & Lenci 2010:38). The simple past, however, usually refers to a past tense that expresses any kind of past activities (cf. Bertinetto & Lenci 2010:36-38). As explained above, it can denote both perfective (punctual) and imperfective (durative or iterative) actions and situations (cf. again the Swedish simple past *jag tittade* ‘I watched / I was watching / I used to watch’). In our model, the notion ‘simple’ makes reference to such an imperfective-perfective character of a form.

rather seem to have evolved from *busy*/locative expressions, another common type of input of the imperfective path. Such constructions are derived from locative circumlocution with a meaning similar to ‘be busy with doing something’ or ‘be at doing something’. The precise type of the action can be conveyed by an infinitive, verbal base, gerund, participle or verbal noun. In all of such constructions, the idea of circumstantial simultaneity seems to be original. For instance, in Icelandic, the progressive formation, *vera* ‘be’ + active participle (e.g. *Hann er sofandi* ‘He is sleeping’), still preserves the original circumstantial simultaneous value derivable from the participle that underlies the gram. This circumstantial force of the participle may be perceived in cognate locutions such as *Ég ser/sá/mun sjá hann sofandi* ‘I see/saw/will see him sleeping’ (compare also the use of the imperfective-path grams, *yaqtul* in Arabic and *yiqtol* in Hebrew; Andrason 2010a, 2013a). Furthermore, typological studies indicate that, in the grammatical life of imperfectives derived from *busy*- and locative constructions, the progressive (with its extension into continuous) and habitual stages can be arranged in a single consecutive order (cf. already Bybee, Perkins & Pagliuca 1994:141-142 and Bertinetto & Lenci 2010:39). To be exact, the progressive and the continuous seem to be chronologically followed by iterative and habitual, as well as durative and gnomic values (see also Bybee, Perkins & Pagliuca 1994:135). For instance, in Icelandic, the prototypical progressive (*Hann var að skrifa* ‘He was writing’) has recently become, at least in the colloquial language, acceptable in habitual and durative contexts (*Hann var að búa þar* ‘He used to live there’ and *Húsið er að standa í Reykjavík* ‘The house is standing (i.e. stands) in Reykjavík’). The same evolution can be found in the case of the Turkish present formed by means of the morpheme *-(i)yor*.

Consequently, if all these modifications of the standard model are acknowledged and the interpretation of stages as gram types replaced by their understanding as senses to be acquired consecutively, the imperfective path adopts the following structure. The first phase of grams of the imperfective path is schematised by the stage of a simultaneous value. This sense is followed by the phase of progressivity which can further give rise to a continuous value. In these two uses, the ongoingness is profiled. At the next stage, the repetition or extended duration of an activity or situation gains in prominence and the construction acquires an iterative and, later, a habitual sense, and finally giving rise to durative and gnomic uses. These three levels of the development of imperfective grams from *busy* and locative inputs are graphically represented in Figure 1.11, below. In this chart, the evolution is bi-dimensional. On the one hand, the development is vertical from the top to the bottom: from (non- or semi-verbal) simultaneity to ongoingness (progressive and continuous) and, later, to the idea of gradually more extended duration (iterative, habitual, durative and gnomic). On the other, at the second level (ongoingness) and third level (expanded duration), the progression may be horizontal, from left to right: from progressive to continuous and from iterative to gnomic through habitual and durative.<sup>46</sup> Given that an excessive fragmentation of stages renders the wave representation infeasible, the grouping of various

<sup>46</sup> The vertical levels of ongoingness and duration generally correspond to the two main stages of imperfectives posited by Bybee, Perkins & Pagliuca (1994:151), i.e. progressivity and habituality (see also Tröbs 2004a:126).

atomic senses into three major levels lends itself better to the wave model which is one of the objectives of the present dissertation.<sup>47</sup>

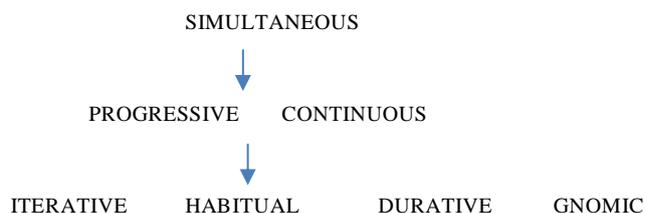


Figure 1.11: Imperfective path

### *Modal trajectory of habitual grams*

As has been mentioned above and as will be explained in more detail in the section dedicated to the modal contamination path, formations developing along the imperfective cline frequently acquire certain modal uses at a highly advanced evolutionary stage – typically, they evolve into a subjunctive mood. However, the modal tone of imperfective-path grams may also have its roots in the habitual value of such formations. The modal nature of habituality has been noted by a wide range of scholars (Carlson 1977, Dahl 1975, Comrie 1985:40, Holm 1988:160, Fleischman 1995:537-539, Langacker 1997:198, Palmer 2001:179, Hellenthal 2007:24, 31, Bittner 2008:376-377, 379, Boneh & Doron 2008:321 and 2010:352-363, Bertinetto & Lenci 2010:38-39, Andrason 2012b, 2013b, 2014b).

To be precise, quite commonly, a habitual performance of an activity triggers a conclusion whereby the agent of the action knows how to perform it. This implies that he or she *is able to, can* and *may possibly* realise it at any time now and in the future. Put differently, the regular repetition of an action can be regarded as a tendency, and thus as a possibly general rule which refers not to the actual validity of statements but to their potential application. As a result, habitual grams – i.e. formations which have incorporated habitual value and are employed in order to portray the usual manner in which things happen – may be used in predictions and suppositions that maintain a clear modal force (Danaher 2001:16 and Hellenthal 2007:24). For example, the sentence *This car goes 250 km/h* may have two readings: One habitual which describes a habitual property of a particular car, and another ‘modal’ denoting its ability or capacity (cf. Dahl 1975, Green 2000 and Menéndez-Benito 2005). Similarly, the sentence *He speaks Spanish* may mean that the person does it repeatedly (*He speaks Spanish every day at school*) or that he knows how to and thus can speak this language (*He will help you with this translation; he speaks Spanish*). Also a Polish sentence

<sup>47</sup> A similar drift (progressive > habitual > gnomic) was posited by Marchese (1986), Haspelmath (1998) and Bertinetto & Lenci (2010; see also Bybee, Perkins & Pagliuca 1994:140-144). What distinguishes my model is the fact that I introduce a special stage of simultaneity or ‘circumstantiality’ (an initial phase prototypical to grams that originate as *busy* and/or locative locutions) and that I employ the label ‘durative’ in order to refer to a semantic domain that includes the idea of general duration (not necessarily on-going or habitual). Additionally, I also propose to posit a stage responsible for the acquisition of the perfective sense which, in turn, leads to the creation of simple – i.e. aspectually neutral – tenses. This development, however, seems to be relevant only for grams developing in a past time frame, i.e. to past imperfectives.

*Ten chłopak skacze 6 metrów* ‘lit. This boy jumps [present imperfective] 6 meters’ may have two interpretations. First, it states that the boy frequently jumps 6 meters, and second, it describes his ability. In this latter sense, it may be employed for modal purposes predicting a possibility. In such a usage, this expression can be true even if no actual jumps to the said height have been witnessed. The statement may, thus, display a clear modal (dispositional or ability) sense.

Boneh & Doron (2010:352 and 355) observe that habitual expressions differ from progressives not only in the iterativity of an event, but especially in their relation to the modality. Namely, habituality is inherently modal and possesses an intrinsic modal component. For instance, the sentence *They are issuing visas at the consulate, but they are closed this month* is contradictory while the sentence *They issue visas at the consulate, but they are closed this month* is not because “the habitual operator [...] does not require actualization” (Boneh & Doron 2010:360). Put differently, since habitual grams do not necessitate the actuality of the event which is described (Palmer 2001:179 and Hellenthal 2007:31) they naturally lend themselves to extensions over possible worlds (Fleishman 1995:537-539 and Danaher 2001:18). As a result, habituals may be used to denote conceptual distancing and hence to introduce modal hypothetical facts (Danaher 2001:21-22).

All of this means that once a progressive-continuous gram gains a palpable habitual force, it may subsequently acquire a modal sense of ability. Considering this, when an iterative-habitual is employed to express agentive modal situations of physical and mental ability and capacity, it may undergo a regular evolution codified by a properly modal path, namely, the ability cline (Bybee, Perkins & Pagliuca 1994:230-236, 295-300 and Andrason 2012b:17-20, 2013a, 2013b, 2014b). In particular, it may develop the value of root possibility as well as epistemic, intentional and permission-prohibitive senses. Afterwards, it can be used as an imperative, as a modal future and as a subjunctive modality (for a detailed discussion of the ability cline, see section 1.2.3.3 below).<sup>48</sup>

### 1.2.3.2 Resultative path

The resultative path is a complex evolutionary scenario that describes the grammatical life of originally resultative proper (and completive) constructions. In particular, it specifies the order in which resultative inputs acquire taxis, aspectual and temporal senses, thus offering a model of their gradual development into new grammatical categories. The path consists, itself, of three major clines: anterior, simultaneous and evidential tracks.

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<sup>48</sup> It should be observed that the acquisition of clear future uses may encourage further identification of the construction with the concept of modality. This occurs because the central function of future grams is the idea of intention and prediction. Consequently, future tenses are less exclusive temporal categories but rather more “agent-oriented and epistemic modalit[ies], with important temporal implications” (Bybee, Perkins & Pagliuca 1994:280). We should therefore not be surprised by the fact that even prototypical future tenses born out of old presents commonly provide certain modal nuances.

*Anterior path*

In the most general terms, the anterior path establishes that present resultative-proper grams quite regularly evolve into simple past tenses, passing through the phases of a present perfect and, in certain cases, perfective pasts. First, resultative inputs develop into present perfects,<sup>49</sup> acquiring the following values: inclusive, resultative, experiential and indefinite. Subsequently, such originally resultative proper formations become acceptable in explicit past contexts – they develop properties of definite past tenses. Once admissible in an overt past environment, grams usually escalate their temporal separation or detachment from the enunciator’s here-and-now, acquiring more and more distant past values: immediate, hodiernal, hesternal, recent, general and remote. In a number of languages, during the transformation of a present perfect into a definite past tense, it is possible to observe an adjacent change – and hence posit a distinct historical stage – where an upcoming definite past is aspectually marked as a perfective. Subsequently, perfective pasts transmute into simple past tenses (Nedjalkov & Jaxontov 1988:3-63, Bybee, Perkins & Pagliuca 1994:55-57, 98, 104-105, Squartini & Bertinetto 2000:406-407, 414-417 and 422, Dahl 2000a:15, Nedjalkov 2001:928-940, Heine & Kuteva 2007:151 and Andrason 2010b:325-345, 2011a:35-38, 2011b:11-15, 2012c).

Grams of the anterior path are typically born as resultative proper constructions (such as the Spanish and Polish constructions, *está hecho* and *jest zrobione* ‘it is done’, or the *parsāku* gram in Akkadian; Andrason 2011b, 2012c, 2013a, 2014a). Resultative proper grams are formations whose meanings consist of two equally relevant components: one indicates the currently attested state of an object or person and the other makes reference to an action, formerly accomplished, from which this current state has resulted. In such expressions, neither the prior dynamic event nor the posterior static result is emphasised – both are indissoluble and interconnected. Resultative proper forms commonly display a non-agentive and intransitive character, thus having a de-transitive effect on the underlying transitive verbs or roots (Haspelmath 1994:159 and Nedjalkov 2001:928). Put differently, when resultative proper grams are derived from transitive verbs, the argument structure is rearranged and they usually offer a passive value. Such a de-transitive force is what links resultatives to present passives (Nedjalkov & Jaxontov 1988, Maslov 1988).<sup>50</sup>

Subsequently, original resultative proper grams acquire various perfectal senses. One should note that the category of a perfect is, itself, a complex group of more specific senses (Kiparsky 2002:1), such as an inclusive perfect (an action or a state holds without interruption from a determined point in the past to the present moment: *I have known Max since 1960* (Jónsson 1992:129-145), a resultative perfect (dynamic events have occurred and since then the results remain unchanged for the present state of affairs: *I cannot come to your party – I have caught the flu*; McCawley 1971 or *The police have probably caught the suspect by now*; Kiparsky 2002:1), an experiential perfect (the subject has experienced

<sup>49</sup> Perfects are also referred to as anteriors (Bybee, Perkins & Pagliuca 1994, Nurse 2008)

<sup>50</sup> This relation may also be perceived in the fact that in certain languages, resultatives and passives of transitive verbs display the same form or that the passive voice is employed to express the resultative meaning (so-called ‘statal passive’; Maslov 1988 and Nedjalkov 2001:937).

performing a given action: *I have read 'Principia Mathematica'*; Jónsson 1992:129-145), and, under some analysis, an indefinite perfect (a hot news perfect as in *Archduke Ferdinand has been assassinated in Sarajevo*; Kiparsky 2002:1).<sup>51</sup> What unifies them is the ability to express anterior events, actions or situations that are relevant to the present (De Haan 2011:456). It is either the situation itself that continues into the present or its results that do so (Comrie 1976:52; cf. also Nurse 2008:154). In fact, in its exemplary function, a perfect belongs to the temporal or cognitive sphere of the present. This current relevance is what distinguishes present perfects from definite past tenses (Comrie 1976:52-54, Bybee, Perkins & Pagliuca 1994:61, Nurse 2008:154-155, De Haan 2011:456-457) and thus it is not surprising that present perfects cannot be employed with lexemes or expressions that explicitly locate the activity in the past time frame (Bybee, Perkins & Pagliuca 1994:61-62). In comparison with resultatives, the perfect usually emphasises the dynamic event or activity while the relevance of the component related to the resulting state – although certainly available – is reduced. Additionally, the intransitive character and de-transitive effect on transitive roots is eliminated so that present perfects are commonly used in active constructions (Nedjalkov 2001).

One should also note that in typological studies, the categories of a perfect and perfective are considered to be distinct phenomena (Bybee, Perkins & Pagliuca 1994:54-55, Nurse 2008:154, De Haan 2011:450-452, 456-457). Perfects belong to the meta-category of taxis, whereas perfectives belong to the meta-category of aspect. If the meta-category of taxis is not explicitly employed, perfects and perfectives are still understood as distinct (in this approximation) aspectual types (Nurse 2008). As for the perfective aspect, it is usually restricted to the past time frame, portrays events as complete and bounded with no internal event structure and in its prototypical usage introduces single and punctiliar events. On the contrary, the perfect typically offers the nuance of current relevance (which is insignificant for perfectives), has a complex internal structure (an anterior event that continues to the present or with results that do so) and can express durative continuing states or sequences of activities (cf. inclusive and frequentative perfects; Dahl 1985:78, 84-86, Bybee, Perkins & Pagliuca 1994:54, 82-87, Kiparsky 2002, Nurse 2008:134-135, De Haan 2011:450-451).

Typological studies demonstrate that the acquisition of the perfectal values is unidirectional and strictly ordered. To be exact, resultative proper grams expand into the inclusive perfect, suggesting that an action or a state holds without disruption from a determined moment in the past to a present temporal point. The emphasis lies on the present temporal sphere and the intrinsic value is durative. Later, the construction gives rise to resultative-perfect uses which, even though explicitly pointing to a dynamic, previous event, still strongly connote its relevance for the present state of affairs.<sup>52</sup> Later, the construction becomes admissible in an experiential sense, indicating that the subject has an experience of having performed a certain activity. In other words, the experiential anterior presents an event as an experience which occurred at least once, and which might have been repeatable. One

<sup>51</sup> In addition, scholars sometimes distinguish another sub-stage of the perfect, i.e. the frequentative. In this use, the current or recent repetition of activities is in focus, as exemplified by the Portuguese perfect *Ultimamente o João tem lido muitos romances* 'Recently John has read many novels' (Squartini & Bertinetto 2000:409).

<sup>52</sup> During this stage, the gram also acquires a frequentative value, being able to introduce iterative-resultative perfectal activities.

should note that in all above-discussed exemplary perfectal uses, an activity expressed by the originally resultative gram (now, used as a perfect) cannot be explicitly located in a past time frame.

In addition, present perfect senses may yield two further types of meanings or uses: performative and gnomic. As for the former, scholars generally recognise a close relation between grams evolving along the anterior path and their performative value (cf. Nedjalkov 1988:415, Streck 1995 and Andrason 2011b:36-37, 2012d). This relation is especially evident for original resultative proper formations which have frequently been reported as being able to appear with a performative force (compare the German example *Richter: Antrag ist abgelehnt* ‘The judge: The motion is (lit. has been) turned down’ (Nedjalkov 1988:415) or the Finish case *Teidät on pidätetty* ‘You are arrested’ (lit. have been arrested)’ (Volodin 1988:473)). However, the same relation also persists for prototypical present perfects (or grams that usually express the value of a present perfect), given that such grams are quite commonly bestowed with certain types of performative value (cf. Denz 1982-1992, Müller 1986, Kienast 2001, Metzler 2002, Andrason 2012d). By analysing crosslinguistic evidence, it has been hypothesised that the performative stage constitutes a relatively common extension of resultative proper and perfectal values and could either be envisaged as an independent extension (i.e. radiating from the resultative proper) or be located between the stages of an inclusive and a resultative perfect (for a detailed discussion, see Andrason 2012d).

A similar connection has been observed between grams travelling along the anterior path and the idea of gnomicity. In general terms, the gnomic sense is commonly conveyed by formations located on the anterior path. Resultative proper grams are especially frequent in the gnomic function. They almost naturally express general truths, habitual states, or permanent – potentially universal – situations because the resultant state may be viewed not only as currently present or actual but also as permanent and thus universal. This predisposition of resultative proper grams for gnomic extension stems from the fact that they typically include a nuance of stativity in their meaning. As explained above, resultative proper formations are twofold semantic complexes in which a state is portrayed as acquired. Since the acquired (due to a prior action) state can be expanded to larger periods of time, resultative proper grams may indicate not only current resulting conditions but also permanent ones (see also the discussion concerning the simultaneous cline, further below). Such permanent states can thus be employed to express invariant truths. Present perfects are other formations that lend themselves to habitual, generic, and characteristic, and, hence, gnomic uses. This stems from the fact that these grams commonly offer inclusive, frequentative, and experiential senses, which almost naturally give rise to gnomic extensions. The inclusive and frequentative perfects can express universal truths, because they portray activities as rules that have been holding (inclusive) or repeating (frequentative) since a moment in the past and into the present. The experiential perfect does not represent an activity, expressed by the verb, as habitual or constantly occurring. Nevertheless, it indicates that the subject has a general experience of having performed a certain action. Since such actions are currently relevant, they may be extended from the present actuality to a permanent view, yielding a gnomic reading. Accordingly, the gnomic value has been viewed as

constituting a typical extension of the following senses located along the anterior path: resultative proper, inclusive perfect, frequentative perfect and experiential perfect (for details, see Andrason 2012e).

The indefinite perfect value is a linking stage between a prototypical present perfect and a prototypical past tense (Lindstedt 2000:369, 379). Although in this use, the event expressed by the gram clearly occurred in the “chronological” past, grammatically speaking, it does not belong to the past cognitive sphere, as the verbal form is not accompanied by any overt past temporal specifier. In other words, the main emphasis is placed on the past action itself without, however, situating it at a definite moment in the past. Thus, the indefinite perfect is an intermediate stage between the present perfect and a past tense. It indicates anterior or past events clearly (anterior to the reference time frame and to the enunciator), but without overtly determining its temporal location. As for the former property, the gram approximates a past tense: it indicates already accomplished events as “the situation referred to stops before the moment of speaking” (Depraetere & Reed 2000:97). However, given the latter characteristic, whereby it does not tolerate past time adverbials, the formation behaves as a typical present perfect. Accordingly, in the indefinite perfect sense, a gram can be used to introduce events – even sequential ones – which occurred previously (cf. Lindstedt 2000:369, 379). The ‘journalistic perfect of hot news’ is a subtype of the indefinite perfect (Kiparsky 2002:1, 7).

The expansion from a resultative proper gram to an indefinite perfect and later towards a past reflects the process whereby the relevance of the previously performed action for the present state of affairs progressively becomes less evident. In other words, as the present resultative evolves, the idea of current relevance originally provided by the gram diminishes until it is entirely lost and the gram is transmuted into a past (Lindstedt 2000:365-366, 369-371).

Once the explicit past reference – introduced by past time adverbs or phrasal expressions – is acceptable, an old resultative and present perfect formation acquires a definite past value. Similarly to the evolution within the perfectal portion of the path, the development of definite past grams consists of various intermediate stages. In general terms, during this progression former present perfects (but now definite past tenses) gradually increase the degree of remoteness, i.e. the temporal distance from the enunciator’s now-and-here (Bybee, Perkins & Pagliuca 1994:98, Squartini & Bertinetto 2000:414-417, 422). This signifies that the construction expresses more and more remote past events. First, it functions as an immediate past, later as a hodiernal past, a hesternal past and as a broad recent past. Subsequently, it approximates a general past, a remote past and, at the end, an ancient (narrative) past.

The other change in the realm of the past time sphere corresponds to the transformation of a perfect into a perfective past and next into a simple past. During this process, the evolving anterior-path gram is first used to express perfective events in the past. However, later, it can also introduce activities that are not perfective, but rather durative. The compatibility with both perfective and non-perfective domains delivers a simple past tense. This type of evolution seems to be facultative and only occurs in determined types of verbal systems, especially in those where an anterior-path gram develops in the context of an

imperfective past (Bybee, Perkins & Pagliuca 1994). It should be noted that there is no precise stage-to-stage equivalence between the stages which link the indefinite perfect and various subcategories of the definite past on the one hand, and the development of the perfective past into its aspectually neutral variant.

The entire, highly complex and dimensional, grammatical life of resultative constructions can be modelled as follows:

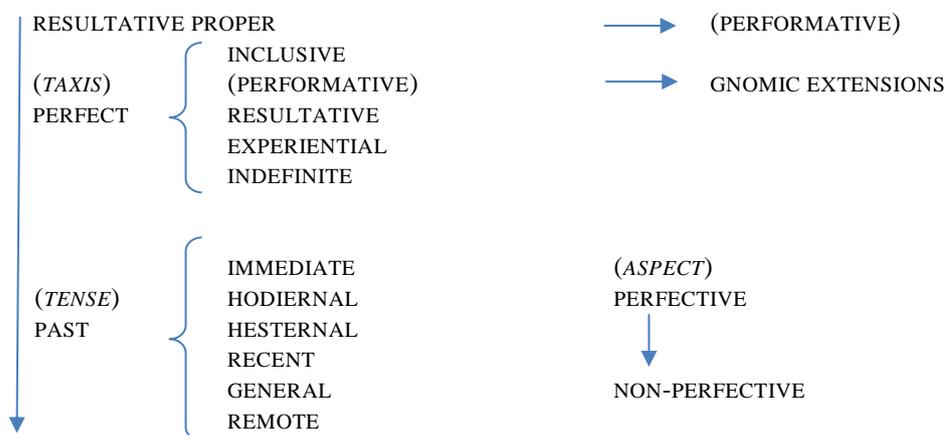


Figure 1.12: Anterior path<sup>53</sup>

The evolutionary model discussed above (from a resultative proper to a perfect and later to a past tense) applies to resultative-proper grams that have been developing in a present time frame. However, resultative expressions may also evolve with a past and future temporal reference, giving rise to past perfects (pluperfects) and future perfects. These two formations may subsequently lose their taxis connotations and develop into tenses, remote past and simple future respectively. The use of the pluperfect as a remote past may be illustrated by the Old Polish expression, *zrobił jeś był* 'you had done'. In Old Polish, this analytic locution had partially lost its taxis character and could be employed to indicate general non-perfectal, but rather remote, past activities (Długosz-Kurczabowa & Dubisz 2003:309). An instance of the anterior path in the future time frame can be exemplified by another Polish formation, the periphrastic simple future tense *będzie robił* 'he will do', which derives from an original perfect future expression (Długosz-Kurczabowa & Dubisz 2003:310).

### *Simultaneous path*

The anterior path is the most common and the best understood law controlling the development of resultative formations. Nevertheless, it does not codify all possible evolutionary scenarios according to which such constructions may develop. In particular, it is insensitive to a phenomenon whereby resultative inputs give rise to present tenses and

<sup>53</sup> The vertical arrows in this figure symbolise the diachronic progression of resultative inputs. The horizontal arrow stands for the development of a gnomic and, possibly, performative sense, prompted by various perfectal meanings.

evidential categories. The former type of grams arises due to the simultaneous cline, while the latter is prompted by the evidential track.

The simultaneous path schematises the manner in which resultative proper grams develop into present tenses. The sequence of stages seems to parallel the anterior track in the way that both trajectories traverse the verbal domains of taxis, aspect and tense in a similar order. However this time, the final product of the cline is not the definite past, but rather the present tense. In general terms, three main consecutive stages are distinguished on the simultaneous cline: resultative stative present (perfectal nuance), stative present (aspectual nuance)<sup>54</sup> and present tense (temporal nuance; cf. Maslov 1988:70-71, Bybee, Perkins & Pagliuca 1994:74-78, Drinka 1998:120, and especially Andrason 2014a). It should be noted that the term ‘simultaneous’ in the name of the path makes reference to the following fact: As far as the original sense of resultative proper formations is concerned, the emphasis is put on the resulting state, which is simultaneous (and not anterior as is the case of the anterior cline) to the main reference time.

To begin with, the simultaneous cline predicts that certain resultative proper grams – especially those formed from adjectival roots, static predicates or verbs whose resultative uses typically trigger non-dynamic readings (e.g. various perception, cognition and sensory verbs) – employed in a present time frame, give rise to resultative stative uses. In this use, a gram emphasises a resulting static condition that is concurrent with the main reference time, the present. At this stage, the idea of an anterior event that has led to such a present situation is still available, although it seems to be significantly less evident and relevant than in the case of a resultative proper and especially present perfect. The main emphasis is put on the resulting state, while the prior action is merely suggested (e.g. *Nie mam sił. Jestem zmęczony* ‘I have no strength. I am tired’ or *Mam (nadal) zdrętwiałą nogę* ‘I (still) have a stiffened leg’ (i.e. my leg is still stiff)’ in Polish; Andrason 2014a:20-21). Next, resultative statives acquire a pure stative sense. Resultative undertones become unavailable and the only remaining sense corresponds to a static quality or situation. Any connection between the achieved state and the activity from which it has emerged is abandoned. This means that the formation denotes the idea of a non-dynamic condition with no traces of a resultative nuance. It conveys a stative, usually permanent, adjective-like quality of the subject of the verb (*is white, is good*). Stative present expressions usually interact with a dynamic “normal” present leading to an aspectual contrast between the two constructions, e.g. between a state and an activity (for instance *N konkota* ‘I am hungry’ in Mandinka or *Ndilambile* ‘I am hungry’ in Xhosa; Andrason 2014a:26-27).<sup>55</sup> Finally, statives may be generalised as general presents, indicating not only states, but also more dynamic activities and even processes. In particular, a gram is used with non-static predicates and in a sense that does not express a quality. One of the most exemplary cases of resultative constructions that have evolved to the peak stage of the simultaneous path is provided by Germanic preterite-present verbs (*ég kan* ‘I know how to’ or *ég veit* ‘I know’ in Icelandic; Bybee, Perkins & Pagliuca 1994:77-78; for a detailed discussion and further examples, see Andrason 2014a).

<sup>54</sup> Concerning the argumentation for an aspectual understanding of the category of a stative, consult Andrason (2014a) and the reference therein.

<sup>55</sup> Grams that are used in the resultative stative function and in the stative function are usually intransitive.

The evolutionary scenario schematised by the simultaneous cline, moreover, shows a concurrent semantic extension, i.e. from an actual situation (either currently resultant or simply available) to a more persistent and permanent one (and hence towards a general present tense). The value of actuality is included in the original resultative proper locution which typically indicates results that are currently available (i.e. at a given reference time) and cognitively pertinent to the speaker's here-and-now. Afterwards, the actuality gives way to persistence and a more extended duration (for a more comprehensive discussion of the simultaneous path, see Andrason 2014a). The entire transformation of resultative proper expressions into present tenses may be summarised in the following manner:

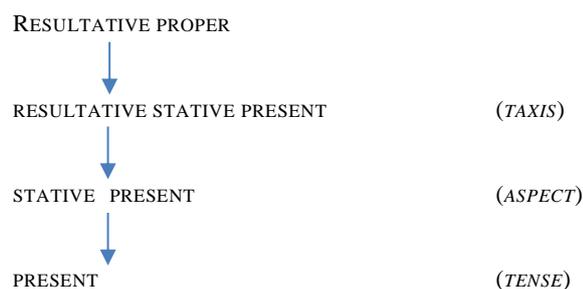


Figure 1.13: Simultaneous path

In a way analogous to the anterior cline, the simultaneous path can also be applied to a past and future time frame, giving rise to values that are equivalent to the previously mentioned ones with the distinction that, now, their temporal reference is past or future. For instance, the simultaneous track triggers resultative-stative past, stative past and imperfective past values or categories (the imperfective past is a past equivalent of a broad present; Bybee, Perkins & Pagliuca 1994:80, 102, Andrason 2014a).

It is important to note that the simultaneous path, in the shape posited above, enables us to systematically combine non-perfectal, non-perfective and non-past senses (i.e. stative and present ones) with values that mirror stages on the main evolutionary scenario controlling the development of resultative morphologies, viz. the anterior path. In this manner, it is possible to harmonise the “toward present” and “toward past” sets of meanings displayed by a given gram at any moment of its grammatical life. Both groups of values reflect the universal processes governing the semantic growth of resultative inputs. Both correspond to the same direction of an evolutionary route linking the domains of taxis, aspect and tense. Consequently, when describing a gram whose main uses match a portion of the anterior trajectory (perfect, perfective and/or past stages), the cases where the same formation provides values related to the simultaneous cline (resultative stative, present stative and present tense) cease to be rare or exceptional. Quite the reverse, such meanings become fully compatible with the main semantic content of the formation given that both sets of values are regular manifestations of two evolutionary scenarios a resultative input can undergo.

There is, however, a substantial difference between the simultaneous cline and the anterior path. While all predicates (either dynamic or static) may follow the anterior trajectory, it seems that only non-dynamic predicates (static and adjectival verbs, as well as

verbs that favour static inferences, e.g. sensory verbs) follow the simultaneous track. Even more importantly, while the anterior and evidential paths can convert a category as a whole into a perfect or past (admitting all possible verbs and/or roots), the simultaneous cline, which is virtually restricted to a sub-class of non-dynamic predicates, never delivers a category in which all verbs could participate. In other words, the anterior cline concerns the entire category while the simultaneous cline usually affects only a group of verbs.<sup>56</sup> This dissimilarity of the crosslinguistic persistence of the anterior cline and the simultaneous cline and/ their strength in a single language likewise suggest that the former cline could constitute a “stronger” or “governing” evolutionary law, whereas the latter would correspond to a “weaker” or “subdued” developmental principle. In this manner, the anterior path could influence the simultaneous track by hindering it or attracting it, so that, in the end, even non-dynamic predicates would follow the anterior cline.

Finally, in order to posit a wave model – which requires a more coarse-grained perspective – the anterior and simultaneous clines will be simplified into a bi-directional, six-stage template. On the part of the cline matching the anterior path, all the perfectal senses will be coalesced into the single stage of a perfect and the past values of any remoteness will be grouped into the stage of a past. However, the distinction between perfective and non-perfective will be maintained. On the portion of the cline equivalent to the simultaneous path, only two senses – those easy to detect – will be distinguished: the stative present (or stative) and the non-stative present (or present).



Figure 1.14: Resultative path – a coarse-grained view

### *Evidential path*

The third formative trajectory of the resultative path is the evidential cline, which links resultative proper grams with various modal domains, in particular with non-first-hand and epistemic values (for the relation between perfects and evidential categories, see Comrie 1976 and Dahl 1985). In general terms, the evidential path stipulates that certain resultative proper forms evolve into modal categories by passing through four developmental stages during which the following senses are acquired: a) evidential value; b) inferential value; c) referential value and d) modal epistemic value. In some publications, an additional phase is posited – the so-called broad non-first-hand evidential phase. This stage, however, does not exemplify a new sense but rather refers to an accumulation of various non-first-hand values within a single gram (Chafe & Nichols 1986, Lindstedt 2000, Johanson 2000 and 2003, Aikhenvald 2004:112-117, 279-281, and Andrason 2010c and 2013).

As already indicated, at the beginning of their grammatical life, resultative proper constructions denote the actual effects of previously performed actions. To be exact, they

<sup>56</sup> A possible exception may be the Polish imperfective present passive, which traces its roots to a resultative formation and also tolerates all verbs, although only in their imperfective varieties

introduce contemporarily persistent states understood as results of formerly performed activities. Such ensuing situations are typically relevant to the cognitive area of the speaker's here-and-now (Comrie 1976 and Johanson 2000). By applying the general human deductive capacity to perceivable results (i.e. to the available evidence), the observer may additionally infer that, although he has himself not witnessed the event that led to the creation of a present state, the action in question must have occurred. At this stage, the resultative acquires an indirect, more concretely evidential sense. This evidential value of resultatives and present perfects is a typologically common phenomenon. For example, it may be detected in North Germanic languages, such as Swedish and Icelandic, where the respective present perfects (descendants of an earlier resultative expression) may offer the so-called *guessing* meaning (Haugen 1972, Jónsson 1992 and Lindstedt 2000). Subsequently, other indirect senses can be derived: first inferential and next referential. The inferential phase makes reference to the ability of certain post-resultative constructions to convey the idea of inference founded on general knowledge, widespread assumptions and hearsay (for instance, the Persian "distant" perfect or past in Lazard 1985). As far as the referential category is concerned, this includes grams that express reportative senses, i.e. they are used to narrate events that have not been witnessed by the storyteller himself. In some languages, it is possible to distinguish a phase where the evidential, inferential and referential senses can all be incorporated into the semantic potential of grams travelling along the evidential cline. In such cases, a post-resultative construction is said to introduce a broad range of non-first-hand meanings (Aikhenvald 2004:112-117, 279-281). This advanced stage of the development may be illustrated by the Turkish evidential *miş*-perfect or by the Macedonian perfect in *l* (Lindstedt 2000 and Johanson 2003). At an even more advanced moment of evolution, a formation that has been developing along the evidential cline may acquire epistemic modal senses and transform into a non-indicative mood of probability and doubt (conditional, dubitative, subjunctive; Bybee, Perkins & Pagliuca 1994:95-97 and Aikhenvald 2004:116, 147). This entire process of the conversion of resultatives into epistemic modality may be graphically represented as follows:

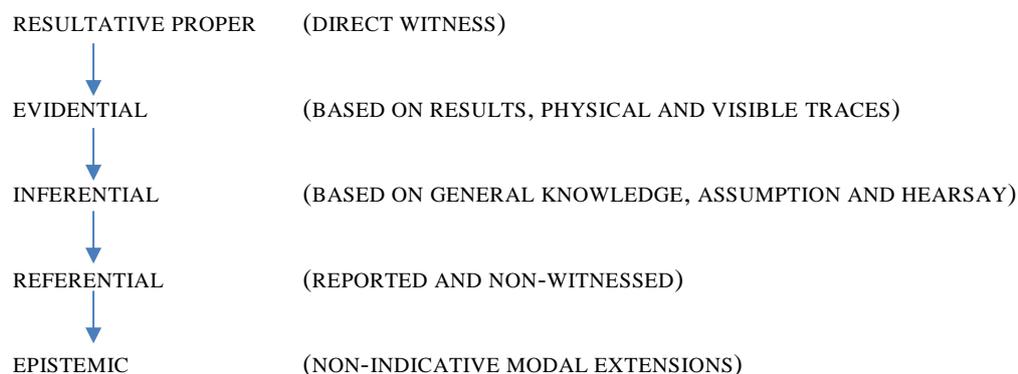


Figure 1.15: Evidential path

It should be noted that according to Bybee, Perkins & Pagliuca (1994:97), evidential-inferential-referential categories are generated from resultatives that originate in stative

verbal sources. Inversely, resultatives derived from dynamic verbal sources are less favourably disposed to developing modal extensions. This however, seems not to be the case, as various post-resultative constructions of a dynamic perfectal nature (i.e. present perfect and even past tenses) can develop evidential nuances. In fact, one should observe that grams that develop along the evidential cline usually display a concurrent progression, following the anterior trajectory. This means that they not only gradually develop evidential, inferential, referential and modal senses, but also acquire present perfect, perfective and past values (see once more the Turkish *miş* perfect or past and the Macedonian formation in *l*).

### 1.2.3.3 Modal paths

Grammatical moods typically emerge from two types of developments: genuine modal paths and modal contamination path (cf. section 1.2.3.5 below). Where the latter shows how moods evolve from indicative inputs due to external contextual factors, the former represents the evolution from sources that regularly involve some modal nuances. In other words, genuine modal paths schematise the evolution from explicitly modal periphrases to genuine moods or from locutions whose original meanings directly prompt and motivate development towards modality. In both cases, the foundation of meaning extensions leading to modality is mainly internal (albeit not exclusively).

Broadly speaking, genuine modal trajectories – referred to jointly as a modal cline (Fischer 2007:181-182) – present a similar evolutionary pattern. Grams of a modal path originate in modal expressions that are agent-oriented, and that usually connote the ideas of physical and mental ability, obligation, desire and intention, as well as some allative nuances (Bybee, Perkins & Pagliuca 1994:206-241). Subsequently, the modal value spreads to speaker-oriented (e.g. imperative, prohibitive, optative or prohibitive) and epistemic uses. In the end, modal expressions are generalised in subordinate clauses where, like a subjunctive, they can survive for a longer time, even after they have disappeared in principal and independent phrases.<sup>57</sup> At the beginning, such subordinate modal grams are harmonic with their introductory predicates and tend to be employed with verbs such as *want*, *desire* or *order*. However, later, they spread to environments with non-harmonic introductory predicates, which do not necessitate a modal reading (Bybee, Perkins & Pagliuca 1994:206-241 and Fischer 2007:181-182).

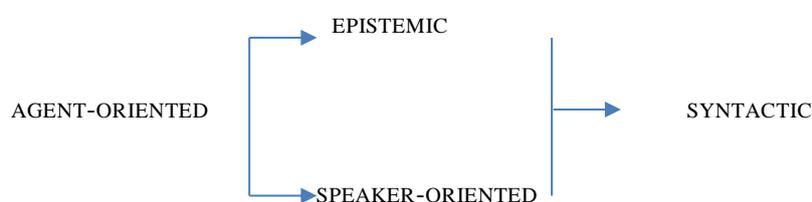


Figure 1.16: General modal path

<sup>57</sup> Subjunctive modality is a broad set of meanings that are activated in determined syntactic environments. Following Bybee, Perkins & Pagliuca (1994), I understand subjunctives, both as constructions and senses, to be modal grams that are typically confined to specific syntactic contexts (especially certain subordinate clauses) or to be syntactically based modal values.

Furthermore, it should be noted that once the construction travelling along the modal cline acquires an intentional nuance, it can also develop into a modally coloured future tense and later, a non-modal future tense (on the link between modality and futures, see section 1.2.3.4 below). This can be incorporated into the model in the following manner:



Figure 1.17: General modal path<sup>58</sup>

There are various subtypes of genuine modal trajectories depending on the semantic properties of the lexical input from which a given modal path emerges. For the sake of this study, two clines will be presented in detail: the ability path and the obligation path. Additionally, the main characteristics of the desire path will be mentioned since a development belonging to this class is also relevant for the creation of the Basse Mandinka future (Bybee, Perkins & Pagliuca 1994:240).

The ability path has its roots in semantically transparent expressions of mental or physical ability. In accordance with the general progress described above, the value of learned ability progressively develops into the meaning of capacity and root possibility. Later, the gram acquires more speaker-oriented functions (such as the meaning of permission and its negative variant, prohibition, as well as the optative and jussive) and the values of epistemic possibility and probability. Epistemic functions (and intentional values which can also arise from root possibility) motivate the use of the gram as a modally marked future and subsequently as a genuine future tense. This additionally triggers a more frequent application of the formation in conditional phrases and concessive contexts, and in other exemplary syntactically based environments where it is used as a subjunctive modality (Bybee, Perkins & Pagliuca 1994:230-236, 295-300; cf. Figure 1.18, below).

A good example of such grams is the English expression with *may* that is built on the Proto-Germanic verb *\*magan-/\*mugan-* ‘be able, can’ with a clear agentive modal value, a successor of the Proto-Indo-European root *\*mVgh-*, whose original sense was related to the idea of force and power as demonstrated by the Old Indian *maghá* ‘force’ (Birkmann 1987:72-74). This English gram has advanced on the cline and acquired the speaker-oriented senses of permission (*You may go now!* and *May I help you?*) and prohibition (*No, you may not do it!*; cf. Bybee, Perkins & Pagliuca 1994:191-194). It has also incorporated optative and jussive values (*May we all meet again!* (Bybee, Perkins & Pagliuca 1994:321) and *May the gods destroy him* (Palmer 2001:109)). Furthermore, it is commonly used with an epistemic meaning (*It may be true*) and in the function of a modally coloured future (*It may rain tomorrow*; Hopper & Traugott 2003:87-88, Bybee, Perkins & Pagliuca 1994).

<sup>58</sup> The paths schematised in Figures 1.16 and 1.17 will be employed to design wave representations of Basse Mandinka modal grams (cf. chapter four).

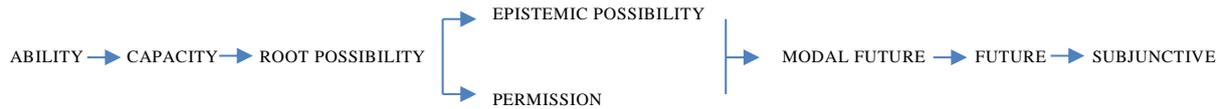


Figure 1.18: Modal ability path

The obligation path represents the grammatical life of formations that derive from expressions of obligation placed upon the subject. In accordance with the general developmental trend found in all genuine modal paths, formations travelling along the obligation path first express an agent-oriented modal sense, in this case the nuance of obligation. Subsequently, this value expands to speaker-oriented uses (e.g. imperative, prohibitive, optative and jussive as well as deliberation) and to epistemic values and potentiality. In a manner analogous to the ability cline, at this stage, the intentional value can also be derived. During the next evolutionary phase, the epistemic value (and sometimes the intentional sense) gives rise to the use of the construction as a modally marked future, additionally triggering a more extensive application of the form in conditional protases, concessive contexts, and other subjunctive modal situations. When the gram is generalised in subordinate clauses, it can survive in the function of a subjunctive even though it has been eliminated from principal and independent clauses (Bybee, Perkins & Pagliuca 1994:206-241 and 258-264; cf. Figure 1.19, below). It should be noted that periphrases that convey the idea of strong obligation (e.g. *must*, *have to*) yield the sense of epistemic necessity, while the nuance of weak obligation (e.g. *should* or *ought to*) leads to epistemic probability.

The example of this cline can be found in Romance languages where the synthetic future tense (e.g. the Spanish *escribiré* ‘I will write’) descends from a possessive locution with an obligation sense built on the verb *habeo* (*scribere habeo* ‘I have to write’; Hopper & Traugott 2003:52-55). The modal future with the auxiliary *shall* in English is a further case of this type of evolution (Hopper & Traugott 2003:87-88).



Figure 1.19: Modal obligation path

Lastly, it is necessary to mention the so-called desire path which is another common way to derive modal expressions and modally based futures. This path is very similar to the obligation cline and predicts that periphrases built of the agentive idea of desire (e.g. *want*) acquire speaker-oriented values (imperative or optative/jussive) and epistemic senses (probability). Subsequently, they develop modally coloured future senses and, once modal shades of meaning become less relevant, simple future values. At posterior stages, grams that evolve along this cline are generalised in subordinate clauses and conditional phases with a subjunctive and/or conditional meaning. This development can be illustrated by various (modal) futures that derive from expressions of desire such as the future in Serbian *Ja ću ići*

‘I will go’ from *Hoću ići* ‘I want to go’. It is important to note that one of the common sources of the desire cline is the group of verbs expressing the idea of movement ‘go’ or ‘come’. In order to differentiate this path from other desire expressions, this development can be denominated as allative or a ‘movement path’.<sup>59</sup> As this path is a highly frequent source of futures (which can be illustrated by the English *he is going to do it* or the French *il va faire*), it will be discussed in more detail in the section dedicated to future clines (Heine, Claudi & Hünemeyer 1991:172-175 and Bybee, Perkins & Pagliuca 1994:265-267).

#### 1.2.3.4 Future path and related developments

##### *Future path*

In general terms, a future path represents any evolutionary trajectory that leads to the formation of future tenses. I have already shown that future tenses can have several typologically plausible sources. First, various futures start their grammatical life in explicit agent-oriented modal expressions that convey the sense of ability, obligation and desire and willingness. These are futures that are produced during the genuine modal clines. This group of modally based futures commonly includes future tenses that derive from periphrases built on movement verbs (especially on predicates with the meaning ‘go’ and/or ‘come’) and futures that descend from predestination periphrases (so-called ‘be’ or predestination futures). Second, some future expressions arise from analytical locutions that are formed with temporal adverbs (e.g. tomorrow). Finally, future tenses may constitute highly advanced developmental stages of original imperfectives and presents.

All modally based future tenses can be divided into four classes that reflect four semantic ages of futurity. The first group – which corresponds to the initial phase in the life of futures – includes agent-oriented modal locutions that, although they principally convey the values of ability, obligation and desire (as well as the idea of movement), can suggest that actions will be taking place in the future. The second stage is exemplified by grams that in their main use express the idea of futurity, although they are also regularly accompanied by modal nuances, especially epistemic ones. The third type comprises formations whose most prototypical use corresponds to a simple future (future proper tenses). Finally, one can distinguish a class of old futures which are restricted to epistemic subordinate clauses and function as subjunctives. The entire path of future grams is schematised in Figure 1.20, below (cf. Bybee, Perkins & Pagliuca 1994:279). It is evident that this path is analogous to the general modal cline. It should also be noted that in the modal sphere of the cline, the agentive senses (obligation, predestination and movement) typically precede the non-agentive and root epistemic values (intention, possibility), which only later give rise to epistemic uses. This stands, once more, in agreement with the development scenario predicted by the general modal cline discussed in section 1.2.3.3.

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<sup>59</sup> The desire path and the movement path can jointly be referred as a desire-movement path’.



Figure 1.20: General future path of modal type<sup>60</sup>

The close overlap between the future and modal clines makes it evident that future grams are inherently modal and their central function is intention and/or prediction. Inversely, futures fail to form exclusively temporal categories. Quite the opposite, they rather “resemble agent-oriented and epistemic modality, with important temporal implications”. This signifies that modal nuances typically accompany future grams during their entire grammatical life (Bybee, Perkins & Pagliuca 1994:274, 280). Even at stages where a given formation has been grammaticalised as a central expression of futurity and, in its most typical uses, expresses future (i.e. not yet materialised) statements, their validity is only probable or possible. However, it is important to acknowledge that futures do differ in the intensity of such modal components. For instance, Germanic futures (as in Icelandic or Scandinavian languages, e.g. *ég skal gera* ‘I will/shall do’, *ég mun gera* ‘I will/may do’ or *ég ætla að gera* ‘I am going/I intend to do’) are strongly modally laden. Quite the contrary, the Polish future *zrobię* ‘I will do’ fails to provide explicit or overt modal nuances. In order to make such modal readings patent, one must employ specific adverbs.

For the purpose of this study, two more specific types of the future cline (which can also be classified as modal trajectories) will be introduced: a predestination path and a venitive path. Additionally, a future perfect path (a mixture of future and anterior clines) will be discussed, as well as the relation between futures and real/unreal counterfactuality.

### *Predestination path*

Among various modally-based future clines, one may identify a trajectory which applies to the so-called ‘be’ futures. *Be*-futures are future expressions that are built on a verb or entity with a broadly understood meaning of existence or location (such as that conveyed by the English verb *to be*) and the base or the infinitive of a lexical verb, frequently introduced by an adposition or infinitive marker (cf. the English expression *He is to come*). At the beginning of their grammatical life, such constructions commonly provide a strong sense of predestination and subsequently the value of obligation. By doing so, their origin is similar to the obligation path that regularly leads both to moods and to futures. Accordingly, the predestination cline can be viewed as a subtype of the obligation cline. Subsequently, the predestination and obligation shades of meaning give rise to the sense of intention and finally to the genuine future reading which, in turn, may entail further extensions in accordance with the general scenario predicted by future and modal paths, outlined in the previous sections (Bybee, Perkins & Pagliuca 1994:262-263; see Figure 1.21, below).

The predestination path can be exemplified by the Latin future in *-b-* or Scandinavian futures with the verb *bliva* and possibly also by the German future with the auxiliary *werden* (Bybee, Perkins & Pagliuca 1994:262 and Heine 1995:126-127).

<sup>60</sup> This template will be employed for designing wave models of the Basse Mandinka grams in chapter five.



Figure 1.21: Future predestination path (adapted from Bybee, Perkins & Pagliuca 1994)

### *Venitive path*

The venitive path is a sub-type of a movement path which belongs to the desire-movement group of modal clines. As has been explained in section 1.2.3.3, besides triggering various modal values, all such trajectories quite regularly lead to the creation of future tenses.

In general terms, the movement path specifies the grammatical life of future tenses that develop from verbs of movement, especially from predicates with the meaning ‘going’ and ‘come’. In both cases, the original expression includes an allative semantic component (either ab-/allative in the ‘go’-type or venitive in the ‘come’-type) which allows an extension of the meaning to the sense of aiming at and/or reaching a goal. From this, an intentional value emerges: the subject, typically human or animate, exerts control over the activity which he or she intends to accomplish. Later, the formation built on a movement verb acquires the sense of prediction: at this stage, the subject may be non-human and, if human subjects are involved, they lack control over a situation. During a posterior phase, an intentional-predictive future may develop into a general/simple future tense. Finally, other modal senses can be developed (e.g. the imperative) and the gram can be generalised in conditional apoduses and protases as a syntactic mood (Heine, Claudi & Hünemeyer 1991:172-175, Bybee, Perkins & Pagliuca 1994:265-269, 272-273, Hopper & Traugott 2003:69).

All futures that are derived from movement verbs *grosso modo* follow the scenario sketched above. However, future expressions that are based on the venitive predicate ‘come’ display certain additional properties. After the stage of an intentional meaning, ‘come’-futures typically develop the sense of an imminent future, expressing events that are just about to occur or that are on the verge of occurring (Heine, Claudi & Hünemeyer 1991:174, Bybee, Perkins & Pagliuca 1994:269, 271-273). The imminent (and later, proximate) future is thus understood as a stage between the allative (in this case, venitive) and intentional futures on the one hand and general (simple) future tenses on the other, somehow parallel to the stage of prediction. In contrast to the meaning of prediction, this usage emphasises the imminence of an activity and not the expectation (Bybee, Perkins & Pagliuca 1994:273; for a detailed analysis of the development of ‘come’-futures and their illustrations, see Bybee, Perkins & Pagliuca 1994:271-273).

The movement path for ‘come’-futures may be represented in the following – approximated and figurative – manner:

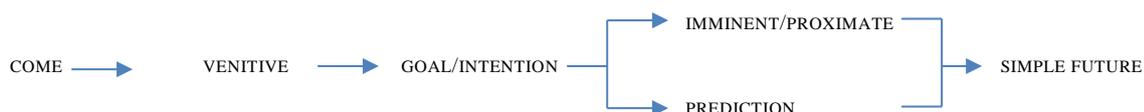


Figure 1.22: A model of the venitive future path

*Future perfect path*

The future perfect path is a cline that explains the acquisition of various non-perfectal meanings by a gram whose primary value is that of a future perfect (future anteriority). As already mentioned in the section dedicated to the anterior cline, original resultative proper formations (such as the English locution *it is done*) can be located in a future time frame where they accordingly acquire the value of a future resultative (*it will be done*) and, later, future perfect (*I will have done*). I have also mentioned that in some languages such future perfects may, additionally, evolve into simple futures with no hint of a perfectal sense. The first part of this process (which represents the change from a future resultative into a future perfect) is highly common and can be illustrated by multiple examples in a broad spectrum of languages. The vast majority of future perfects correspond to analogous present perfect formations – arisen from present resultatives – with the difference being that their time frame is the future. The other portion of the development, which leads from a future perfect into a simple future, is less frequent, although it can be observed in several linguistic families. The phenomenon whereby future perfects gradually acquire simple future values with no traces of resultativity or perfectal undertones may be illustrated by the evolution of the imperfective future in Polish *będzie pisał* ‘He will write’. This construction historically derives from a future perfect locution with the sense of ‘he will have written’. However, nowadays, any taxis connotations, originally available and still documented in Old Polish, have entirely been lost. In Modern Polish, this formation introduces simple or durative future activities and situations with no perfectal shade of meaning (Długosz-Kurczabowa & Dubisz 2003:310). An analogous development can be illustrated by some future perfects in Latin where certain verbs in the future perfect morphology denote simple future actions with no perfectal senses: *meminero* ‘I will remember’ or *odero* ‘I will hate’ (Zawadzki 2003:322-333).<sup>61</sup>

In addition to a common development of future resultatives into future perfects and, subsequently, simple futures, one may identify another diachronic tendency related to the category of future perfects. Future perfects quite frequently provide senses related to the ideas of certainty and inevitability on the one hand, and immediacy and immanency, on the other. In other words, future perfects offer meaning extensions which indicate that a given future event is certain, inevitable, proximate and imminent with no perfectal undertones at all. Additionally, in some languages, grams that typically function as future perfects may also refer to activities that are almost accomplished (‘almost’-perfect), that have happened in an imaginary world (false perfect) or that must certainly have happened (present perfect of certainty). In all such cases, the gram does not refer to a future time sphere but expresses a present situation portraying it as accomplished. A good example of all these values is the Spanish future perfect *habrá hecho* ‘he will have done’. In the function of a false perfect, it portrays an activity as having already materialised in an imaginary world, contrasting with the situation in the real world (*Ya habramos muerto* ‘We are already dead (lit. We will have been dead?’)). Additionally, this construction may denote events that must certainly have

<sup>61</sup> Examples of the use of original future perfects as simple futures may be found in Russian (Andersen 2006), Vilamovicean (Andrason 2010d:7), as well as in various Semitic languages (for instance, Classical Hebrew, Classical Arabic and Akkadian; cf. Andrason 2011a, 2011c, 2012b, 2013a, 2013d).

occurred given the current state of affairs (*Habr  llegado hace unos minutos* ‘He must have arrived (lit. He will have arrived some minutes ago’). On such occasions, the future perfect gram introduces events that are believed to have occurred already. In both cases, a future perfect gram does not refer to a future time sphere but encodes an event that is anterior to the reference time which, in this case, is the present. The property of future perfect constructions to refer to anterior events (sometimes with evidential or epistemic nuances) is crosslinguistically well-attested, and may be found not only in Spanish but also in French, Romanian, Icelandic and Vilamovicean (cf. Niculescu 2011:438-439, Andrason 2013c and 2013d).

All of this means that conceptual semantic extensions of resultative formations located in a future time frame – and, hence, their historical developments – follow three closely related directions. First, there is a clear path leading from future resultativity to the value of a simple future tense, through the stage of a future perfect. Second, one can identify a trajectory relating future resultatives and, especially, future perfects to the senses of future certainty, inevitability, proximity and imminence. Third, future perfects can refer to anterior events, being used as ‘almost’-perfects, false perfects and present perfects of (evidential) certainty.

The three evolutionary sub-clines, which determine the grammatical life of future resultative constructions, seem to be related, because they share the stage of a future perfect from which they bifurcate into two more specific semantic domains. One should note that determined values related to the concept of certainty and inevitability may also be prompted by the meaning of the lexical input – typically modal – from which the form emerged. Nevertheless, although in some cases the modal sense of certainty and its extensions may indeed be linked to the auxiliary verb that was used in the original periphrasis from which a given future perfect derived (cf. the modal origin of the Spanish future and hence its perfect variety: *cantare habeo* ‘I have to sing’ > *cantar * ‘I will sing’), there are various cases where a future perfect (or at a posterior developmental stage, a simple future) with the senses of certainty and/or inevitability is the successor of a non-modal expression. Two formations in Biblical Hebrew, i.e. the *qatal* and the *weqatal*, constitute some of the most evident cases (see Andrason 2011c, 2012e, 2013a and 2013e).

This entire development – henceforth referred to as a ‘future perfect path’ – may visually be schematised as follows (cf. Andrason 2013c and 2013d):

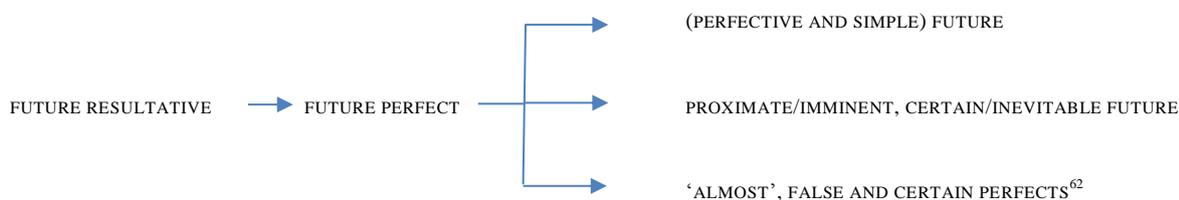


Figure 1.23: Future perfect path

<sup>62</sup> As has been explained, this sub-type of domains may also constitute a more original stage (comparable to ‘he has to have this done’) from which the genuine future perfect sense emerged (he will have done this).

A peculiar variation of the future perfect path is a future-perfect-in-the-past cline. This evolutionary pattern is highly similar to the future perfect path, which was discussed previously, with the difference that, this time, the future perfect expression is additionally located in a past time frame. Typically, such constructions evolve into past conditionals. Nevertheless, in various languages, past conditionals not only express several modal meanings (e.g. unreal counterfactuality), but also function as future perfects in the past (what corresponds to the sense of their historical inputs). Thus, in accordance with future perfects, they may indicate the idea of certainty, unavoidability, proximity and imminence of the completion of posterior events, observed, however, from a past perspective.

While future resultative constructions and future perfects are equivalent constructions (and semantic domains) to present resultatives and present perfects, on the one hand, and to past resultatives and pluperfects, on the other – the only difference consists of the fact that now the original resultative expression is located in a future temporal sphere and not in a present or past time frame – past conditionals are counterparts of future perfects “relocated” in a past temporal sphere. Thus, what originally distinguishes past conditionals from future perfects is the following: the idea of prospective resultativity and/or anteriority is now situated in the past. Put differently, the “relocation” of future perfect formations in a past time frame delivers, in some languages, future-perfect-in-the-past constructions which later evolve into past conditionals. Although this sounds like cognitive brain-breaking or a complete paradox, this conceptual construct constitutes, in fact, a common practice in deriving exemplary past conditionals. Indeed, if we analyse the morphological or morphosyntactic shape of past conditionals in various languages, these constructions commonly reflect original combinations of future, perfect and past morphemes or analytical expressions: they are initially future-perfect-in-the-past categories. As a result, there is a clear “genetic” link between future perfects (prospective perfects in non-past) and past conditionals (prospective perfects in past).

The Spanish past conditional *habría escrito* ‘he would have written’ can be a good illustration of this phenomenon. The Spanish formation reproduces the morphological pattern of the future perfect: *habrá escrito* ‘he will have written’. However, in the past conditional locution, the auxiliary verb *haber* ‘have’ stands in the conditional tense (*habría*) instead of being employed in the simple future (*habrá*). The conditional itself (i.e. the form *habría*) is a historical successor of the original future-in-the-past periphrasis – a “past” variety of the simple future (i.e. *habrá*). In other words, the conditional *habría* comes from the Latin future-in-the-past periphrasis *habere* (infinitive) + *habebam* (imperfective past; lit. Lat. ‘I had to have’ > Sp. ‘I would have’), while the future *habrá* reflects the Latin sequence *habere* (infinitive) + *habeo* (present; lit. Lat. ‘I have to have’ > Sp. ‘I will have’). As a result, the past conditional formation originally offered the following *verbatim* value: ‘he had (*habebam*) to have (*habere*) + participle (in our case, ‘he had to have written’; cf. Hopper & Traugott 2003:31, 52-55). A comparable relation between past conditionals and future perfects may be detected in Germanic languages. For example, the English, Icelandic and Swedish past conditionals (*he would have written*, *hann myndi hafa skrifað* and *hann skulle ha skrivit*, respectively) are all past varieties of the future perfect expressions (*he will have written*, *hann mun hafa skrifað* and *han ska ha skrivit*) – in all of them the first auxiliary stands in the past

tense: *would*, *myndi* and *skulle*. All of this signifies that if future perfect constructions are situated in a past time frame (this may be achieved overtly or covertly), they regularly evolve into past conditionals.

This future-perfect-in-the-past origin of past conditionals may commonly be perceived in the polysemy of past conditional constructions, which is even offered at highly advanced developmental stages. To be precise, besides expressing various shades of the unreal counterfactual meaning, so characteristic of prototypical (or well-evolved) past conditionals (cf. next section), past conditionals may also provide senses that are closer to the original sense of the input locution from which they have emerged. First, some past conditionals may introduce events that are prospective, from a past viewpoint, but anterior to other prospective (again from the past perspective) activities: this is a prototypical future-perfect-in-the-past value. In other uses, they may also express the idea of past prospective certainty and unavoidability as well as the sense of proximity and imminence of posterior events, once more observed from a past perspective. For example, the past conditional in French (a diachronic successor of an earlier future-perfect-in-the-past expression) is used as a future perfect in the past (*future anterieur du passé*; Grevisse 1975:733): it indicates that an event – viewed from the standpoint of the past – would be accomplished at a certain posterior point of time or it can denote anteriority of an event with respect to another action that was going to occur. Furthermore, the construction can substitute the periphrasis with the verb *devoir* ‘it must have been/was necessary’ and expresses the certainty (either prospective or already accomplished; cf. the value of a pluperfect of certainty), inevitability and imminence of a given prospective activity with no shadow of doubt, eventuality and condition as with properly conditional functions (Grevisse 1975:733-734).<sup>63</sup> The values of past prospective certainty, inevitability, proximity or imminence may be also illustrated by prototypical past conditionals in Spanish (*habría hecho*) and Polish (*byłby zrobił*).<sup>64</sup> In all such cases, the idea of doubt or improbability is not involved – the two formations introduce prospective events viewed from a past perspective and perceived as certain or inevitable. Additionally, the two constructions may denote events that had almost occurred or that had certainly occurred (the force of a pluperfect of certainty).<sup>65</sup> It is important to emphasise that some past conditionals (or future perfects located in a past time frame) may encode events that are anterior to the reference time, which in these cases is the past (cf. Niculescu 2011:438-439). In this manner, past conditionals and future perfects display similar behaviour: besides their prototypical use as expressions of prospective anteriority (either from a present (future perfect) or past perspective (past conditional)), they are able to express the idea of non-prospective anteriority, referring to events that are prior to a given reference time (again, either present or past).

<sup>63</sup> In accordance with the typological tendency, the modal unreal counterfactual use of the past conditional in French corresponds to a later meaning extension (Grevisse 1975:734).

<sup>64</sup> The Polish formation is a ‘surcomposé’ variety of the present conditional *napisalby* ‘he would write’, which, in turn, is a successor of an analytical construction consisting of the verb *byti* ‘to be’ in the Aorist tense (which replaced the earlier optative form *bimь*) and the participle of a meaning verb, e.g. *nesłъ byxъ* > *niósłbym* (cf. Rosenkranz 1955:131, Lunt 1974:98-99, Schmalstieg 1983:156-158 and Nandris 1988:156-157). It should be noted that the above-mentioned gram is rarely used in modern Polish.

<sup>65</sup> Equally possible is the use of the formation as a false-pluperfect.

*Futures and real and unreal counterfactuality*

The discussion above indicates that futures (or morphologies that usually convey the sense of futurity) are dynamically (both conceptually and historically) linked to present (real) and past (unreal) conditionals. As far as present or real conditional categories are concerned, such formations commonly derive from grams developing along a future path whose original reference time is not the present (as is the case with locutions that evolve into future tenses) but the past. This means that a future path may originate in agentive prospective periphrases located in the past temporal frame (e.g. *j'allais faire* vs. *je vais faire* in French). During the development of such expressions, the original agent-oriented modal meaning is extended into the value of a future-in-the-past or prospective past, and subsequently into a modal sense of real counterfactual possibility, probability or eventuality, thus yielding prototypical conditional formations (Bybee, Perkins & Pagliuca 1994:235). This evolution may be illustrated by the Spanish conditional *escribiría* 'I would write' that derives from a Latin agent-oriented expression *scribere habebam* lit. 'I had to write' (cf. the future *escribirá* 'I will write' that derives from the same periphrasis, but with the auxiliary verb in the present tense: *scribere habeo* 'I have to write'). The English conditional locution *I would do* shows a comparable origin, having its roots in an older agent-oriented desiderative periphrasis built on the Germanic verb *\*wiljan* 'to want' employed in the past tense (cf. the Icelandic *ég vildi skrifa* 'I wanted to write'). The future *I will write* originated in an equivalent expression but uses the verb *\*wiljan* in the present (cf. the Icelandic *Ég vil skrifa* 'I want to write').

Just as futures are related to conditionals (the former derive from present agent-oriented expressions, while the latter stem from analogous past constructions), future perfects are connected to past conditionals. This latter type of relationship was explained in detail in the previous section. It has been noted that, from a typological perspective, both future perfects and past conditionals are combinations (at least from a diachronic perspective) of future and perfectal morphologies. However, in addition, past conditionals employ a morphological marking that is typical of past categories. More specifically, while perfect futures tend to derive from agent-oriented present perfect locutions, past conditionals quite regularly stem from agent-oriented past perfect formations. In various languages, the two categories employ similar structures which are differentiated solely by the fact that the former uses an inflected verb (auxiliary) in the present tense, while the other selects a verb in the past tense. As I have explained previously, the Spanish future perfect *habrá escrito* 'I will have written' reflects the Latin sequence *habere habeo scriptum* (lit. 'I have to have written' > Sp. 'I will have written'). The Spanish past conditional *habría escrito* 'he would have written' differs from the future perfect in the fact that it employs additional morphosyntactic features that are used to derive a past tense. Thus, the Spanish past conditional copies the structure of the future perfect with the distinction that in the past conditional locution, the verb *haber* 'have' stands in the conditional tense (*habría*) instead of being employed in the simple future (*habrá*). As has already been demonstrated, the conditional form itself (*habría*) diachronically derives from a Latin future-in-the-past expression or, in other words, a "past" variety of the simple future (*habrá*). This means that the past conditional form *habría escrito* is a descent of the Latin agent-oriented past perfect locution *habere habebam scriptum* (lit.

Lat. ‘I had to have written’; cf. Hopper & Traugott 2003:31 and 52-55).<sup>66</sup> The evolution of conditionals (‘a conditional path’) may be outlined in the following manner (one should observe that the latter development is equivalent to the future-perfect-in-the past cline discussed in the previous section):

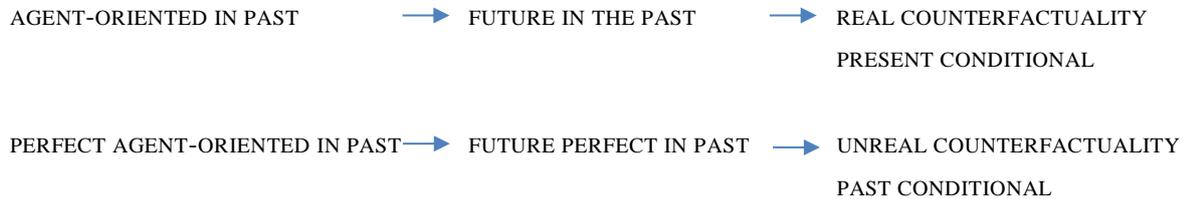


Figure 1.24: Conditional paths

### 1.2.3.5 Modal contamination path

In the discussion of the imperfective path, it has been observed that certain imperfectives or present tenses may, at highly advanced evolutionary stages, be gradually reinterpreted as subjunctives and/or futures. This happens due to two phenomena: the possibility of the use of imperfective-path grams in modal and future contexts and the reduction of the scope of their more original uses, such as imperfective, present and, in general, indicative. To be exact, when new imperfective and present formations are shaped, the functions which previously were typical of older imperfective and present grams may be abandoned. The remaining values reflect non-invaded fragments of the imperfective path which usually correspond to the domain of future and modal uses (Bybee, Perkins & Pagliuca 1994 and Haspelmath 1998:41-45).

The conversion of old presents into modal categories corresponds to a wider process whereby originally non-explicitly modal formations acquire modal values as a result of modal contamination. During this phenomenon, indicative locutions, due to their common use in semantically, syntactically or pragmatically marked modal contexts may develop into properly modal categories. This means that besides being prompted by explicit modal inputs (especially by periphrases with the value of ability, obligation, desire, movement and predestination; Bybee, Perkins & Pagliuca 1994:240), some modal values may also be “genetically external” to the verbal form itself. In such cases, they have their roots in clearly modal contextual or pragmatic factors, e.g. overt lexemes or particles and determined syntactic contexts (Bybee, Perkins & Pagliuca 1994:26, 253-326). To put it differently, due to their regular use in modal environments, non-modal formations gradually assume the meaning of the context as their own to the degree where initially indicative locutions become entirely identified with a modal value generated by that context. This process has been referred to as a ‘modal contamination path’ or ‘modalisation by contamination’ (cf. Andrason 2010a:6-8, 2013a). The phenomenon corresponds to the concept of ‘conventionalisation of implicature’ (Dahl 1985:11 and Bybee, Perkins & Pagliuca 1994:25-26 and 296) and

<sup>66</sup> Comparable developments may be found in English (*I would have done*), Icelandic and other Scandinavian languages (*Ég mundi hafa gert*) as well as in Polish (*byłby napisał*).

‘context-induced reinterpretation’ (Heine, Claudi & Hünemeyer 1991:71-72), as well as to the notion of ‘semantisation’ (Hopper & Traugott 2003:82).<sup>67</sup>

As already explained, the process of modal contamination affects formations that are originally indicative, i.e. non-overtly modal (stage 1). However, in a great many languages, indicatives may be employed in certain modal contexts. Due to repeated use of such expressions in modal environments, original indicatives progressively acquire a modal tone of the grammatical milieu in which they appear. Put differently, an indicative gram provides certain modal values or uses associated with the context in which it is used (stage 2: modally coloured indicative, i.e. an indicative that can offer modal readings in overtly modal contexts). Subsequently, once such modal uses have been generalised and regularised and a non-modal value lost, the old indicative gram becomes fully identified with the modal sense which was originally imposed by contextual factors. During this phase, non-modal readings of the construction are no longer available and the gram is identified with the category of mood (stage 3: indicative is converted into a mood with no indicative uses; Dahl 1985:11, Bybee, Perkins & Pagliuca 1994:25-26 and Hopper & Traugott 2003:82). This identification may stem from the elimination of indicative uses, which itself may be encouraged by the development of novel grams on the original non-modal path on which the modalised gram has begun its grammatical life. For instance, in the case of grams travelling along the imperfective cline, the generalisation of old presents as modals is correlated with the creation and expansion of new progressive, imperfective and/or present grams. During the ultimate phase of evolution, a modally contaminated gram – now employed as a legitimate mood – may furthermore be “emancipated” from the explicitly modal milieu that triggered a given modal sense, now indissoluble from the gram itself. This means that the fully modalised construction can be employed in a modally neutral – i.e. non-overt and non-explicit – environment, preserving the modal meaning, which now constitutes a prototypical portion of its semantic potential (stage 4: contextual mood is freed from the context and may be used independently; Bybee, Perkins & Pagliuca 1994:296). This entire developmental scenario is schematised below.

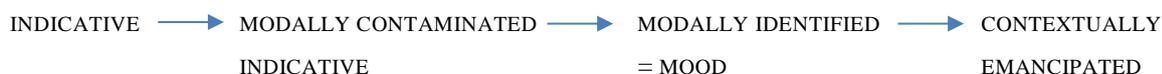


Figure 1.25: Modal contamination path

It is highly important to note that on this chart, contrary to the procedure adopted in all the other clines studied previously, each stage represents a gram-type and not new atomic senses. Therefore, the path portrays the evolution of grams as discrete categories that jump from one state to another. Of course, in accordance with the fuzzy nature of linguistic change and language in general, the transformation is gradual so that the posited stages are idealisations.

<sup>67</sup> It is evident that due to the contextual nature of grammaticalisation and any meaning extension, all the paths can be viewed as contextual contaminations. What distinguishes the modal contamination cline is the fact that the acquired value (in this case, various shades of modality) are entirely externally conditioned, failing to be prompted by the meaning offered by the input locution.

One should also observe that in contrast to the other modal paths, the modal contamination cline is an all-inclusive developmental model which can be applied to various types of modal meaning extensions and semantic progressions into the area of modality. As a result, the representation of the trajectory of modal contamination, as posited in this study, differs qualitatively from the genuine modal paths and from the imperfective, resultative and future clines.

The contexts that typically induce the process of modal contamination – i.e. milieus which introduce a modal undertone to the integral semantic load of originally indicative locutions – are conditional phrases, directive (e.g. imperative or prohibitive) environments, subordinate (final or temporal) clauses, as well clauses introduced by predicates such as *want*, *wish* and *order* (cf. Bybee, Perkins & Pagliuca 1994:217-218, 235).

An exemplary case of the modal contamination cline may be found in the Romance family. The Classical Latin construction *amaveram* offered a standard pluperfect (past perfect) meaning ‘I had loved’. However, in Modern Spanish, because of a regular use of the gram in conditional periods and in various subordinate clauses, the Latin pluperfect has developed an evident, almost exclusive modal value. Nowadays, under the form of *amara*, it is classified as a subjunctive mood corresponding to English expressions such as ‘(that/if/so that...) I may/would love’. Nevertheless, in certain literary texts, one may still encounter – albeit very infrequently – the original pluperfect use of the *amara* gram. Additionally, the formation shows traces of emancipation: in some rare instances, it is used in main clauses, conserving the modal meaning developed in subordinate and dependent milieus (cf. Andrason 2011c:7).

In all types of modal contamination, it is possible to observe a tendency to a modal reinterpretation of indicative grams in accordance with their temporal value. That is, during modal contamination, present indicatives and future tenses most commonly acquire senses of real factual modality which is usually grammaticalised under the label and form of a present subjunctive. Past tenses tend to generate the value of counterfactual real modality. Lastly, pluperfects usually yield modal extensions of counterfactual unreal modality generating the category of a past subjunctive. This development may be illustrated by the modalisation of the French present (*je fais*), imperfective past (*je faisais*) and pluperfect (*j’avais fait*) in conditional protases where the three constructions act as a real factual mood, real counterfactual mood and unreal counterfactual mood, respectively (Bybee, Perkins & Pagliuca 1994:235). In addition, one should bear in mind that since future grams are closely related to the concept of modality, they almost naturally lend themselves to modal contamination. This may, in turn, strengthen the modal component in the semantics of future grams.

To conclude the discussion of the process of modal contamination, the formation of imperatives from non-directive inputs must be explained. As will be seen in chapter 6, this development is quite important in the verbal system of Basse Mandinka. Generally, various imperatives arise by following the evolutionary scenarios of a genuine modal path. Accordingly, they constitute more advanced stages on a given modal cline, most commonly the obligation and desire-movement clines. However, imperatives may also emerge due to modal contamination. In fact, it has already been noted that one of the most typical pragmatic

contexts where modal contamination operates is the directive environment of orders and stipulations. One such non-modal source of imperatives is the category of infinitives or similar formations (verbal nouns or verbal stems/bases used as infinitives). To be exact, according to typological studies, infinitives (either of more verbal or more nominal character) – which are originally non-modal and non-command forms – are very frequently employed with a modal (deontic) force in semantically, syntactically or pragmatically directive contexts. In fact, the use of infinitive forms to express directive-deontic values (orders, commands, obligations, desires and prescriptions) can be viewed as widespread among languages (Aikhenvald 2010:55-56, 281-288, 351). Due to this compatibility with and customary occurrence in directive environments, infinitives can develop into properly modal categories equivalent to imperatives and prohibitives (Aikhenvald 2010:351). In this manner, the acquisition and, later, generalisation of a deontic force by infinitive input forms derives from the process of modal contamination, regularly passing through the four main phases. As was addressed at the beginning of this section, this evolution goes from the phase where a non-modal source can be used in a modal environment, to the phase where the gram is fully “emancipated” (and employed outside its original modal milieu, yet preserving the modal force), through the phases of a modally coloured indicative and a mood with minor or no indicative uses. It should be noted that the use of infinitives in a directive function is especially common when the form is addressed to the second person singular or plural (imperative proper), in a prohibitive sense (negative imperative) and in cases where generic instructions and prescriptions are to be conveyed (Aikhenvald 2010:281). On the contrary, instances where an infinitive formation would be directed to the first and third person seem to be less frequent.

### 1.3 Research strategy

Having presented the methodology that underlies this research, I will now explain in detail the strategy with which I plan to reach the objective of my study. As has previously been mentioned, the principal goal of this dissertation is to model the Basse Mandinka TTAM verbal organisation as an exemplary real-world complex system.<sup>68</sup> According to my hypothesis, given that language is a real-world system and that real-world systems are demonstrably prototypical complex bodies, a language, such as Basse Mandinka, and all its modules – including, the TTAM organisation – should also be analysed by using complexity models.

This goal entails pursuing the following more specific – gradually more macroscopic and systematic – objectives: (a) a description of the entire semantic potential of all the Basse Mandinka verbal grams; (b) a representation of the synchronic inventories of senses of each Basse Mandinka verbal construction as a coherent phenomenon, i.e. as a kinetic qualitative map ordered by means of grammaticalisation templates or paths; (c) an introduction of the information concerning the prototypicality of the map and the development of a bi-dimensional representation of the meaning as a wave; (d) a construction of streams that

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<sup>68</sup> By doing so, this new representation aims to meet the requirements of the programme of linguistic complexity formulated by Massip-Bonet (2013), Bastardas-Boada 2013a, 2013b and Munné (2013; cf. section 1.2.2).

contain gram-waves organised along similar evolutionary templates; and (e) a modelling of the entire Basse Mandinka verbal organisation into a system of currents. This system – visualised as an ocean – should be demonstrated to have characteristics typical to complex bodies: it is open, situated, fuzzy, full of unstable individuals, highly cardinal, uncontrollable, dynamic, metastable, past dependant, nonlinear, sensitive to initial conditions, deterministically chaotic in some regions, non-additive, non-resultant, but rather, containing emergent properties, structurally intricate, self-organising and characterised by top-down causation in addition to bottom-up causation.

In this dissertation, a total of seventeen affirmative grams will be analysed: KAD (2.1), NomKAD (2.2), NomLA (2.3), KA (2.4), SI (2.5, 4.4), TA (3.1), YE<sub>1</sub> (3.2), NAATA (3.3), RID (3.4), BANTA (3.5), NOO (4.1), ÑANTA (4.2), MAA (4.3), LA (5.1), NAA LA (5.2), B-IMPR (6.1) and YE<sub>2</sub> (6.2).<sup>69</sup> As will be evident from the discussion in subsequent chapters, these constructions jointly form the Basse Mandinka verbal system. However, the grammaticalisation of the above-mentioned formations is not identical – some of them are highly advanced on their grammaticalisation path, whereas others are less advanced.

All these grams – with the exception of the TA and B-IMPR forms – are composed of two or more separate elements: independent lexical items or free grammatical morphemes (e.g. base, postpositions, auxiliaries, copulas, verbal nouns, etc.). Apart from the two grams mentioned above, all of these constructions can also be synchronically and/or diachronically viewed as complex predicates, i.e. multipredicational, but monoclausal structures (regarding the definition of complex predicates as multipredicational, monoclausal complexes, consult Amber, Baker & Harvey 2014; see also Brinton 2011). In a narrow view, complex predicates consist of a light verb and a verbal, nominal or adjectival element that frequently expresses a type of action or situation (Brinton 2011:559). However, synchronic light verbs, such as copulas or auxiliaries, may themselves derive from verbal and non-verbal sources. In this dissertation, any verbal gram that is synchronically analysable as a consisting of a predicator (copula, auxiliary) of any origin (be it nominal, adpositional, or verbal) and a verbal or nominal element specifying the activity performed by the subject or its condition (e.g. base, verbal noun or participle) will be understood as a complex predicate.

Although a complex predicate is originally a small clause built of independent components, which jointly contribute to the initial periphrasis, as the grammaticalisation process advances, they all gradually function as holistic units. The composition acquires new semantic properties related to the fact that the components act together as an individual. The meanings of complex predicates exhibited at more advanced stages of their semantic evolution are thus not straightforwardly derivable from the compositional analysis of the parts that form them. However, they certainly can be traced to such input locutions and cognitively related to them, as the individualised grams constitute further evolutionary manifestations of original, periphrastic and semantically transparent chains. In this way,

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<sup>69</sup> This means that negative grams and negative predicative markers (e.g. TE, BUKA, MAD or KANA) will not be studied. Only in some instances, certain negative constructions will be briefly presented. The reason for leaving the negative forms outside the discussion mainly stems from the restriction in length. The analysis of negative grams would render this dissertation (which is already very long) unacceptable in length. I am aware that the restriction of the study to affirmative formations constitutes a limitation, especially a far as the systemic perspective of the verbal ocean is concerned (cf. Afterword).

complex predicates are sub-types of grams – they are grams that, synchronically, have analytical (in particular, multipredicational) structure. Nevertheless, since most grams derive from original periphrases in which various separated elements (including predicates) were used, and only later agglutinate and fuse into an indivisible whole, from a dynamic perspective, most verbal formations can be analysed as complex predicates. Put simply, what is a suffix or prefix now, most likely was an independent word (a verbal or non-verbal predicate, a phrase or a clause) at earlier evolutionary times (Brinton 2011; for further discussion on complex predicates, see Alsina, Bresnan & Sells 1996, Alsina 1997, Müller 2002 and Amberber, Baker & Harvey 2014).<sup>70</sup> Accordingly, nearly all verbal grams can dynamically be viewed as complex predicates, including the TA gram.<sup>71</sup>

In Mandinka – as well as in Manding and Mande – the complexity of predicative structures surfaces in the fact that almost all verbal constructions contain a separate predicative marker and a lexical verb (a base or a verbal noun). Predicative markers in Mande and Manding are auxiliary-like components that appear in the position after the subject of the clause and before the lexical verb (preceded, or not, by its object) – this means that they occupy the second position.<sup>72</sup> They constitute a morphologically simple set of invariable particles (Bearth 2008). The lexical verbs are viewed in such constructions as employed non-finitely (Kastenholz 2003, 2006, Nikitina 2008a:197). It is these auxiliary-like elements that are “responsible for finiteness and can be characterised as instantiations of a functional category INFL [inflected]” (Nikitina 2008a:199). In fact, in some languages, e.g. in Koyaga, lexical verbs can never be employed in a finite manner, exhibiting no finite form at all – an unbound predicative marker is mandatory in all contexts and constructions (Creissels 2005:41). In most Manding languages, the finite verb only appears in the perfect(ive)/past grams that are cognate to the Basse Mandinka TA locution (see above in this section), as this form is derived by means of suffixation (Nikitina 2008a:198).<sup>73</sup>

The type of linguistic systems that exhibits such a use of predicative markers is classified as a split-predicate syntax (Kastenholz 1987, Bearth 1995, Zima 2006, Tröbs 2010) and/or “distributed predicative syntax” (Kastenholz 2006). Split-predicate syntax signifies that the temporal, taxis, aspectual and mood properties of a lexical verb in a given clause or sentence are encoded not by the verb itself but by a separate and categorially distinct element. The degree of this split-predicate-ness ranges in Mande from total compliance to this

<sup>70</sup> Prototypical (monoclausal) complex predicates may themselves derive from multiclausal constructions, merely corresponding to their more advanced grammaticalisation stages (cf. Fischer 2007:210-248).

<sup>71</sup> Although the B-IMPR form could theoretically have derived from a more complex analytical chain, this seems too speculative and cannot be supported by any evidence. However, the origin of this gram may be non-finite, as is the case with most of the Basse Mandinka grams, which typically descend from nominal constructions (for details, see section 6.1).

<sup>72</sup> On the word order in Mande, see Dumestre (1989a), Kastenholz (2003), Creissels (2005), Creissels et al. (2008), Nikitina (2009) and (2011).

<sup>73</sup> As will be evident from the subsequent discussion, the origin of predicative markers in Mande/Manding is quite heterogeneous (on verbal origin, see for instance, Claudi & Mendel 1991; Claudi 1993, 1994, Creissels 1997b, Dumestre 1999; on nominal and adpositional origin consult for example Heine & Reh 1984, Bearth 1995, Kastenholz 2003, Tröbs 2009, 2010, Babaev 2011; cf. also Creissels 1997a). What is important is that such elements do not uniformly derive from (auxiliary) verbs (Bird and Kendall 1986, Bearth 1995, Kastenholz 2003). Even though Mande and Manding experienced a (partial or complete) loss of the category of finite verbs (cf. further below in this section), not all predicative markers had verbs as their sources (Bearth 1995, Kastenholz 2003, Nikitina 2008a:203, Tröbs 2010).

prototype (lexical verbs are never used finitely) to a partial compliance with it (in these split-predicate prominent languages most TTAM information is expressed by predicative marker although finite uses also exist; Kastenholz 2006).

Since the principle of “operator-second” is a stable rule of grammatical markers in Mande/Manding both presupposing a fixed order and admitting splitting and shifting of constituents, this type of syntax has also been classified as characteristic of “split and shift” languages (Bearth 2008). In addition, the patient-oriented nature of Mande and Manding leads scholars to postulate an ergative-like origin of certain verbal constructions (e.g. the perfective affirmative marker; Tröbs 2009:260-265, 2010; see also Creissels 1997a, 1997b, Vydrin 2011).<sup>74</sup>

The prominently split-predicate and/or split-ergative syntax is reconstructed for Proto-Mande, which also fits into the possible structure of Proto-Niger-Congo (Gensler 1994, Nikitina 2008b, 2008a:199; see also Tröbs 2010). Within this proposal, the split predicate nature of Mande would have resulted from the elimination or reduction of the class of finite verbs (Nikitina 2008a:199). This phenomenon still seems to operate, as Mande and Manding abound in novel analytic (periphrastic) TTAM locutions where the lexical verbs are employed in nominal forms (verbal noun), being introduced by predicative markers (Bearth 1995, Nikitina 2008a:199, 215-216). These phenomena may explain certain peculiar properties of the Mande languages, such as the absence of double object constructions, the lack of distinction between object pronouns and possessive pronouns, the reanalysis of some verbs as nouns, the transfer of certain nominal properties to the syntax of verbs and their structural parallelism, and finally the difficulty in distinguishing verbs from nouns (Nikitina 2008a:201-202, 211, 214, 216-220, 223-224; cf. also Heine & Reh 1984:212-214, Claudi & Mendel 1991, Claudi 1994:219-220).<sup>75</sup>

It is evident that the final – albeit not unique – goal of this research consists in offering an innovative procedure of modelling the TTAM verbal system as a complex body. As mentioned in the section dedicated to the methodological discussion, the approach that will be used in this study is based on grammaticalisation and cognitive frameworks. These frameworks have successfully demonstrated how grammaticalisation rules can be employed so that the dynamics and fuzziness (probably the most relevant properties of complexity) may be preserved in the synchronic analysis of verbal grams (cf. Heine, Claudi & Hünemeyer 1991, Heine 1997, Dahl 2000b, Croft 2001, 2003, Bybee & Hopper 2001, Taylor 2002, Tyler & Evans 2003, Croft & Cruse 2004, Haspelmath 2003, Evans & Green 2006, Gries & Stefanowitsch 2006, Geeraerts & Cuyckens 2007, Ariel 2008, Nikiforidou 2009, Brisard et al. 2009, Geeraerts 2010, Bybee 2010, Van der Auwera & Gast 2011, De Haan 2011).

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<sup>74</sup> The extent of the application of split-predicate syntax or the operator-second rule is so great that even the encoding of voice is founded on it failing to be derived morphologically or based on a distinct word order (Bearth 2008).

<sup>75</sup> Observe that Rowlands (1959:145-146) views main verbs as nouns (he understands them as verb-noun stems), Kastenholz (1979:87) treats verbs as verbal nouns, and Manessy (1962) classifies verbs as “radicaux bivalents” because they can be employed both as verbs and nouns. Nikitina (2008a) argues that grammaticalisation of constructions formed with verbal nouns is responsible for further mixing of nominal and verbal syntactic patterns or behaviours in the Mande verb, being responsible for a set of its nominal characteristics. One would deal with a typologically frequent categorial reanalysis of an original noun phrase as a verb phrase headed by a non-finite verb.

However, this dissertation is also aimed to advance the line of modelling proposed in classical cognitive and grammaticalisation studies: it will demonstrate how the modelling of the entire TTAM system – viewed as a multilevel interaction of vectors, waves and streams – can be developed by expanding the above-mentioned purely linguistic frameworks by incorporating insights from complexity theory (Auyang 1998a, Schneider & Sagan 2006, Kauffmann 2000, Lewin 2000, Prigogine 2009, Hofkirchner & Schafranek 2011, Hooker 2011a, Cilliers et al. 2013).

In order to accomplish the objectives of this study, the research will be organised as follows: first, in each section dedicated separately to one Basse Mandinka gram, I will provide examples in which various values conveyed by that construction will be overtly demonstrated (see section 1.3.1, below). Subsequently, the exact range of senses expressed by the formation will be determined and its semantic potential specified (section 1.3.2). After that, the semantic potential will be unified into a consistent qualitative dynamic map. As has been explained before, the kinetic nature of the map stems from the fact that all its components will be related by linking mechanisms based upon universal dynamic (diachronic) templates or grammaticalisation paths posited by typological linguistics. Next, the map will include quantitative information concerning the prototypicality degree of every sense offered by the construction in question (section 1.3.3). This procedure will be reiterated for every gram. Subsequently, the dynamic maps of the grams that follow an analogous developmental template or path will be correlated and classified as successive waves on a given grammaticalisation stream – an evolutionary, crosslinguistically universal channel recursively employed in the language (section 1.3.4). Grams of the other streams will be dealt with in a similar vein. Finally, in the section dedicated to conclusions, the entire system will be explained as an intricate interaction of such maps, waves and streams – a complex body that stands in opposition to the structuralist ideals of simplicity, neatness and stasis (see section 1.3.5).

In this manner, the level of analysis and complexity of explanation typically associated with an empirical and analytical study (the description of senses and determination of the semantic potentials) will gradually be expanded to a more systematic and synthetic perspective (a unification of senses into a kinetic map, enhancement of a kinetic map into a wave, an amalgamation of waves into a stream, and finally a fusion of the streams into the ocean).

Below, I present the procedure of my research in a more detailed way.

### 1.3.1 Collecting and presenting senses

The first step will involve the presentation of senses which a given verbal gram conveys. This descriptive task will be based on examples extracted from an extensive database which I composed in the period ranging from 2010 to 2015. As has been explained previously, I carried out this original empirical study in Basse, Gambia. The study was undertaken to document the various grammatical and lexicographic aspects of the Basse Mandinka language. It was this study that enabled me to determine the properties of the Basse Mandinka variety, including the characteristics of its verbal system (cf. section 1.1 above).

Following a cognitive and usage-based view, the sense of a verbal gram will be taken to be an unambiguous piece of information conveyed by a form in a specific environment and classified with finite categorisation devices, viz. domains. I will, thus, start the analysis of the semantics of each gram by deconstructing its meaning into atomic senses, induced contextually and “measured” with universal – i.e. language-independent – semantic domains of intermediate granularity. This procedure, common in typological studies, will free the empirical examination from dependency on the analysed language and/or language of description (cf. section 1.2.2.1). For instance, in order to show that the TA form (cf. section 3.1) can express the idea of a past, an example in which this semantic domain is made overt by the adjacent entity (e.g. by an element that indicates the past time such as ‘yesterday’) will be provided:

- (1.1)        A        **naata**        kunuŋ  
               he        come-TA        yesterday  
               ‘He came yesterday’<sup>76</sup>

It should be noted that senses conveyed by the analysed verbal grams are not inferred from their English translations. The semantic potential of a construction does not result from how this form is translated in English. Certainly, in many cases, the English translations make a given sense easily accessible to the reader. In other instances, translations in other languages are provided (e.g. in Polish or Spanish) as the English rendering fails to profile the meaning

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<sup>76</sup> In the examples extracted from the database (the first line), the relevant verbal gram will be marked in bold. Glosses (the second line) will follow the Leipzig word-for-word principle and will approximate the words used in the English translations (the third line). Exclusively the gram in question will be glossed morphologically, usually in agreement with its name, e.g. the TA gram *naata* will be glossed as ‘come-TA’, the SI gram *si naa* as ‘SI come’, the LA gram *be naa la* as ‘NVP come LA’, etc. In other examples, verbal formations will be glossed to approximate their English counterparts. This procedure aims to facilitate recognition of the context in which a given gram is found. To be exact, since various verbal constructions and other lexical or grammatical elements that form the context in which the pertinent construction is embedded are highly polysemous, only the value that seems to be activated on that specific instance (rendered by an English equivalent) will be given.

It should be noted that verbal nouns will consistently be glossed by means of the English gerund, e.g. *saferoo* ‘writing’, even though their equivalence is only approximate. Furthermore, the elements *la* and *kaj* in the NomLA and NomKAD grams will be glossed by means of the words *at* and *on* if the two verbal constructions appear in examples not specifically dedicated to them. Accordingly, *M be domoroo la* will be glossed ‘I NVP eating at’ and *M be domoroo kaj* ‘I NVP eating on’. If the LA gram is not the object of study, the element *la* will be glossed ‘to’. In possessive expressions where *la* (or its phonetic variant *na*) is used, it will be glossed as ‘of’ (e.g. *ali la* ‘you of’ and *n na* ‘I of’; observe that if used with pronouns, these constructions correspond to possessive adjectives or pronouns in English). It should also be noted that various adpositions have a broad range of values and will be glossed in different ways depending on the example and their best English equivalents. For instance, *la* will be glossed as ‘with’, ‘to’ or ‘at’. The last alternative will especially be used in cases where it heads an object that in the English translation appears as a direct object. Before verbal bases, *la* will usually be glossed as ‘to’.

Additionally, the following abbreviations will be used: EXIS (stands for the element *ti* – an existential particle that accompanies certain markers or verbs with the meaning of ‘be’ or ‘become’, e.g. *mu* and *ke*); FOC (stands for the focus particle *le* or its phonetic variant *ne*); REFL (stands for reflexive pronouns *i*, *ì*, *n* and *ñ*); QUES (stands for the particles *bay* and *fo* that introduce yes-or-no questions, functioning in a manner similar to *est-ce que* in French); OBL (stands for the modal particle of obligation *fo*); NVP (stands for the non-verbal predicator *be*); NEG.NVP (stands for the negative non-verbal predicator *te*); PARTL (stands for the two particles that express polite or soft commands: *ko* and *bay*).

that is being discussed. However, overall, it is the semantic, syntactic or pragmatic context present in the Mandinka sentence that makes the postulated sense explicit, not its translation.

As a result, at this step, concrete contextual examples demonstrating that an analysed gram is explicitly compatible with certain semantic domains – and extracted from the database collected in Basse – will be introduced. All the examples reflect the linguistic capacity of ten Mandinka native speakers that were carefully selected for the purpose of this study. As explained in section 1.1.1, the chosen subjects preserve as much as possible of the linguistic and socio-ethnic non-uniformity, typical to Basse Mandinka, since they represent distinct age groups, different educational and professional strata, as well as various ethnic backgrounds.

### 1.3.2 Designing semantic potentials

The positive empirical data (i.e. concrete values collected in the examples provided by Mandinka native speakers), accompanied in certain cases by negative evidence with which the informants specify which semantic domains are incompatible with an analysed gram, should – by induction – enable me to design a complete set of all possible senses that a form can express. This will be referred to as ‘semantic potential’. Of course, this set is understood as complete within the adopted approximation, according to which the ten Mandinka native speakers are viewed as a representative sample of the Basse Mandinka community.

The presentation of a form’s meaning as semantic potential will assure egalitarian treatment of the empirical data, typical of usage-based theories, where the linguistic diversity – and not uniformity – is the focus. It will guarantee that all the empirical material is presented and respected. In fact, in this study, any sense will be acknowledged in the semantic potential of a form, even if it has been registered only once. Thus, both common and uncommon patterns will be represented. However, in order to render the semantic potential closer to reality – and avoid equalling the relevance of rare senses with the common ones – the parameter of prototypicality will be introduced. In this manner, the semantic potential will represent not only the variety of series of semantic domains (qualitative study) but will also indicate their typicality (quantitative study; for more on the issue of prototypicality, see next section 1.3.3). As a result, at this step, the semantic potential of each verbal gram in Basse Mandinka will be established (cf. the discussion of the theoretical framework in sections 1.2.2.2 and 1.2.2.3).

### 1.3.3 Constructing kinetic maps: vectors and waves

As mentioned at various points, although empirical observations of senses and their inductive generalisation into semantic potentials constitute the foundation of the linguistic enterprise, they are only the foreground of the very objective of linguistics – the discovery of laws and rules which reveal a (previously hidden) order of the language. This signifies that, at the next step, the synchronic potentials developed by means of empirical and inductive reasoning, must be explained.

Following the approach presented previously in section 1.2.2.2, I will adhere to the view defended by grammaticalisation and cognitive linguistics, whereby the total meaning of a form cannot be equalled by an invariant semantic domain. On the contrary, the meaning of a verbal gram will be understood as the form's entire semantic potential in which all the components are connected by certain cognitive linking mechanisms. In this study, the linkage will be based upon grammaticalisation paths. Thus, I defend the position whereby the meaning equals a set-theoretical summation of all individual senses that are activated in concrete empirical cases and that can be related by means of diachronic universals that specify how senses arise in language world-wide. By structuring a given semantic network in this way – i.e. by proposing the conceptual and diachronic linking of its components – it will be possible to represent the gram as a coherent phenomenon. The typological strength of such diachronic laws makes it possible that, even in cases where we lack direct diachronic evidence that could show how this polysemy has actually arisen, a plausible map can be proposed.

By adopting this procedure for the study of the Basse Mandinka verbal grams, I will arrange static and disordered semantic potentials into ordered vectored maps. Since the organisation of a map will follow a diachronic template, the ordered semantic potentials will receive a dynamic structure that corresponds to one of the common grammaticalisation paths: the imperfective path, the resultative path, the future path, the modal path and the modal contamination path. Once senses displayed by a given Basse Mandinka locution have been matched with a typologically plausible evolutionary scenario and, thus, this evolutionary cline employed as a binding mechanism (both conceptual and diachronic) with which the total meaning of each gram can be captured, the construction will be defined as a kinetic vector

Additionally, in accordance with principles uncovered in section 1.2.2.3, once the parameter of prototypicality is incorporated, some portions of the path covered by a gram will be defined as prototypical while others will be depicted as non-prototypical. In this way, the map will adopt the shape of a bi-dimensional wave developed due to the interaction of two parameters: one symbolised by the horizontal  $x$ -axis, which represents the range of the qualitative semantic potential of a gram structured along a given grammaticalisation cline and the other symbolised by the vertical  $y$ -axis, which ascribes to each sense-stage of the  $x$ -axis a determined degree of prototypicality.

It should be noted that for reasons that will be specified below, at most, only four values will be distinguished on the vertical  $y$ -axis of prototypicality: prototypical (P), semi-prototypical (SP), non-prototypical (NP) and void (i.e. not recorded; V). Of course this is a considerable rounding of the real state of affairs, which can be infinitely fine-grained and precise since prototypicality is primarily derived from and reflects numerical frequency or statistical data. However, this simplification is necessitated by the type of corpus on which this dissertation has been built. First of all, the corpus is extremely heterogeneous, as it includes fragments of dialogues, monologues, poems, songs, elicited sentences and translations. Second, as the corpus is oral, larger uninterrupted chunks (which would be the most suitable for statistical treatment) are rare – the bulk of the data corresponds to short fragments. Lastly, the principal aim of the database was to document grammatical variation –

emphasis was given to the discovery of all possible senses a given form could express. All of this makes the present corpus less suitable for a statistical analysis and for correlating the values of the y-axis exclusively with frequency. On the contrary, the determination of the degree of prototypicality had to be achieved by a combination of three factors: (a) the statistical prototypicality in the corpus (even though the corpus is heterogeneous, oral and disrupted, it still sheds some light on prototypicality); (b) the author's experience during the time of living in Basse (i.e. being exposed to every day speech gave me a relatively good impression concerning the frequency of certain senses); (c) semantic, syntactic and pragmatic restrictions of senses offered by the verbal gram (i.e. the more restricted a given sense is, the less prototypical it is). Certainly, the summation of these three factors into one exact degree of prototypicality cannot objectively be performed but may only be done with approximation and so, the above-mentioned general rounded categories were chosen.

Whenever possible, each map, hypothesised on the basis of synchronic evidence and typological diachronic laws, will be corroborated by structural properties of a form that reflect the original input locution from which the gram is descended, as well as by available comparative and diachronic facts. Due to the principle of cognitive plausibility and the connection between the form and meaning, these formal traits will be expected to confirm a hypothesised dynamic mapping (cf. section 1.2.2.2, where this is explained in detail). Additionally, comparative evidence (mostly from Manding) and/or diachronic data (which in the majority of cases involve proto-Manding and/or proto-Mande reconstructed forms), will be provided.

As a result, at this step of the study, the total meaning of each gram will be classified as a kinetic state, qualitative (a vector) and qualitative-quantitative (a wave), i.e. as a (respectively uni- or bi-dimensional) grammaticalisation cline (or a cluster of them).

It should be noted that the procedure of presenting the senses of a gram (cf. section 1.3.1, above), determining the range of its semantic potential (cf. section 1.3.2), representing it as a qualitative dynamic map and, after having introduced the parameter of prototypicality, as a bi-dimensional wave (cf. section 1.3.3), will be conducted individually for every verbal construction, and thus repeated though out the chapters 2, 3, 4, 5 and 6: KAD (2.1), nominal KAD (2.2), nominal LA (2.3), KA (2.5), SI (2.5; also in 4.4), TA (3.1), YE<sub>1</sub> (3.2), NAATA (3.3), RIID (3.4), BANTA (3.5), NOO (4.1), ÑANTA (4.2), MAA (4.3), LA (5.1), NAA LA (5.2), B-Imperative (6.1), and YE<sub>2</sub> (6.2).

#### 1.3.4 Correlating maps on streams

An ordered kinetic model of the semantic potential – either in the form of a vector or a wave – will enable me to maintain the dynamic character of grammatical entities. The synchronic semantic state of a verbal construction will be portrayed as an evolutionary process, i.e. as a portion of a path or a cluster of them. Thus, apart from preserving all the empirical synchronic information, this representation of the form's meaning will also provide important insight into the gram's development. This dynamic modelling will avail me an opportunity to introduce the concept of time into the synchronic definition: once an instance of semantic

potential has been ordered by means of universal grammaticalisation trajectories, it will be given a kinetic property, a direction.

This time dependency and dynamic nature will be even more visible if forms, whose waves share the  $x$ -axis (i.e. whose semantic potentials are organised along the same grammaticalisation template), are represented as spanning different sections of the common grammaticalisation channel recursively activated in the language – the stream. In accordance with what has been stated in section (1.2.2.4), grams whose semantic potentials – although distinct and generated by completely different input expressions – arose by following the same path, can be compared and modelled as waves traveling along a shared stream in consecutive order. Given the individual shapes, such waves will occupy different sections of the stream. The differences, visible by a distinct advancement on the stream, will typically stem from their different ages: the oldest gram should cover the most advanced sections of the stream, while the youngest one is expected to correspond to the least advanced segments.

Thus, at this level of analysis, the Basse Mandinka grams, whose semantic potential has previously been defined by means of an identical (or comparable) grammaticalisation path, will be viewed as consecutive waves set in motion on a stream that symbolises a typologically common grammaticalisation scenario, recursively activated in the language. In this manner, the kinetic semantic potentials of all the verbal grams will be organised into waves moving along five streams: the imperfective stream, resultative stream, modal stream, future stream, and modal contamination stream. Each wave will occupy distinct topological sections of the stream and each wave will also locate its peak in different areas of the stream. As predicted by the theory, the advancement on the stream will be correlated with the relative age of the grams: the first wave (and, thus, the oldest one) will be the most advanced, while the last (and, hence, the youngest) will be the least progressed.

In addition, it will be argued that the structure of the stream is not only conditioned by the shapes of the waves which it hosts, but it can likewise contribute to each wave in a loop-back manner, thus being able to have some effects on the total meaning of a gram and/or its more systemic status. Accordingly, the meaning of a gram – its wave – will be shown to be a situated phenomenon. In particular, the product prototypicality of a wave will stem from the waves' internal prototypicality and the prototypicalities of the other waves of the hosting stream (cf. section 1.2.2.4 above). The prototypicality peak plotted in this manner will be contrasted with the form's psychological perception among native speakers and their view of the prototypicality of the gram. This type of prototypicality has been detected by combining two phenomena: (a) the fact of being the first-to-come-to-mind example provided by native speakers (a prototypical sense is the most semanticised and usually first to be produced); and (b) the intuitive definitions of the verbal grams proposed by the informants during their interviews. It will be argued that the two types of prototypicality (the product prototypicality that emerges by situating a wave in a stream and the psychological prototypicality) coincide.

While the presentation of the senses of a construction, the determination of its entire semantic potential, and its subsequent representation as a vectored map or a wave will all be conducted individually for every verbal gram, the structure of a stream will only be discussed at the end of each chapter: the imperfective stream which contains the KAD, nominal KAD, nominal LA, KA and SI grams will be dealt with in section 2.6; the resultative stream, which

embeds the TA, YE<sub>1</sub>, NAATA, RII and BANTA forms in section 3.6; the modal stream, which consists of the NOO, ÑANTA and MAA constructions in section 4.5; the future stream, which is inhabited by the LA and NAA LA forms in section 4.3; and finally the modal-contamination stream, which principally includes the B-Imperative and YE<sub>2</sub> grams (albeit it also hosts many other constructions) in section 6.4.

### 1.3.5 Modelling the system: individualised streams and ocean

At the final stage of the research in chapter 7, the model of the entire TTAM verbal system of the Basse Mandinka language will be designed and portrayed as a fluctuating ocean of grammatical shapes. As explained in section 1.2.2.5, this system will be organised into dynamic modules – currents – each including waves traveling along the same type of a grammaticalisation path (i.e. grams whose semantic potential has been organised by means of the same grammaticalisation pattern). Accordingly, the TTAM verbal organisation of Basse Mandinka will not be represented in terms of an aspectual sub-system, a temporal sub-system or modal sub-system, but in terms of evolutionary scenarios. The system will not be intended to constitute a static, neat and simple (tidy) composition of grams, as is traditionally done in analyses of verbal organisations, especially in representations developed within the (neo-)structuralist framework. Rather – in accordance with modern approaches to real-world systems, such as languages themselves – the model will aspire to represent the Basse Mandinka verbal organisation as a prototypical complex body emerging from the interaction of currents, waves, kinetic semantic potentials and individual senses.

Since the Basse Mandinka verbal grams – if approached in their totality – will be represented as multi-dimensional geometric objects (i.e. kinetically oriented semantic potentials, levelled at prototypicality stages) arranged into waves on major streams (with additional branches and sub-waves perceivable from a more microscopic or fine-grained perspective), the interaction of these verbal constructions will involve various levels and dimensions, irreducible to a mere binary contrast of forms, typical of structuralist models.

Given that the relations existing in and underlying the Basse Mandinka verbal system are both numerous and intricate – as mentioned above, they involve multiple entities and span various levels – the verbal system itself will constitute a highly complex phenomenon. Following the advances offered by complexity theory, the Basse Mandinka verbal system will be modelled as an exemplary complex organisation. By adopting this approach, the system will be shown to possess the following traits, typical of complex bodies: it will be represented as an open, intricate, multilevel, dynamic, metastable and self-organising “organism” with emergent, non-resultant and non-additive properties. Furthermore, as an exemplary complexity model, the proposed representation will be demonstrated to be both analytic-microscopic and synthetic-macroscopic, giving access to various levels of description. Finally, by developing an “up-and-down” explanation with a bottom-up and top-down causation, exemplary of complex bodies, the model will reveal how all the levels continuously influence each other and jointly collaborate in delivering the system with its individuals.

It is important to understand that the objective of this dissertation is principally synchronic. It corresponds to the analysis and modelling of the Basse Mandinka verbal grams as a complex system at a time  $t$  – i.e. as a currently “running” complex body. Although, given the dynamic model adopted in this study, diachrony is important, the research presented here is not diachronic *sensu stricto*. Comparative and historical evidence is only used to corroborate the synchronic maps. Because direct diachronic data is extremely scarce and comparative evidence is, in various aspects, uncertain or debatable, the comparative-diachronic discussion should not be viewed as the central point of the dissertation and the foundation of its findings. The main goal of this study is a new synchronic approach to the verbal semantics of languages, and of Basse Mandinka in particular.

## CHAPTER TWO

## IMPERFECTIVE-PATH MODULE

## 2. Imperfective-path module

In this chapter, I will analyse five grams whose meaning can dynamically be defined by means of the imperfective-path template and/or by mappings that reflect clines originating from the imperfective trajectory. These constructions are: the KAD form (section 2.1), the nominal KAD form (section 2.2), the nominal LA form (section 2.3), the KA form (section 2.4) and the SI form (section 2.5). Each section will first offer some general information concerning the structure of a discussed gram followed by a detailed analysis of its semantic potential. Accordingly, all possible – within adopted categorisation – shades of meaning will be distinguished and illustrated by examples extracted from the author’s database. After that, each formation will be defined as a kinetic map (or a vectored semantic potential) and, subsequently, once the prototypicality zones have been specified, as a wave. Lastly, in section 2.6, a dynamic model of the imperfective stream in Basse Mandinka will be designed and portrayed as a sequence of three successive waves.

## 2.1 The KAD gram

The first form analysed in this chapter is the KAD gram. The formation is composed of the non-verbal predicator *be* ‘be’ – in the negative *te* ‘not be’ – the base of a main, lexical verb and the entity homophonous with the postposition *kaŋ* ‘on’. Two verbs, i.e. *naa* ‘come’ and *taa* ‘go’, frequently admit alternative shapes of the non-verbal predicator, namely *bi* and *ti* besides the usual *be* and *te*.

- (2.1) a.    M    **be**    a    **ke**    **kaŋ**  
           I    NVP it    do    KAD  
           ‘I am doing it’
- b.    M    **bi**    **taa**    **kaŋ**    saatewo    to  
           I    NVP go    KAD market    to  
           ‘I am going to the market’

As mentioned above, the element *be* (and its variants) is a non-verbal predicator (one of the predicative markers available in Basse Mandinka) which can also be used as a non-verbal copula.<sup>77</sup> It is possible to distinguish two main functions of copulas crosslinguistically: the

<sup>77</sup> From a typological perspective, non-verbal predication is “any kind of full sentence constructions in which predication is expressed without the use of lexical items pertaining to the class of full verbs in the respective language. In many cases such expressions require a copula support” (Dik 1989:165). As for copulas, such as non-verbal predictive copulas found in Mandinka and Manding, these tend to be semantically empty, that is to say, they fail to add any semantic (i.e. lexical) information to the predication (Schreiber 2008:64; see also Pustet 2005:5-7). The diachronic sources of copulas can be verbal (e.g. verbs, auxiliaries expressing local existence) or

predicational function (which includes three more specific roles: existential (*there is*), locative (*there is...here*) and possessive (*there is...at*)) and the specificational function (which stands for two more elementary roles: identificational (topic marker) and deictic; Schreiber 2008:65-66).<sup>78</sup> In (Basse) Mandinka, the element *be* is used to convey the predicational function (with its three subtypes: existential, locative and possessive; *ibid.*:68), while the specificational function is carried by the complex *le mu* (*ibid.*:69).<sup>79</sup>

The collected evidence indicates that in Basse the KAD form is not restricted to any special type of verbs or roots, contrary to what has sometimes been claimed for Gambian Mandinka (see section 2.1.1.1, below). To be exact, there are no syntactic constraints on the use of the gram so that both – and with an equal frequency – intransitive (2.2.a) and transitive (2.2.b) constructions are allowed. Likewise, there are no restrictions on the type of roots employed in this gram. Accordingly, all verbs, including static-adjectival predicates,<sup>80</sup> may be used in the KAD formation (2.2.c).

- (2.2) a. M    **bi**    **naa**    **kaŋ**  
           I    NVP   come   KAD  
           ‘I am coming’
- b. M    **be**    a        **saŋ**    **kaŋ**  
           I    NVP   it        buy    KAD  
           ‘I am buying it’
- c. M    **be**    **bataa**        **kaŋ**  
           I    NVP   be.tired      KAD  
           ‘I am getting tired’

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non-verbal (Hengeveld 1992, Curnow 2001, Kastenholz 2003; on the origin of the non-verbal predicator *be* see section 2.1.2)

<sup>78</sup> For an in-depth study of copulas in Mande, see Schreiber (2008). Concerning the relation between copulas, locative expressions and existential predicates/sentences, see Creissels (2014) and McNally (forthcoming). Observe that more than a half of 256 languages in Creissels’ survey use the same form in locative and existential constructions (cf. also Clark 1978). On existential constructions from a crosslinguistic perspective, see Bentley, Ciconte & Cruschina (2013) and Creissels (2014; see also McNally 2011). On existentials in Mandinka and their uses, see Creissels (2013a) and (2014).

<sup>79</sup> For the sake of comparison, in Bambara and Koranko, the predicators *bé* and *bé/yé*, respectively, are used in the predicational functions, while the predicators *yé...yé* (or *dòn*) and *lè* are employed in the specificational function (Kastenholz 1987, Dumestre 2003 and Schreiber 2008:69).

<sup>80</sup> However, when employed in the KAD form, static-adjectival verbs are generally used in a dynamic ingressive sense (see section 2.1.1, below).

## 2.1.1 Semantic potential

### 2.1.1.1 Grammatical tradition<sup>81</sup>

The KAD formation has been treated in various, more general, grammar books, where it has usually been classified as a progressive category (see, for instance, Rowlands 1959, Creissels 1983a,<sup>82</sup> Dramé 2003 and Creissels & Sambou 2013, who define the gram as a progressive aspect; compare also Wilson 2000). However, Creissels (1983a:36-37), who analyses the gram as a verbal formation (or a verbal predication), also notes that certain properties of this construction link it to nominal structures from which it may have been derived (see also Tröbs 2004a:141-142; cf. section 2.1.2, below). Colley (1995:8, 14) explains this formation as a prototypical progressive, providing the following example: *Suloolu be tubañoo tiñaa kaj naako kono* ‘Monkeys are spoiling the corn in the garden’. He also suggests that the periphrasis is semantically and formally analogous to certain locative expressions, such as *A be munne ke kaj?* ‘What is he doing?’. *Mandinka English Dictionary* (cf. WEC 1995:77) defines the KAD form as an aspectual marker that indicates continuous actions. However, the extent of its use is supposedly limited to transitive verbs. Likewise, according to Lück & Henderson (1993) and WEC (2002:16-17), the locution is more commonly employed in transitive constructions. In this environment, it regularly expresses progressive actions, e.g. *M be kontojo le tabi kaj* ‘I am cooking lunch’ and *M be motoo dada kaj* ‘I am fixing the car’. In contrast, according to the same studies, only infrequently, the KAD form may be derived from intransitive verbs (*A be bori kaj* ‘He is running’) and denote continuous states (*A be duwaa kaj* ‘He is praying’). In this regard, it is usually claimed that in order to express the idea of a continuous state, intransitive verbs employ the RID expression (cf. section 3.4) rather than the KAD gram.<sup>83</sup>

### 2.1.1.2 Evidence from Basse<sup>84</sup>

In Basse Mandinka, the KAD gram typically conveys the sense of ongoingness. In most cases, it expresses the idea of progressivity and portrays, at a given reference time, ongoing actions as dynamic, i.e. as actions that necessitate a steady flux of energy in order to be sustained. Accordingly, within a present time frame, the KAD locution indicates dynamic

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<sup>81</sup> Throughout this dissertation, in sections entitled ‘Grammatical tradition’ I will only discuss views expressed in grammars and monographs specifically dedicated to the Mandinka language. The discussion of cognate constructions in other Manding and Mande dialects will be presented in sections in which the maps of the Basse Mandinka grams will be posited and corroborated (for instance, in section 2.1.2 below). Among the sources related to Mandinka, I have included Macbrair’s (1842) grammar. Although this study is old-fashioned (especially as far as its theoretical framework is concerned), it still provides valuable insights in certain instances.

<sup>82</sup> Creissels (1983a) discusses a subtype of the KAD form which employs a verbal noun instead of the infinitive: *M be domoroo kaj* ‘I am [at] eating’ (literal gloss: I be eating on; cf. section 2.2).

<sup>83</sup> In fact, the transitive type is also regarded as less frequent than another progressive formation, viz. the periphrasis *be* + verbal noun + *la* (cf. section 2.3).

<sup>84</sup> The evidence presented in this section draws from my paper ‘The KAD verbal form in Basse Mandinka – structure and meaning’ published in *Studia Linguisticae Universitatis Iagellonicae Cracoviensis* 129 (cf. Andrason 2012).

activities which are currently in the process of being performed, approximating the category of a present progressive:

- (2.3) a. M **be** bukoo **karaj** kaj saayinj  
 I NVP book read KAD now  
 'I am reading the book now'
- b. A **bi naa** **kaj** saayinj  
 he NVP come KAD now  
 'He is coming now'
- c. Ì **be** duutoolu **domo** **kaj**  
 they NVP mangos eat KAD  
 'They are eating mangos'

An analogous progressive meaning may be found with a past temporal reference where the gram functions as a progressive past:

- (2.4) a. M **be** bukoo **karaj** **kaj** kunuj talañ seyi  
 I NVP book read KAD yesterday hour eight  
 'Yesterday at eight, I was reading the book'
- b. A **be** jiyo **miñ** **kaj** nuñ  
 he NVP water drink KAD then  
 'He was drinking water'
- c. Bii soomandaa, a **be** **taama** **kaj** bedoo kaj  
 today morning he NVP walk KAD street on  
 'Today in the morning he was walking in the street'

It is virtually impossible to employ the KAD form in main clauses located in a future time frame and, thus, with the force of a future progressive. Accordingly, sentences like that in (2.5) are unacceptable:

- (2.5) \*\*M **be** bukoo **karaj** **kaj** saama talañ seyi  
 I NVP book read KAD tomorrow hour eight  
 Intended meaning: 'Tomorrow at eight I will be reading the book'

In order to express ongoing or progressive future activities, different locutions must be employed. On the majority of the occasions, one uses the LA formation (*A be a domo la* 'He will eat / be eating'; cf. section 5.1) or periphrases composed of the verb *tara* 'be, remain' in the LA gram and a verbal noun followed by the postpositions *la* (*A be tara la domoroo la* 'He will be eating') or *kaj* (*A be tara la siinoo kaj* 'He will be sleeping').

However, one should note that it is possible to construct contexts where the KAD gram does refer to a future time sphere. In most cases, such future ongoing readings of the KAD form are found in subordinate clauses introduced by or depending on main clauses that explicitly locate the reference time in the future:

- (2.6) Sooma niŋ ali ye ñiŋ kuwolu je,  
 tomorrow when you have this things see,  
 ‘Tomorrow, when you see all these things  
 ì **be ke kaŋ**, ali si a loŋ ko...  
 they NVP happen KAD, you will it know that  
 happening [that are/will be happening], you will know that...’

Although the progressive dynamic nature of the KAD locution is clearly predominant, certain less dynamic verbs – in particular activity verbs such as *siinoo* ‘sleep’ (2.7.a) or, less commonly, situational-postural verbs such as *loo* ‘stand’ (2.7.b) – may appear in this periphrasis. In such instances, the gram expresses another subtype of the idea of ongoingness, i.e. the continuity of an activity, and approximates a continuous aspect. Continuous categories are more general than progressive grams, admitting non-dynamic predicates: they view the situation, either being dynamic or stative, as simply ongoing at the reference time. As far as the KAD form is concerned, this reference is usually either in the present (2.7.a) or in the past (2.7.b):

- (2.7) a. A **be siinoo kaŋ** saayin  
 he NVP sleep KAD now  
 ‘He is sleeping now’  
 b. A **be loo kaŋ** nuŋ  
 he NVP stand KAD then  
 ‘He was standing’

Nevertheless, it shall be noted that most exemplary static predicates – such as *lafi* ‘like’ or *a loŋ* ‘know’ – obligatorily acquire a dynamic progressive (ingressive) reading in the KAD expression:

- (2.8) a. M **be lafi kaŋ**  
 I NVP like KAD  
 ‘I am getting to like’  
 b. M **be a loŋ kaŋ**  
 I NVP it know KAD  
 ‘I am getting to know it’

This dynamic re-interpretation of non-dynamic verbs may clearly be observed in the class of adjectival verbs.<sup>85</sup> Namely, when the KAD form is derived from adjectival roots, the gram

<sup>85</sup> For a more detailed discussion of stative and adjectival (i.e. quality) verbs, see Creissels (1985, 2003; cf. also 2003) and Tröbs (2009:240-253 and 2014). In general, adjectival (quality) verbs (*koyi* ‘be white’) are a subtype of stative verbs, which also include perception, psychological and locative verbs. Mandinka does not have stative verbs as a distinct grammatical category (Creissels 1985:4). However, other Manding languages usually exhibit a distinction between statives and process verbs, statives being marked by special predicative TTAM markers (Creissels 1985:28, 1986:26-29, Tröbs 2009, 2014). In most dialects, stative constructions use the predicative maker of the KA type: *ká/kà* in Bambara (Creissels 1983b:25-26, Vydrin 1990; see also Dumestre

regularly functions as an ingressive progressive present or past: a given quality is in the process of materialising or, inversely, the subject is in the process of acquiring a determined property. This means that adjectival roots – just like the static ones – are not employed with the force of a continuous aspect, but are semantically “reshaped” as dynamic (i.e. transitory-ingressive) in order to “fit” into the progressive nature of the KAD construction:

- (2.9) a.   Maaliki        la       dendikoo       **be**   **koyi**        **kaŋ**  
           Malik        of       shirt           NVP   be.white       KAD  
           ‘Malik’s shirt is getting white’
- b.   A       **be**   **kuuraŋ**       **kaŋ**  
           he    NVP   be.sick        KAD  
           ‘He is getting sick’
- c.   A       **be**   **kendeyaa**   **kaŋ**  
           he    NVP   be.healthy    KAD  
           ‘He is getting well’

The KAD locution formed with static and adjectival verbs may likewise be employed in a past time frame. In such instances, the gram denotes ingressive past progressive activities:

- (2.10) a.   Suutoo,        m       **be**   **kuuraŋ**       **kaŋ**  
           night,        I       NVP   be.sick        KAD  
           ‘I was getting sick at night’
- b.   Sanji   fula   kooma m       musoo **be**   **saasaa**       **kaŋ**  
           year   two   ago   my    wife   NVP   be.ill        KAD  
           ‘Two years ago, my wife was getting ill’

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1981:49-50 and Bergelson 1991:5), Kita Maninka (Keïta 1984:62), Kagoro, Maninka, Mæka, Bolon, Jula Véhiculaire, Jula of Kong, Vandugukakan and Folokakan, and *xa* in Xasonka (Tröbs 2009:241-243; on the morpheme KA, see section 2.4). Other frequent markers are *ya* (Maukakan, Wojenekakan, Tudugukakan, Siakaka, Koyagakan, Korokan, Sagakakan and Jula of Kong) and *a* (Tenegakan, Maukakan, Finangakan, Korokakan, Baralakan, Folokakan, Gbelebankakan, Nɔwɔlokakan, Sienkokokan, Worodugukan, Kanikakan, Karanjakan and Nigbikakan; Tröbs 2009:241-243). In Manding, stative verbs usually employ the marker that is identical to the perfect/perfective/past marker of dynamic verbs (Tröbs 2009:245-246; regarding the similar behaviour of static and dynamic verbs in Basse Mandinka, see section 3.1 and 3.2 where the TA and YE<sub>1</sub> grams are discussed). In the negative, Manding regularly uses the perfect/perfective marker *ma* or *man* (Creissels 1985:8, Tröbs 2014:124). However, sometimes the perfect(ive) and negative stative markers (even though similar) are different due to the presence of nasalisation in the former (e.g. Bambara, Kagoro, Maninka, Bolon, Jula of Kong, Jula Véhiculaire, Koyagakan, Korokan, Worodugukan; Creissels 1985:8, Tröbs 2009:246-247; cf. Derive 1981, Creissels 1983b:25-26, 1985:11 and Vydrin 1990:73). In Maukakan, the situation is inverse: stative verbs use the marker *ma(n)* while dynamic predicates employ the marker *man* (Tröbs 2009:246). The number of quality verbs varies in different dialect. For example, in Bambara, there are 53 stative verbs (Vydrin 1990). In Manding, Creissels (1985) identifies 23 core quality verbs (see also Tröbs 2009:240-241). Outside Manding, the situation seems to be similar, although not identical. For instance, in Vai, when stative and quality verbs are used with the zero marker, they offer a present tense reading, contrary to the dynamic verbs that in the same construction have a past or perfective interpretation (Tröbs 2014:119, 123). In the negative (just like in Manding), the marker *má* is used both for stative and dynamic verbs, triggering the readings that are analogous to those found in the affirmative construction (Tröbs 2014:124; on Vai, see also Welmers 1976; concerning stative verbs in Yalunka, consult Lüpke 2005).

The KAD construction is also commonly used with a descriptive force, closely related to the dominant value of the ongoingness of the gram. In this function, the formation introduces activities simultaneous to the principal event – which establishes the main reference time – and presents them as conditions characterising a given person, creature or thing. The entities that are portrayed in that manner regularly correspond to the direct objects of perception or sensory verbs (e.g. *a je* ‘see’). This descriptive sense of simultaneity almost always remains progressive and, hence, dynamic (including ingressive if derived from static and adjectival verbs):

- (2.11)       $\text{\textcircled{D}a}$      $a$        $je$        $a$       **be**     $i$                     **doŋ**    **kaŋ**  
 I.did    him    see    he    NVP    REFL<sup>86</sup>            dance    KAD  
 ‘I saw him (as he was) dancing’

Sometimes, the subject of the adjacent KAD periphrasis and the non-verbal predicator *be* are missing, thus giving rise to a more idiomatic descriptive expression. In such cases, the element *kaŋ* may be analysed as introducing a non-finite verbal form which expresses the co-occurring action and portrays it as being performed by the object of the main verb:

- (2.12) a.       $A$        $ye$        $kewo$      $doo$      $je$       **naa**    **kaŋ**     $a$        $yaa$   
 he    did    man    certain    see    come    KAD    him    toward  
 ‘He saw a man coming toward him’  
 b.       $Nte$      $ye$        $musoolu$        $je$       **jii**      **kaŋ**  
 I      did    women      see    descend    KAD  
 ‘I saw women coming down’

When the KAD form is employed in the progressive function, both in the present and past temporal spheres, it contrasts with the KA construction, which is the principal means of conveying the idea of habituality (for the analysis of the KA formation, see section 2.4. below). I will illustrate this local opposition by the following pair of sentences which differ exclusively in the verbal construction, employing either the KAD or KA grams. While example (2.13.a) is interpreted as expressing an ongoing (at a given moment in the past) progressive action, sentence (2.13.b) seems to indicate a past habit of performing it:

- (2.13) a.       $M$       **be**       $leetaroolu$       **safee**    **kaŋ**     $nun$   
 I      NVP    letters      write    KAD    then  
 ‘I was writing letters’  
 b.       $N$       **ka**       $leetaroolu$       **safee**     $luŋ$ - $wo$ - $luŋ$      $nun$   
 I      KA    letter      write    every.day    then  
 ‘I used to write letters every day’

<sup>86</sup> As explained in chapter 1, the gloss ‘REFL’ stands for a reflexive marker (in this case, for a reflexive pronoun *i*). On the issue of reflexive verbs and reflexive pronouns in Mandinka, see Creissels (1983a:126-129). For the study of reflexivity in Bambara, consult Vydrin (1994b; see also Begelson 1985 and Koné 1984:72, 136-139). Concerning other Manding and Mande languages, see Ebermann (1986), Keita (1986) and Sangaré (1984).

Nevertheless, it is possible to find examples where the KAD formation is accompanied by iterative temporal adverbs. In such cases, the gram indicates the repetition of a given progressive action, providing a value that henceforth will be labelled as iterative. In this usage, the KAD locution again interacts with the KA gram: while the KA construction expresses the pure idea of habits, customs and routines (2.14.a), the KAD form emphasises the progressivity of an activity occurring repeatedly or frequently (it introduces a repetition of individual progressive occurrences; cf. 2.14.b). If static or adjectival verbs are used, they convey the idea of reiterated ingressive processes (2.14.c). It should be noted that the KAD construction constitutes the most common way of expressing the recurrence of ingressive actions.

- (2.14) a. N    **ka**    dasaamaa    **domo**    luŋ-wo-luŋ  
 I    KA    breakfast    eat    every.day  
 ‘I have breakfast every day’ (i.e. to have breakfast is my habit)
- b. M    **be**    dasaamaa    **domo kaŋ**    luŋ-wo-luŋ    talaŋ    8:00  
 I    NVP    breakfast    eat    KAD    every.day    hour    8:00  
 ‘I am having breakfast every day at 8:00’ (i.e. every day at 8:00 I am in the process of having breakfast)
- c. M    **be**    **kuuraŋ**    **kaŋ**    lookuŋ-wo-lookuŋ  
 I    NVP    be.sick    KAD    every.week  
 ‘I get sick every week’

The two senses, i.e. habituality and iterativity, are very similar – especially in the case of dynamic verbs – as may be seen from the following examples where both the KAD and KA formations are used in order to express a general statement concerning the fact that the Moon has a property of turning around the Earth. One should, however, note that the KA gram is by far more commonly employed in order to convey habitual activities and, especially, general or gnomic truths (cf. section 2.4, below).

- (2.15) a. Karoo **ka** i    **muruŋ-muruŋ**    Bankoo    nooma    luŋ-wo-luŋ  
 Moon KA REFL turn    Earth    after    every.day  
 ‘The Moon turns around the Earth everyday’
- b. Karoo **be** i    **muruŋ-muruŋ kaŋ**    Bankoo nooma    luŋ-wo-luŋ  
 Moon NVP REFL turn    KAD Earth    after    every.day  
 ‘The moon turns (is in the process of turning) around the Earth everyday’

The “weakening” of the progressive or ongoing value of the KAD gram can further be observed in certain examples where, located in a present time sphere, the construction denotes general, durative (i.e. extended in time) habitual-like activities. In such cases, the meaning of ongoingness is secondary, while the durative sense of an activity viewed as a more or less constant situation becomes primordial. Once more, the use of the KA form is much more common in this function:

- (2.16) a.   Ñinaŋ   m   **be**   Mandinka   kaŋo           **karaj kaŋ**   Basse to  
           this.year I   NVP   Mandinka   language   learn   KAD   Basse in  
           ‘This year, I study the Mandinka language in Basse’
- b.   Ñinaŋ           m   **be**   **sabati kaŋ**   Basse to  
           this.year    I    NVP   live   KAD   Basse in  
           ‘This year, I live in Base’
- c.   Karambuŋo   **be**   **tara kaŋ**   Basse to<sup>87</sup>  
           school       NVP   stay   KAD   Basse in  
           ‘The school is in Basse’

Lastly, the KAD formation may also be employed with the force of an inclusive perfect, indicating that a given activity or situation began in an explicitly specified moment in the past but has continued into the present without interruption. This usage – quite common if the time span is relatively short – again emphasises the durativity of a given activity.

- (2.17)       M   **be**   leetaroo       **safee kaŋ**   waati saba  
               I    NVP   letter           write   KAD   hour three  
               ‘I have been writing the letter for three hours’

### 2.1.2 Dynamic map

It has initially been observed that there are no restrictions on the use of the KAD form. The gram may be employed in all types of constructions: transitive or intransitive and affirmative or negative. It likewise tolerates various types of roots: the locution may be formed with properly dynamic verbs, activity and situational-postural roots, as well as with static and adjectival predicates. However, in the last two cases, the predicates employed in the KAD construction regularly acquire a dynamic ingressive interpretation.

With respect to its meaning, the KAD periphrasis most typically introduces ongoing (generally present or past) activities. In the majority of the cases, the reading is dynamic indicating processes, most commonly progressive and/or ingressive ones. This means that the KAD form usually functions as a progressive present and past. This typical progressive sense of the KAD gram is evident in the following fact: if the construction is formed with static and adjectival verbs, such roots receive a progressive (more specifically, ingressive) interpretation. In certain cases, however, activity and situational verbs are admissible in non-ingressive meaning so that the formation approximates a continuous aspect. Akin to ongoingness (either progressivity or continuity) is the use of the KAD form as an expression of simultaneity, whereby it describes a condition that characterises the object of perception or sensory verbs. The KAD gram may appear in the iterative function, indicating that the dynamic and/or ingressive process of performing a given activity occurs repeatedly. Significantly less common are uses of the KAD form with a properly habitual or customary

<sup>87</sup> This sentence was accepted only by two informants. The other speakers consulted on this matter regarded it as ungrammatical.

value. Moreover, in infrequent instances, the aspectual force of ongoingness and progressivity ceases to be pertinent and the gram indicates general, durative and extended in time activities. These activities can refer to a broadly understood present sphere or span from a moment in the past to the present (the force of an inclusive perfect).

The results indicate that although the progressive value of the KAD form clearly predominates, this gram cannot be equalled with an invariant progressive category. First, the KAD locution is limited to the present and past temporal reference, failing to function (at least in main independent clauses) as a progressive future. Second, the progressive (dynamic and/or ingressive) meaning may be portrayed as repeated (iterativity), or be employed in order to describe a situation affecting the object of another verb (simultaneity). Third, although adjectival roots and most static verbs (*lafi* ‘like’ or *a loŋ* ‘know’) are employed in the KAD form with a transitory-ingressive force – and, thus, they do not appear with a continuous meaning, but select a dynamic progressive reading – the construction can sometimes denote continuous activities (cf. certain activity and situational verbs, such as *siinoo* ‘sleep’) as well as general durative situations extended in time that go beyond the actual here-and-now of the speaker. Fourth, this temporal extension may also “descend” to a determined moment in the past. In such cases, the grammatical present includes a portion of the past temporal sphere, too. Lastly, on some rare occasions, the gram can even express general habitual facts.

Consequently, the evidence provided in section 2.1.1 suggests that the semantic potential of the KAD formation corresponds to non-advanced portions of the imperfective cline, located either in the present or past time frame. The construction typically conveys the idea of simultaneity and progressivity, which reflect two initial stages on the cline. The progressive value is exemplary of dynamic roots as well as of static and adjectival predicates that acquire a dynamic ingressive reading. However, certain situational verbs may express the concept of continuity which corresponds to a subsequent phase on the trajectory. Both in its progressive and continuous function, the KAD gram regularly conveys the nuance of ongoingness, either dynamic or non-dynamic, respectively. A common possibility to portray progressive actions as iterative corresponds to a subsequent stage on the imperfective path, where the sense of repetition is profiled. As far as the KAD formation is concerned, the iteration is typically depicted as a collection of independent progressive, dynamic and/or ingressive actions. Much less commonly, the gram expresses properly customary situations and habitual actions, or the activities that last long periods of time, providing yet further advancement on the path, during which the sense of habituality and durativity become acceptable. However, albeit infrequent, such instances do occur, as the KAD gram may occasionally indicate activities that hold for larger portions of time and/or that are generally true. As mentioned, in the function of habituality, durativity and gnomic truths, generic situations or entirely routinized acts, the KA gram is significantly more common (cf. section 2.4).

To conclude, the KAD gram may be defined as a young imperfective diachrony, whose prototypicality is located in the section of the simultaneous, progressive and iterative domains. The senses corresponding to the continuous, habitual and durative phases can be detected, but are sensibly less common. Lastly, the gnomic value is extremely infrequent.

Additionally, in agreement with a typical behaviour of progressive grams, the KAD locution triggers an ingressive dynamic reading of the most non-dynamic predicates, with the exception of some situational and activity roots. The entire semantic potential of the KAD form can be mapped by employing the chaining based upon the imperfective path in the following manner:

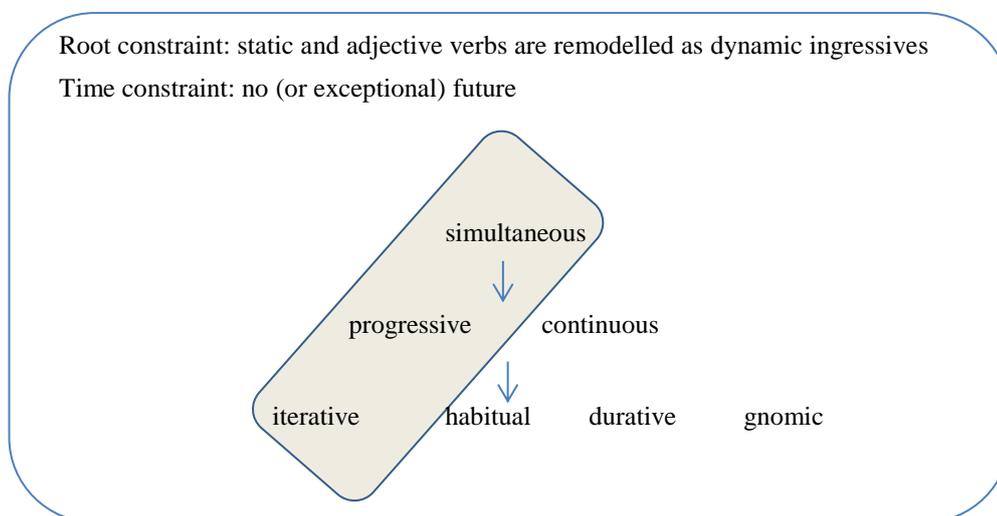


Figure 2.1: Map of the semantic space of the KAD gram<sup>88</sup>

The map designed above can be given a linear representation in terms of a kinetic vector, more suitable for a wave model which will be posited for the entire sub-system of imperfective-path grams. However, one should bear in mind that such a linear networking of the semantic potential of the gram is more rounded or approximate, constituting a scientific invention necessary for the modelling procedure adopted in the study. Additionally, in order to render the wave representation even more feasible, for the sake of clarity, only three major stages will be distinguished. They correspond to the three vertical phases in Figure 2.1: simultaneity, broad ongoingness (progressive, continuous and iterative all together – the ongoing nuance is profiled) and broad habituality (habitual, durative and gnomic – duration is profiled). This once more is an example of scientific rounding where similar objects – but not identical – are grouped together into a single class because of certain reasons of which some can be dictated by the model itself. Certainly, other broad classes are possible. In fact, the more macroscopic a perspective is, the more alternative variants for grouping of elementary classes there are.

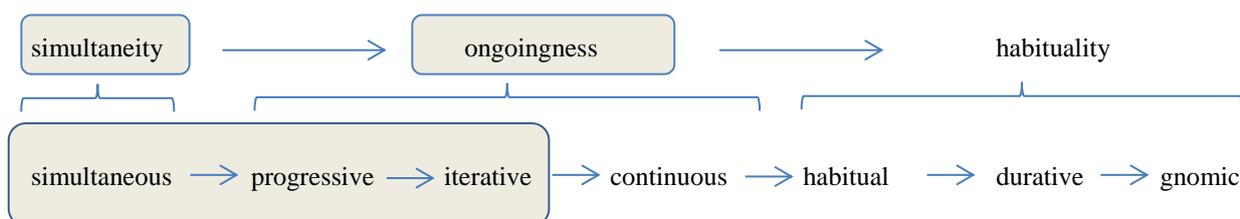


Figure 2.2: Linear model of the semantic space of the KAD gram

<sup>88</sup> The prototypical senses are marked by their inclusion in the dashed square.

If the prototypicality is indicated by a vertical axis – in addition to the horizontal axis that organises the semantic potential in a dynamic way, by converting the taxonomy into a kinetic vector of meaning – the semantics of the KAD form can be modelled in the following rough (Figure 2.3.a) or smoothed (Figure 2.3.b) ways:

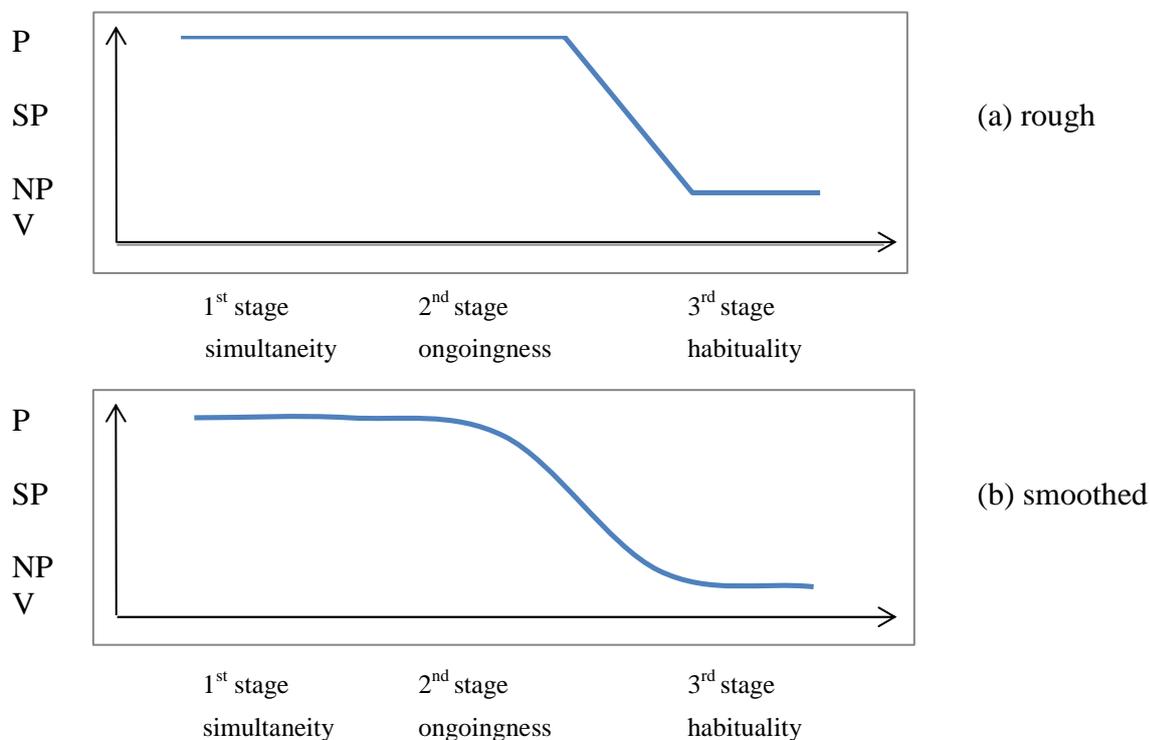


Figure 2.3: Wave model of the semantic space of the KAD gram

The structure of the KAD construction may be used to corroborate its dynamic definition in terms of a young imperfective-path gram. Namely, crosslinguistic studies show that progressive and continuous formations – also used with a value of simultaneity – are commonly derived from locative periphrasis. Such periphrastic locutions usually consist of postural verbs that express a specific type of the position of the subject (being, sitting, standing, lying, etc.). They metaphorically portray the subject of a postural verb as being located in the midst of performing an action. This specific locative nuance is conveyed by the said locative predicate and the adposition that indicates the exact position of the subject in relation to the action, as being at, on, in, or with it; for detail, see Bybee, Perkins & Pagliuca 1994:136-137, Ebert 2000:607). The KAD gram imitates this typologically common pattern (cf. Tröbs 2004a). As explained, it is derived from the non-verbal predicator (which is a regular locative entity in Basse Mandinka expressing the position of the subject: *A be jee* ‘He is there’, *A be taabulo kaŋ* ‘It is on the table’ corresponding to postural verbs of Indo-European languages, e.g. *vera* in Icelandic, *estar* in Spanish or *być* in Polish, all of them with

the meaning ‘to be [placed, situated]’) and postposition *kaŋ* (which gives the detailed location of the subject in relation to the action, he or she is performing: *A be a kaŋ* ‘He is on it’).<sup>89</sup>

The non-verbal predicator *be* itself – a locative copula which is a common component of various progressive periphrases in Basse Mandinka, including the KAIŋ gram – may go back to two sources: an original locative and/or existential verb ‘be (at)’ (Claudi 1993:119-121, 1994:204, Tröbs 2003:4, 2010:62-63; for a critical evaluation of Claudi’s hypothesis, see Kastenholz 2003:37-39) or a non-verbal, for instance, deictic element (Tröbs 2003:4, 2010:62-63, Babaev 2011:11; see also Bearth 1995). Since the existential sense can still be found in Manding and Mande languages, besides the common locative values, the theory of a verbal origin could be viewed as plausible. According to this hypothesis, the predicator *be* (and its cognates in other Manding and Mande languages), frequently used as an auxiliary in progressive grams, would descend from a defective copula, itself a successor of an original existential verb (Claudi 1993 and 1994:204; see the discussion in Kastenholz 2003:39 and Tröbs 2003:4). The process whereby existential and locative verbs develop into defective and, subsequently, invariant copulas, is common crosslinguistically (Payne 1999:117-119, Hopper & Traugott 2003:106-109, 111-114, Krug 2011:554-557).

The non-verbal predicator *be* has synchronically a very special status in the verbal systems of Basse Mandinka and related languages – as mentioned above, it is defective. It is uninflected and cannot be used as a main lexical verb in other grams, e.g. in the KAIŋ, KA, SI, TA formations. In fact, as observed by Kastenholz (2003:39), no verbal uses of the copula *be* – equivalent to other lexical verbs – are found in Manding and Central Mande dialects or languages. This lack of verbal categories of the predicator *be* may suggest its non-verbal provenance (Tröbs 2003:4). Nevertheless, such a peculiar synchronic position of the element *be* may in fact be a result of decategorisation of the original verb, which is a common phenomenon accompanying grammaticalisation. As explained above, invariant copulas (as well as verbal affixes and verbal clitics) can be derived from verbs, first full ones and later defective (cf. Kastenholz 2003:39, Lüdtke 1987, Schwegler 1990:132-133, Heine 1993:54-56, Klausenburger 2000:76-77, Hopper & Traugott 2003:111, Krug 2011:554-556). A possible candidate of a non-verbal source of *be* may be a deictic particle whose successor would be the demonstrative pronoun *be* ‘this’ in Bozo, a language from the Northwestern

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<sup>89</sup> The postposition *kaŋ* may itself be related to an original lexeme referring to a body part, particularly to a noun (*kaŋo* in Mandinka) with the meaning of ‘neck, throat, upper shoulder’ (Kastenholz 2003:46; for other cognates, consult Vydrin 2009a:131, 133; see also Nicolai 2006). In fact, a large number of Mande postpositions derive from relational nouns, many of them referring to body parts (Bailleul 1986, Tröbs 1999:365, Nikitina 2008a:209, 2008c). For example, in Bambara, it is possible to distinguish three types of adpositions: formal (i.e. primary) (*lá, mà, fè, yé*), lexical (*bolo, kùn, nyé, kó*) and composed (*káma = kán* ‘throat’ + *mà* ‘par le cou’ or *kóson = kó* ‘back’ + *\*só/són* ‘au dos de’; Dumestre 2001:1; on postpositions in Bambara see Dumestre 1989b). Although the nominal source is most visible in the second and third group (given their less advanced grammatical status), even primary adpositions seem to have descended from (relational) nouns, as mentioned, typically body parts. From a wider typological perspective, the use of body parts as sources of relational elements, such as adpositions, is highly common (on this phenomenon, see Fedry 1976, Andersen 1978, Svorou 1986, 1994, Sweetser 1990, Heine 1997, 2011, Gibbs 2006, 2008, Sharifian et al. 2008, Yu 2008, 2009, Bergen et al. 2010, Maalej & Yu 2011, Kraska-Szlenk 2014).

Mande branch (Tröbs 2003:4; see also Bearth 1995 who postulates a similar scenario for the Tura language).<sup>90</sup>

Whatever the exact origin of the non-verbal predicator *be* is (i.e. verbal or non-verbal), functioning as a locative copula, it constitutes a plausible copulative locative element for the development of progressive periphrases.<sup>91</sup>

One should note that both crosslinguistically and in Manding, original progressive periphrases usually draw on locative nominal structures (Tröbs 2004a:148-150, Tröbs 2009:194-206). This means that at its absolute origin, the verb is a nominal category (e.g. verbal noun, gerund, etc.) imitating a locative source schema. Accordingly, the initial grammaticalisation process involves, at last, two following stages. The more original stage includes nominal progressives, which merely substitute the concrete noun by a verbal noun. The more advanced stage corresponds to verbal progressives in which the element conveying an action or activity gradually loses its nominal properties (e.g. a definite marker) and the locative item develops into a discontinuous aspectual marker (Tröbs 2004a:150, Tröbs 2009:203-204).

In the KAD gram, the lexical verb appears in its base and not as a verbal noun and the entire construction has a typical verbal character (see, however, further below in this section).

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<sup>90</sup> Some scholars also argue that the predicators *be* and *ye* (the latter existing in other dialects, e.g. in Bambara) are genetically related: the latter is a weakened or gradated version of the former (Kastenholz 1996, 2003:40-41, Tröbs 2003:4, 6; see also sections 2.2.2, 2.3.2 and 5.2.2). To be exact, given the functional split (progressive *versus* habitual) and paradigmatic complementary distribution (cf. Bird et al. 1982), Kastenholz (2003:40) proposes that the locative element *ye* constitutes a phonemic variant of *be* (*bé* or *bé*). As far as the origin of the element *yé* is concerned, it has been proposed that this morpheme derives from the imperative of the verb *yé* ‘see’ (cf. Basse Mandinka *je*; Creissels 1997a:12, 1997b:10, Tröbs 2010:62-63). Creissels (1981) argues that among the ostensive (i.e. of presentation, similar to *voici* in French) and “équatif” (i.e. of identification) values, the former was primary, the latter being derived from it. To be exact, the imperative of the verb ‘see’ acquired the status of a locative copula via a presentational value (Tröbs 2010:62). Although this scenario is possible (especially because a similar conceptual change is attested in Mande, albeit for a different root; cf. Creissels 1981, see also section 2.4), the imperative origin of the locative copula (and, later, of the auxiliary in progressive constructions) is not uncontroversial or unquestionable (cf. Kastenholz 2003:41).

One should note that there is also a beneficiary or identification postposition *ye* in Basse, the cognate of which in Bambara is *yé* (Koné 1984, Bailleul 1986, 1996). Given the split predicative nature of Mande and Manding, and a possible postpositional origin of certain markers, the element *ye* found in progressives and habituais may also have descended from a postposition. Bailleul (1986:73-74) suggests that the postposition *yé* in Bambara is related to the lexeme *je* ‘eye’ and/or ‘see, sight’. Accordingly, it would share history with the predicative marker *yé* in locative, presentative and progressive-habitual constructions. If the elements *be* and *ye* are related, the latter being a weakened variant of the former, their origin in the imperative of the verb *je/ye* seems rather unlikely.

<sup>91</sup> On a possible origin of the negative predicator *te*, see Creissels (1997b). Creissels argues that *te* (and its cognates in other Manding languages) derives from *n-te*, which is a successor of the following complex: \**m* + high tone vowel + locative predicate *te*. (Observe that the form *n-te* is found in Basse Mandinka, as it is in Maninka of Kita, Kagora and Xasonka; cf. Creissels 1986). It is important to note that in some Mande languages belonging to branches other than Manding, there is a similar entity with the meaning of the verb ‘be’ (e.g. *ti* in Bisa and Bobo; Creissels 1997b:11). Forms of the verb ‘be’ of the types *ta*, *te*, *di*, *de* are also attested in Niger-Congo, including Bantu. These facts lead Creissels to postulate that *te* (or its phonetic variants) was originally a verb ‘be’. However, because of its association with negation (i.e. its use with a negative element \**m*), the construct developed into a negative word. Thus, it is possible to posit the following chain of changes: \**m* ‘negator’ + vowel + *te* ‘be’ > *n-te* ‘locative or and/or existential negative’ > *te* ‘negative predicator’ (for a detailed discussion, see Creissels 1997b:11-12).

This scenario was criticised by Babaev (2011:15-16), who proposes that the predicative markers of negative polarity *te*, *ta* and *te* found in Mande and Manding come from the negation marker \**ta* or \**te*, which was grammaticalised from a negative verb in Proto-Mande (cf. Proto-Bantu \**ta* ‘not have’).

This may suggest a more advanced formal grammaticalisation status of the KAD locution, under the condition that the gram has evolved from a nominal construction (on the nominal KAD, see section 2.2). This is in fact the scenario proposed by Tröbs (2004a, 2009) and Creissels (1983a) who view the KAD gram as a further grammaticalisation phase of an analogous, more original, nominal formation. In fact, Tröbs (2004a:148, 2009:203-204) defines the KAD form as an “old progressive” – it is a verb-like construction, i.e. it exhibits a predominantly verbal character (cf. Creissels 1983a:36). On the contrary, as far as its semantics is concerned, the gram still remains in initial stages of the path, failing to be extended to a habitual sense. Thus, the increased grammaticalisation status of the KAD construction is conditioned by its more verbal nature. However, following Creissels (1983a:171), Tröbs (2004a:141-142, 2009:199-200, 202-206) suggests that the KAD locution still preserves some properties that link it to nominal constructions. For instance, the focus particle *le* can appear between the verbal base and the postposition *kaŋ*. To conclude, the KAD gram would have developed from a nominal variety, identical to the Nominal KAD form, which will be analysed in section 2.2, below.

The comparative evidence is compatible with the proposed classification of the KAD gram. In Central Mande, progressives derived from locative sources are quite abundant. One of such locative progressives is a construction composed of a non-verbal predicator and postposition cognate to Basse Mandinka *kaŋ*. Apart from Mandinka, this type is found in Maninka (*yé V kàŋ*), Maninka of Niokolo (*bé V kan*) as well as Bambara (see below) and Bambara of Segou (*bi à kàŋ kà V*; Tröbs 2004a:122-135, 2009:196). The formations in Maninka and Maninka of Niokolo seem to be identical to the Basse Mandinka gram and have been classified as progressives or actual presents (cf. Friedländer 1992:69, Tröbs 2004a:139, 2009).

The situation in Bambara is more complex. In Bambara, one finds periphrases that consist of a locative element genetically related to the Basse Mandinka non-verbal predicator *be* and the postposition *kaŋ*. To be exact, there are “periphrastic conjugations” (Koné 1984:15-17, Blecke 1988/2004:18) similar to the KAD gram that can express senses located in initial fragments of the imperfective cline, especially the idea of progressivity. All of them are nominal formations expanded by an adjunct verbal clause: *ù bé à kàn kà fólí fól* ‘They are busy with playing the tam-tam’ (Blecke 1988/2004:17-18) and *à bé kàn kà nkòni fól* ‘He is busy with playing the ngoni’ (Dumestre 1979 in Blecke 1988/2004:44). Even though these formations are regarded as parts of the periphrastic categories of the Bambara verbal system, they are defined as overt expressions of a progressive aspect. In other words, since they denote “[u]ne action qui est en cours au moment de l’énonciation, qui est donc commencée, mais pas encore terminée” (Blecke 1988/2004:44), they are classified as progressives. In all of them, the locative idea is overtly expressed by means of the non-verbal entity *bé* and the postposition *kàn* (Blecke 1988/2004:44). However, one should note that in contrast to the KAD gram in Basse Mandinka, the three constructions in Bambara do not link the cognate of the Basse Mandinka postposition *kaŋ* to a verbal base but to a nominal entity, a pronoun or a noun, which is further expanded by an adjunct verbal clause (for a detailed discussion, cf. Koné 1984:15-17 and Blecke 1988/2004:17-18; see also Dumestre 2003, Kastenholz 1998, Bailleul 2000, Tröbs 2009). A similar periphrastic chain is found in Bamako of Segou where

the “Progressive II” is a composition of the locative non-verbal predicator, a cataphoric third person pronoun, postposition *kàŋ* and infinitive phrase (infinitive marker *kà* and a verbal base; Tröbs 2004a:144). Accordingly, while the progressives in Maninka dialects exhibit the stage of (formal and semantic) grammaticalisation that is similar to that characterising the Basse Mandinka KAD gram, the locutions in Bambara seem to be at the very origin of their grammaticalisation. It is from them that other more advanced (at least structurally) constructions emerge due to the loss of the cataphoric pronoun and the postposition which heads it (Tröbs 2004a:145; see also Tröbs 2009:197-198, 201-205). However, if this is the case, the Bambara periphrases – even though built on a similar locative nominal schema – are genetically distinct from the KAD gram in Mandinka and Maninka and its possible source. As mentioned, both types derive from a locative schema. However, while the former (Bambara) conveys the verbal action by means of an infinitive phrase, the latter ((Basse) Mandinka and Maninka) is assumed to have originally done so by using a verbal noun.

To conclude, the meaning, form and possible origin jointly demonstrate that the KAD construction in Basse Mandinka is a non-advanced, imperfective-path gram. Consequently, the dynamic definition of the KAD gram developed in this dissertation, harmonises with the opinion defended by Tröbs (2003; see also Tröbs 2004a and 2009) according to whom the periphrases with the postposition *kay* ‘on’ constitute the third – and the most recent – cycle of the grammaticalisation of imperfective formations in Manding (see, section 2.6 in this chapter; see also next section 2.2 on the other *kay* locution – the Nominal KAD gram).

## 2.2 The nominal KAD gram

The next construction – structurally quite similar to the KAD form described in section 2.1 above – is composed of the non-verbal predicator *be* ‘be’ (in the negative *te* ‘not be’), a verbal noun expressing a given action and the element formally identical to the postposition *kay* ‘on, at’ (see example 2.18.a, below). Thus, this formation differs from the KAD gram by using the verbal noun of a lexical verb instead of its base. Therefore, this variety will be referred to as the Nominal KAD locution or, in an abbreviated version, NomKAD. Thus, the notion ‘nominal’ in the chosen label makes an obvious reference to the original nominal character of the entity that conveys the sense of an activity, i.e. to the verbal noun, for instance *siinoo* ‘sleeping’ and *pasiroo* ‘ironing’ as in examples (2.18.a-b).<sup>92</sup>

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<sup>92</sup> I am aware that the label ‘nominal’ may be unfortunate because verbal slots in grams that use verbal bases may also be viewed as non-finite (compare the discussion in Rowlands 1959:145-146, Menessy 1962, Kastenholz 2003:87 and Nikitina 2008a). Inversely, verbal nouns that form nominal grams may occur without the marker *-o* (e.g. as a first element in compounds and in negative constructions). Moreover, “simple” grams (i.e. non-nominal grams) may diachronically derive from nominal constructions. Accordingly, the item that nowadays appears as a base might have been a verbal noun previously. However, from a synchronic perspective, elements expressing the type of action or state found in grams referred to as ‘nominal’ generally exhibit more morpho-syntactic and semantic properties linking them to nouns than grams that employ verbal bases (even if such bases are treated as non-finite themselves). On the whole, the tag ‘nominal’ should be viewed as approximate – grams match it to a certain degree and this fulfilment corresponds to the degree of grammaticalization. That is, from a grammaticalization perspective, verbal constructions can be viewed as more or less verbal (finite) or nominal. The former constructions usually reflect a higher extent of grammaticalization. Therefore, grams built around verbal bases can be regarded as more fientive or verbal than those built around

The most common variety of the NomKAD gram used in Basse and its neighbouring environs includes constructions derived from underlying intransitive bases (cf. *siinoo* in 2.18.a) and transitive bases which in the KAD form leave the direct object unexpressed (cf. *a paasi* in 2.18.b). However, while in the verbal KAD locution – as well as in all other non-nominal formations – in order to remain active, transitive verbs must have an overt object (*M be a safee kaj* ‘I am writing (it)’), in the NomKAD gram, the active meaning appears even though the formation fails to employ any explicit object (*M be saferoo kaj* ‘I am writing’; on the issue of transitivity, see further below in this section):

- (2.18) a.     M     **be**     **siinoo**     **kaj**  
           I     NVP   sleeping     KAD  
           ‘I am sleeping’
- b.     M     baamaa     **be**     **paasiroo**     **kaj**  
           my    mother     NVP   ironing     KAD  
           ‘My mother is ironing’

In the examples quoted above, the NomKAD gram involves constructions in which the object of an underlying transitive predicate is not expressed (2.18.b). However, the NomKAD form also appears with entities that in English translations are rendered as overt direct objects. In such cases, the formation can be found in three morphosyntactic varieties. The first type consists of the non-verbal predicator *be* or *te*, a nominal base (usually accompanied by the morpheme *-o*; cf. *dindinkoo* in 2.19.a), a verbal noun, and the element homophonous with the postposition *kaj* (2.19.a). Instead of a substantive, it is possible to employ a lexeme that in English translation appears as a personal pronoun (2.19.b). The NomKAD form which will be analysed in this section will be understood as a class containing examples analogous to those provided in 18.a-b and 19.a-b.

- (2.19) a.     M     baamaa     **be**     dendinkoo     **paasiroo**     **kaj**  
           my    mother     NVP   shirt     ironing     KAD  
           ‘My mother is ironing the shirt’
- b.     M     baamaa     **be**     a     **paasiroo**     **kaj**  
           my    mother     NVP   it     ironing     KAD  
           ‘My mother is ironing it’

The second type of the nominal KAD formation, in which the object of the underlying base is expressed, differs from the previous class in the following: instead of the sequence composed of a definite substantive in *-o* and the verbal noun of a lexical verb, a compound noun is used. This compound noun consists of a substantival element employed in its bare stem form and the verbal noun. According to the official spelling rules of Gambian Mandinka, in such combinations, the nominal stem and verbal noun are written together: *dendinkopaasiro* ‘shirt-ironing’ or *yiritutoo* ‘tree-planting / planting of tree(s)’ (2.20.a-b; see Creissels 1983a, WEC

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verbal nouns, even though the bases can themselves be successors of nominal forms (cf. the Simple Past in Germanic languages).

1988, Tröbs 2004a). In this type of the NomKAD form, the verbal noun constitutes a complex – but yet single – purely nominal concept. Compound nouns are extremely common in Basse Mandinka and the class of compounds appearing in this subtype of the NomKAD construction does not differ from words such as *bendulaa* ‘meeting place’ (*beŋ* ‘meeting’ + *dulaa* ‘place’) or *duwaañikundaa* ‘department of tolls’ (*duwaañi* ‘toll’ + *kundaa* ‘department’), in which the first element always appears in its bare stem form.<sup>93</sup>

- (2.20) a. M    baamaa        **be**    dendinkopaasiroo    **kaŋ**  
 my    mother        NVP   shirt-ironing        KAD  
 ‘My mother is busy with ironing shirts (lit. she is at shirt-ironing)’
- b.    Ì        **be**    yiritutoo        **kaŋ**  
 they   NVP   tree-planting    KAD  
 ‘They are busy with the plantation of trees (lit. tree-planting)’

Lastly, the third subtype of the NomKAD construction with an overt object of the underlying verbal base employs the definite form of nouns in *-o*, including plurals, or pronouns (just like the first type described previously) but links them to the verbal noun by means of the postposition *la* ‘of’ (see examples 2.21.a-d, below). In this locution, the status of the verbal noun is clearly nominal because the chain *yiroo la seneroo* can only be interpreted as a nominal phrase (‘the planting of a/the tree’) and constitutes a clear parallel to genitive chains such as *dindiŋo la bukoo* ‘the book of the child’ or *a la bukoo* ‘his book (literally: the book of him)’. In genuinely verbal constructions (such as the KAD form analysed in section 2.1), nominal or pronominal direct objects can never be linked to the base of a verb by means of the postposition *la* (2.21.e).

- (2.21) a. M    baamaa        **be**    dendinkoo    la    **paasiroo**    **kaŋ**  
 my    mother        NVP   shirt        of    ironing        KAD  
 ‘My mother is busy with the ironing of my shirt’
- b.    M        **be**    yiroo    la    **seneroo**    **kaŋ**  
 I        NVP   tree    of    cultivating    KAD  
 ‘I am busy with the cultivating of a tree’
- c.    M        **be**    yiroo    niŋ    na    **seneroo**    **kaŋ**  
 I        NVP   tree    this   of    cultivating    KAD  
 ‘I am busy with the cultivating of the/this tree’
- d.    M        **be**    yiroolu    la    **seneroo**    **kaŋ**  
 I        NVP   trees        of    cultivating    KAD  
 ‘I am busy with the cultivating of (the) trees’
- e.    \*\*M    **be**    yiroo    la    sene        **kaŋ**  
 I        NVP   tree    of    cultivate    KAD  
 Intended meaning: ‘I am cultivating a tree’

<sup>93</sup> Inversely, this means that this variety of the NomKAD gram cannot be employed if the nominal complement of the verbal noun is definite or plural, or if it is a pronoun.

An interesting property of the NomKAD formation – clearly related to its nominal nature – is the already mentioned fact that this locution may be employed with no overt “direct object”, yet preserving an active character. As will be explained below, this is possible because the element that in translations into Indo-European languages usually appears as a direct object is not a direct object properly speaking – it is a direct object of the verbal base from which the verbal noun has been derived. In Basse Mandinka, transitive verbs when used without an overt direct object regularly receive an intransitive and/or de-transitive (passive) reading. This means that in order to “keep” a transitive verb active (e.g. *a safee* ‘to write’), the direct object must be expressed (e.g. *A be a safee kaŋ* ‘He is writing (it)’). In a contrary case, the sense is de-transitive and/or passive (e.g. *A be safee kaŋ* ‘It is being written’). This rule does not apply to the NomKAD gram which maintains an active value of transitive verbs although a direct object of the underlying base fails to be overtly provided (see the sentence in 2.22.b where the object *yiroolu* from example 2.22.a is not expressed, but the construction still remains active).

- (2.22) a.    Ì        **be**    yiroolu        **tutoo /tuturoo**        **kaŋ**  
               they    NVP    trees            planting                KAD  
               ‘They are planting trees’
- b.    Ì        **be**    **tuturoo**        **kaŋ**  
               they    NVP    planting        KAD  
               ‘They are planting’

This invariably active nature of transitive verbs means that the Nominal KAD gram does not generate passive uses. Hence, the sentence quoted below cannot receive a passive reading although the direct object of an underlying transitive verb (i.e. a verb from which the verbal noun has been derived) is left unexpressed (see example 2.23). This does not, however, imply that the phrase in example 2.23 is *per se*, incorrect. It may still be used in an active sense with a rather odd meaning of ‘The trees are cultivating (i.e. the trees are doing the cultivation)’.

- (2.23)        \*\*Yiroolu        **be**    **senoo / seneroo**        **kaŋ**  
               trees                NVP    cultivating                KAD  
               Intended meaning: ‘Trees are being cultivated’

I have already mentioned that the element that corresponds to a direct object of the underlying base (and that, when translated into Indo-European languages, usually appears as the direct object of a transitive verb) is not a direct object. It should rather be analysed as, at least originally, a genitival complement (or a genitival modifier) of the nominal entity, viz. the verbal noun (Tröbs 2004a:141). This complement forms a nominal phrase whose head is the verbal noun. It determines the verbal noun, standing in a broadly understood genitival relation. It is important to observe that such complements may be determined by means of the morpheme *-o* (*yiroo*) or by other attributive entities (*yiroo niŋ*). They may contain the plural marker *-olu* (*yiroolu*). They can also be pronominal (*a*). In all such cases, the entities *yiroo*,

*yiroo niŋ*, *yiroolu* or *yiroo ninnu* are complements of the noun (head of the nominal phrase), while the pronoun *a* corresponds to a possessive pronoun (compare *a baamaa* ‘his father’).

- (2.24) a.     M     **be**     yiroo   ninnu   **seneroo**     **kaŋ**  
           I     NVP   tree    these   cultivating   KAD  
           ‘I am cultivating g these trees’
- b.     M     **be**     a       **seneroo**     **kaŋ**  
           I     NVP   its     cultivating   KAD  
           ‘I am cultivating it’

## 2.2.1 Semantic potential<sup>94</sup>

### 2.2.1.1 Grammatical tradition

A study of the semantic properties – and related to them, morphosyntactic attributes – of the NomKAD construction are absent in almost all studies devoted to the Mandinka language (cf. Macbrair 1842, Hamlyn 1935, Gamble 1987, Lück & Henderson 1993, Colley 1995, Wilson 2000, WEC 2002, Dramé 2003). Uniquely Creissels (1983a), Tröbs (2004a, 2009) and Creissels & Sambou (2013) discuss the NomKAD periphrasis. First, as to its meaning, they define the construction as a typologically common progressive category, e.g. *A be domoroo kaŋ* ‘He is eating’. More specifically, in their view, the gram regularly conveys ongoing or actual actions at a given reference time. However, in all the cited works, the discussion mainly concerns two classes of sentences: a) those that include verbal nouns only, with no genitival modifier – they are derived either from intransitive verbs or from transitive verbs whose object is left unexpressed (cf. 18.a-b, above) and b) those that exhibit a genitival modifier in its bare stem – they are derived from transitive verbs and the underlying object is expressed, appearing in an indefinite form (see, example 20.a-b, above). On the contrary, the instances where the underlying object appears in a definite form (e.g. singular in *-o*, plural in *-olu* or with a pronominal modifier) as well as the cases where the underlying object surfaces as a pronoun are not discussed (see, examples 19.a-d). These cases (i.e. where the genitival modifier is definite or where a pronoun is used) are relatively common in Basse.

### 2.2.1.2 Evidence from Basse

In qualitative terms, the semantic potential of the NomKAD gram is identical to that offered by the KAD formation described in section 2.1. The construction is typically employed in order to express the idea of ongoingness, indicating activities that are being performed at a given reference time. Most typically, the KAD gram equals a progressive aspect. By doing so, it appears with dynamic predicates, which denote actions necessitating constant input of energy. Accordingly, within a present time frame, the expression approximates a progressive

<sup>94</sup> This sections draws on my papers “Nominal *KAD* form in Basse Mandinka – its cognitive mapping and taxonomical status (PART 1/ PART 2)” published in *Lingua Posnaniensis* 55/1 and 56/1 (cf. Andrason 2013i and 2014c).

present (2.25.a), while, in a past temporal sphere, it equals a progressive past category (2.25.b). On the contrary, the NomKAD locution cannot appear in main clauses with a future temporal reference, offering a use where it would approximate a progressive future (2.25.c).

- (2.25) a. M    **be**    **diyaamoo**    **kaŋ**    saayinj  
 I    NVP    talking    KAD    now  
 ‘I am talking now’
- b. Kunuŋ    talaŋ    fula    m    baamaa    **be**    **tabiroo**    **kaŋ**  
 yesterday    hour    two    my    mother    NVP    cooking    KAD  
 ‘Yesterday at two o’clock, my mother was cooking’
- c. \*\*Saama    talaŋ    luulu    m    **be**    **safeeroo**    **kaŋ**  
 tomorrow    hour    five    I    NVP    writing    KAD  
 Intended meaning: ‘Tomorrow at five, I will be writing’

Nevertheless, just like in the case of the KAD gram, it is possible to construct contexts where the whole “scene” locates the activity in the future. This especially holds true for temporal clauses with *nij* ‘when, if’ (2.26.a) and for clauses introduced by *ko* ‘that’ (2.26.b). In the former case, the form is employed as an apodotic progressive future, while, in the latter, it approximates a relative progressive present introduced by a verb in the future tense.

- (2.26) a. Sooma    talaŋ    seyi  
 Tomorrow    hour    eight  
 ‘Tomorrow at eight,  
       nij    i    **be**    leetaroo    **safeeroo**    **kaŋ**,  
       when    you    NVP    letter    writing    KAD  
       when are writing the letter (i.e. when you will be writing),  
       m    be    naa    la    ite    le    yaa  
       I    NVP    come    to    you    FOC    at  
       I will come to your place’
- b. Sooma,    a    be    fo    la    ko  
 tomorrow    he    NVP    say    to    that  
 ‘He will say tomorrow that  
       a    **be**    **kuurajo**    **kaŋ**  
       he    NVP    being.sick    KAD  
       he is getting sick’

The NomKAD formation can sometimes be used in a simultaneous function. It accompanies the main action expressed by an introductory verb (usually a perception or sensory predicate) from a foregoing sentence and expresses the condition of the object of this first predicate (2.27.a). On certain occasions, the subject of the verbal noun is not expressed, giving rise to a locution akin to the *accusativus cum infinitivo* of Indo-European languages (2.27.b).

- (2.27) a.    **Ŋa**    a       je       a       **be**    **safeeroo**    **kaŋ**  
 I.did   him    see    he    NVP   writing    KAD  
 ‘I saw him (as) he was writing’
- b.    **Kewolu**       ye       nte    moyi    **diyaamoo**    **kaŋ**  
 men        did    me    hear    speaking    KAD  
 ‘The men heard me speaking’

Although the NomKAD gram is most frequently employed with dynamic predicates, it may also be found with verbs denoting non-dynamic activities, situations or postures. When formed with predicates such as *siinoo* ‘sleep’, *loo* ‘stand’<sup>95</sup> or *a miira* ‘think’, the locution indicates that a given activity is being performed in an uninterrupted manner, approximating the category of a continuous aspect. Again, the reference time is typically present (2.28.a-b) or past (2.28.c):

- (2.28) a.    **M**       **be**       **siinoo**       **kaŋ**  
 I       NVP   sleeping       KAD  
 ‘I am sleeping’
- b.    **A**       **be**       **miiroo**       **kaŋ**  
 he    NVP   thinking       KAD  
 ‘He is thinking’
- c.    **Kunuŋ**        **talaŋ**    **seyi**    **m**       **be**       **siinoo**        **kaŋ**  
 yesterday    hour    eight    I       NVP   sleeping        KAD  
 ‘Yesterday at eight, I was sleeping’

Nevertheless, properly static predicates (in particular, verbs of cognition and emotions such as *a loŋ* ‘know’, *a koŋ* ‘hate’, *a kanu* ‘love’) do not convey the continuous meaning of an ongoing situation comparable to the usage of the verb *siinoo* described above. They generally adjust to the properly progressive character of the gram and receive a clearly dynamic ingressive interpretation. Consequently in such cases, the formation is not used with the force of a continuous aspect, but is rather employed as an exemplary progressive category:

- (2.29) a.    **M**       **be**       a       **loŋo**        **kaŋ**  
 I       NVP   its    knowing       KAD  
 ‘I am getting to know it’
- b.    **M**       **be**       a       **kanoo**        **kaŋ**  
 I       NVP   his    loving        KAD  
 ‘I am getting to love him’

In a similar vein, when the NomKAD construction is formed with adjectival verbs, the value of the gram is consistently progressive. This means that adjectival verbs are understood in a dynamic manner in the NomKAD formation, conveying the meaning of – present (2.30.a) or past (2.30.b) – ingression:

<sup>95</sup> The verbal nouns of *siinoo* and *loo* are apparently undistinguishable from the verbal bases.

- (2.30) a. A **be koyoo kaŋ** saayin  
 it NVP being.white KAD now  
 ‘It is getting white now’
- b. A **be fiŋo kaŋ** nuŋ  
 it NVP being.black KAD then  
 ‘It was getting black’

Additionally, it is possible to use the NomKAD form to express iterative activities that, although portrayed as in progress, correspond to recurrent events. Inversely, one could propose that the repetition is depicted as consisting of a set of independent progressive events:

- (2.31) a. Suto-wo-suto talaŋ taŋ a **be tabiroo kaŋ**  
 every.night hour ten he NVP cooking KAD  
 ‘Every night at ten, he cooks’ (i.e. is busy with cooking)
- b. A **be karaŋo kaŋ** soomanda-wo-soomanda  
 he NVP studying KAD every.morning  
 ‘He studies every morning (i.e. is busy with studying)  
 karambuŋo kono Basse to  
 school in Basse in  
 in the school in Basse’

This iterative character may clearly be observed in the class of adjectival verbs. When located in a context of repetition, adjectival verbs invariably offer the value of ingressive reiteration: they portray the repetitive action as a collection of individual, ongoing, ingressive events. If a speaker wants to express a non-ingressive customary activity or a general habitual action, he or she regularly employs the KA form (cf. section 2.4, below).

- (2.32) a. N na dendikoo **be koyoo kaŋ** luŋ-wo-luŋ  
 I of shirt NVP being.white KAD every.day  
 ‘My shirt is getting white every day’
- b. Ñinaŋ m **be kuaraŋo kaŋ** tariyaake baake  
 this.year I NVP being.sick KAD quickly very  
 ‘This year, I get sick very quickly’

However, in certain infrequent cases, the NomKAD construction can introduce repetitive facts with no palpable progressive or ongoing nuances, simply portraying them as habitual (2.33.a). This habitual sense is also patent in examples where the NomKAD locution denotes activities whose temporal extent spans periods of time significantly larger than a current actuality (2.33.b-c). Once more, the KA form is preferred in this function (cf. the same behaviour of the KAD gram discussed in section 2.1).

- (2.33) a. A     **be**     **siinoo**     **kaŋ**   suwo   kono   suto-wo-suto  
           he    NVP   sleeping    KAD   home   in     every.night  
           ‘He sleeps at home every night’
- b. Ñinaŋ         m     **be**     yiroolu **tutoo**         **kaŋ**   Basse  
           this.year    I     NVP   trees   planting         KAD   Basse  
           ‘This year, I plant trees in Base’
- c. Ñinaŋ         a     **be**     **karajo**         **kaŋ**  
           this.year    he    NVP   studying         KAD  
           ‘This year, he studies’

Lastly, the NomKAD gram may be employed as an inclusive perfect, where once more the duration is the focus (2.34.a). This durative sense is more common if the time span is relatively short, especially involving a few hours or a few days. The inclusive perfect value may similarly be detected in a past time frame, corresponding to a pluperfect or past anterior category (2.34.b). The use with a gnomic sense, although possible, is extremely rare, being usually avoided. In this function, the KA form is preferred.

- (2.34) a. A     **be**     **siinoo**     **kaŋ**   luŋ   saba  
           he    NVP   sleeping    KAD   day   three  
           ‘He has been sleeping for three days’
- b. A bataata    nuŋ; a     **be**     **tabiroo**         **kaŋ**   suutoo bee  
           she.was.tired   then; she   NVP   cooking         KAD   night   whole  
           ‘She was tired; she had been cooking the whole night’

Although from a qualitative perspective, the semantics of the NomKAD form is fully equivalent to that offered by the KAD gram, the two grams differ quantitatively. Namely, the latter is much more frequent than the former. In the database, the NomKAD construction is approximately ten times less common than its verbal homologue. Additionally, if a verbal noun is to be used instead of the base, the interviewed speakers generally prefer the form with *la* (cf. section 2.3). This means that the NomKAD construction is the least frequent out of the three formations whose semantic – albeit not functional – potential is comparable: KAD (section 2.1), NomKAD (the present section) and NomLA (section 2.3).

### 2.2.2 Dynamic map

The evidence provided in the previous section enables us to conclude that the values of present or past ongoingness (in particular, its simultaneous and progressive subtypes) are the most prototypical senses of the NomKAD gram. To be exact, when derived from dynamic verbs, the NomKAD locution typically indicates present and past progressive actions. In order to use the form with a future reference, special environments need to be constructed. In the case of certain non-dynamic and/or situational predicates, the formation denotes present and past continuous activities and situations. However, static verbs of cognition and emotions as well as adjectival predicates do not derive the continuous meaning of an ongoing situation,

but rather receive a dynamic ingressive reading in harmony with the dominant progressive character of the gram. The construction also denotes iterative activities, portraying the iteration as a collection of progressive and/or ingressive events. In rare instances, the form may also express habitual and time-extended activities. Moreover, it can denote situations or activities that have been occurring since a determined moment in the past, offering the sense of a present or past inclusive perfect.

All of this signifies that the semantic content of the Nominal KAD gram is identical to that displayed by the other construction built on the non-verbal predicator *be* and the entity *kan*, i.e. the KAD periphrasis. If we compare the semantic potential of the Nominal KAD gram with the variant that employs the verbal base instead of the verbal noun, no differences with respect to temporal, aspectual and/or taxis values may be observed. Put differently, the two expressions are semantically equivalent. However, as already explained, the KAD and NomKAD forms differ as far as the overall frequency of their occurrences are concerned: the former is significantly more common than the latter. Additionally, from a functional perspective, the two grams fail to be identical. This functional difference stems from their distinct structures: the verbal KAD form can be de-transitive and passive, while the nominal variety may never be so. On the contrary, it is invariably active even in the cases where the object of an underlying transitive verbal base is unexpressed.

Given the semantic equivalence of the NomKAD and KAD grams, the semantic maps of the two formations are necessarily identical. Accordingly, all the different aspectual, taxis and temporal senses conveyed by the NomKAD can be grasped in their totality and explained as manifestations of the imperfective path. To be exact, the semantic potential of the NomKAD gram corresponds to a non-advanced fragment of the imperfective cline, located in the present and past time frames. The sense of simultaneity and the progressive value – typically available with dynamic, static and adjectival roots – match two initial stages of the imperfective cline. However, with some non-dynamic situational verbs, the locution offers a value of continuity, which reflects a second phase on the imperfective trajectory. In all such cases – i.e. when employed as a simultaneous, progressive or continuous category – the NomKAD gram introduces ongoing processes or activities. Nevertheless, the locution quite regularly introduces progressive and/or ingressive activities that are repeated, forming a frequentative collection of individual, usually ingressive, events and situations. This property of the NomKAD construction constitutes an intermediate stage between an exemplary ongoing progressive(-continuous) category and a prototypical habitual gram. Moreover, in rather uncommon instances, the NomKAD form may convey the sense of habitual activities and actions that span larger periods of time, exhibiting a further advancement on the path. Both in the habitual and durative functions, the nuance of ongoingness is either unavailable or secondary. The use of the NomKAD expression in the sense of an inclusive perfect provides another case where the duration of an action or activity is in focus, while the current ongoingness is less patent. Finally, extremely rare instances of the gnomic use of the NomKAD show that this value does not enter into the prototypical semantic field of the gram. If the form is employed within a past time frame, its force is analogous and, as expected, usually fails to provide senses of past habituality or past perfectivity (either punctual or global).

To conclude, it is possible to dynamically classify the formation as a young imperfective diachrony due to the following reasons: a) the simultaneous, progressive and iterative domains are prototypical; b) continuous, habitual and durative domains are less exemplary, being restricted to a few verbs or less common cases; c) the gnomic sense, albeit possible, is practically unavailable. In conformity with this non-advancement on the cline, the majority of non-dynamic predicates (with the exception of some situational or postural roots) acquires an ingressive (and, thus, dynamic) reading in the NomKAD construction. The entire semantic potential of the NomKAD form can be mapped by employing the chaining based upon the imperfective path in the following manner:

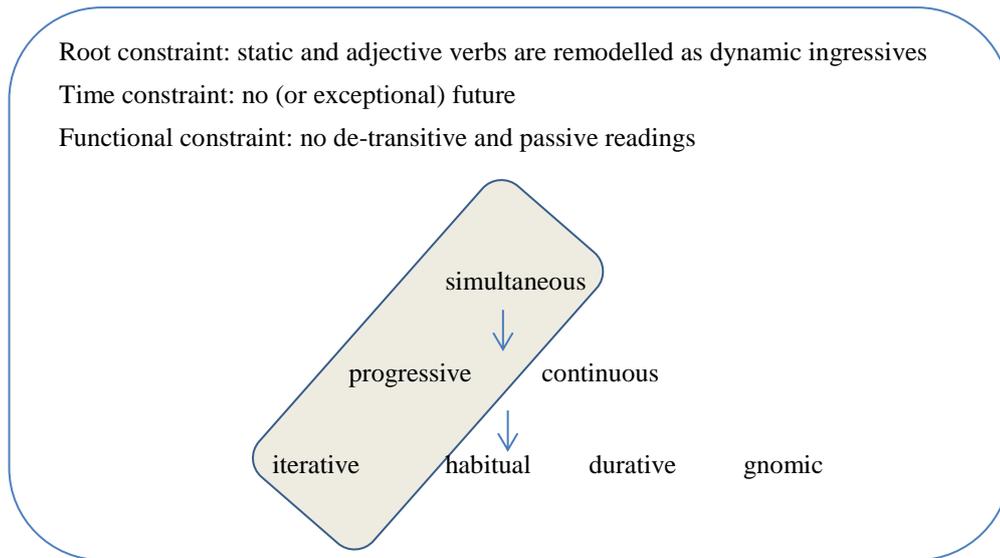


Figure 2.4: Map of the semantic space of the NomKAD gram

A linear representation of the map posited above can be formulated in the following way:

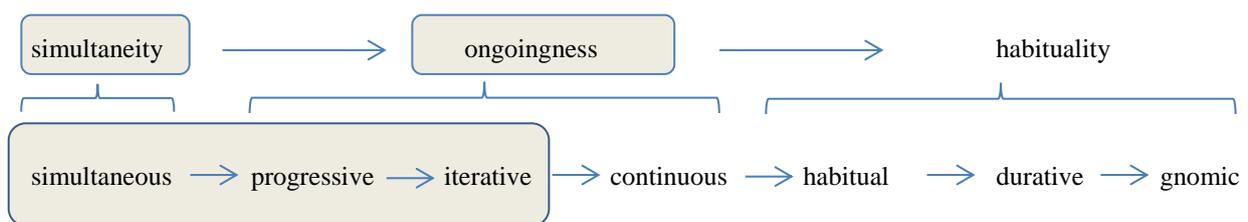


Figure 2.5: Linear model of the semantic space of the NomKAD gram

Consequently, a wave interpretation – either rough (Figure 2.6.a) or smoothed (Figure 2.6.b) – of the linear mapping can be posited as follows:

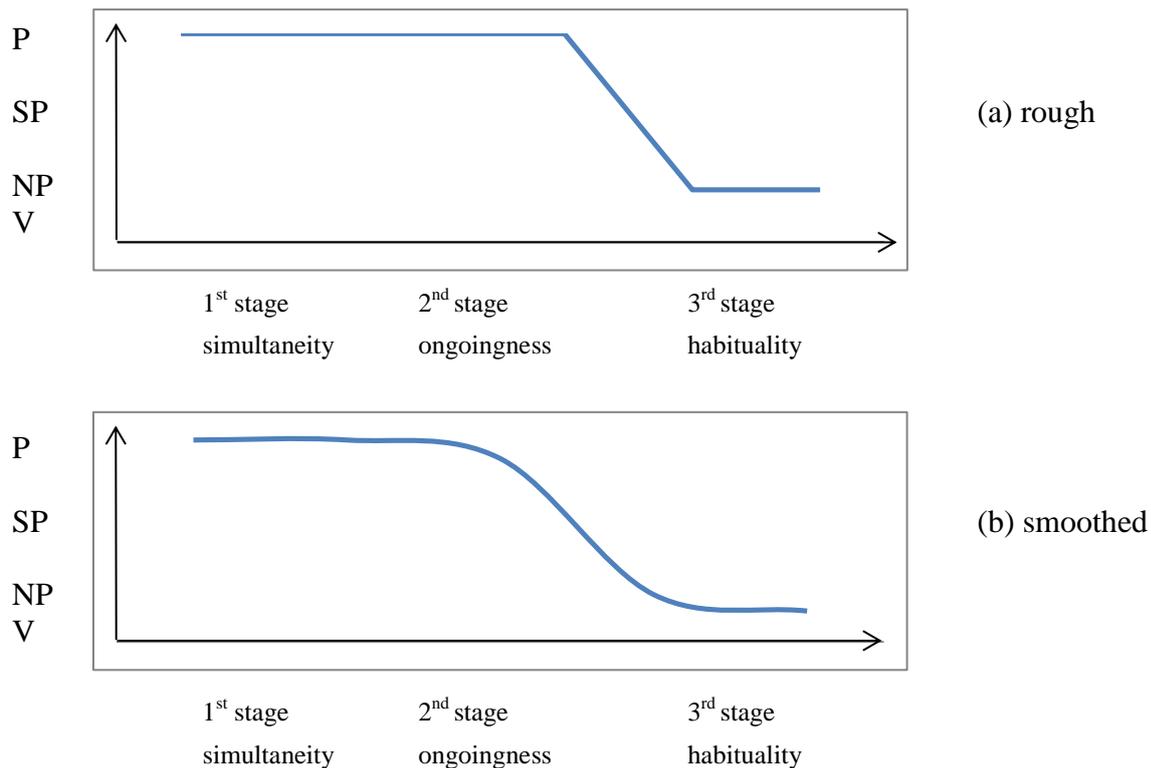


Figure 2.6: Wave model of the semantic space of the NomKAD gram

The form of the NomKAD periphrasis fully corroborates the dynamic definition in terms of a simultaneous-progressive input developing along the imperfective cline. As explained in sections 1.2.3.1 and 2.1.2, typological studies teach us that the original value of progressives commonly corresponds to the following idea: “the subject is located (spatially) in the midst of doing something (i.e. in the midst of an activity at reference time)” (Bybee, Perkins & Pagliuca 1994:136). This means that progressive grams and their evolutionary successors (i.e. continuous and imperfective formations) are often derived from locative categories, where the locative connotations of the subject and its activity are in focus (cf. Anderson 1973, Traugott 1978, Bybee, Perkins & Pagliuca 1994:137 and Ebert 2000:607). In such original constructions, the item that makes reference to the location is usually identical to positional copulas or other “*be*-like” entities, including postural verbs or non-verbal items. Furthermore, the idea of a given activity is commonly conveyed by verbal nouns or gerunds (Bybee, Perkins & Pagliuca 1994:128-131 and Ebert 2000:607). Thus, the form of a main verb – i.e. of the element that identifies the type of action – is usually nominal (cf. Tröbs 2004a). Subsequently, the locative sense ‘be in place of doing’ gives rise to a busy sense and, later, to a prototypical progressive value ‘be at doing’ (Bybee, Perkins & Pagliuca 1994:130, Ebert 2000:607 and Bertinetto, Ebert & de Groot 2000:540).

The structural properties of the NomKAD gram are consistent with this, arguably most plausible, source of the imperfective cline explained in the previous paragraph. The nominal character of the formation is evident due to the following traits: a) its “core” entity is constituted by a verbal noun; b) the relation between the verbal noun and its complement is genitival: by juxtaposition (*yiroo tutoo*), by incorporation (compound nouns *yiritutoo*) or by

means of the postposition *la*, *yiroo la tutoo*; c) the entity which corresponds to the object of the underlying verb (*ka yiroo tutu* ‘to plant a tree’) constitutes a complement of the head of a nominal clause (the verbal noun) in the NomKAD locution. By doing so, the formation does not need to comply with certain rules which are obligatory for fully verbal grams. To be exact, the principle concerning the presence and/or absence of overt objects of transitive roots is not respected. An entity which corresponds to the object of the underlying transitive verb can be omitted although the construction will still preserve its active character. Inversely, the lack of an item that corresponds to the object of the verb from which the verbal noun has been derived does not yield de-transitive and/or passive readings. As a result of this behaviour (i.e. failing to fulfil the above-mentioned principles, otherwise compulsory for proper verbal entities), the NomKAD gram cannot appear in de-transitive or passive constructions: in all its uses, the formation is invariably active. This morphosyntactic behaviour again makes explicitly patent the nominal character of the NomKAD form.

As for the locative components – which are typical sources of progressive grams developing along the imperfective cline – the NomKAD construction employs the most prototypical locative predicator in the Basse Mandinka language, viz. the non-verbal copula *be*,<sup>96</sup> which links the subject to the adpositional predicate composed by the postposition *kaŋ* and a verbal noun that expresses a given activity. Thus, the formation displays an underlying form which corresponds to the following literal expression: *to be at the act of performing something*. This structure clearly matches entirely nominal, locative/busy locutions, common in Basse Mandinka, such as those in 2.35.a and 2.35.b, below. In these phrases, the periphrasis constructed by the predicator *be* and the postposition *kaŋ* employs purely nominal segments as postpositional complements, i.e. the interrogative pronoun *munne* ‘what?’ and the pronoun of the third person singular *a* ‘he, she, it’. The NomKAD formation differs from these types of locutions exclusively in the fact that, instead of a pronoun, it uses a verbal noun. This type of a locative, non-verbal, adpositional, predicative construction with the meaning ‘be at something’ most probably constitutes the original and lexically transparent input from which the NomKAD form has emerged. As explained, such locative nominal, frequently adpositional, constructions constitute an extremely productive source of progressive grams which develop along the imperfective path.

- (2.35) a.     I       **be**     munne **kaŋ**?  
           you    NVP   what   on  
           What are you busy with? / What are you doing?
- b.     M       **be**     a       **kaŋ**  
           I        NVP   it       on  
           I am busy with it / I am doing it (Gamble 1987:39; cf. the Spanish  
           correspondence *Estoy en ello* ‘I am at it’; cf. also Creissels 1983a:171)

The argumentation exposed above harmonises with the views formulated by Tröbs (2004a, 2009) who regards progressives built on a locative-nominal schema as the most original stages of the grammaticalisation of progressive constructions in Manding. Accordingly, the

<sup>96</sup> On the origin of the non-verbal predicator *be*, see section 2.1.2.

NomKAD gram would constitute a case of the first stage of grammaticalisation of progressives in which the locative input schema ('x is at y') is extended by substituting a concrete noun by a verbal noun (Tröbs 2004a:150, 2009). As explained in section 2.1.2, this structure – exhibited by the NomKAD formation – would subsequently give rise to a more grammaticalised (i.e. more verbalised) construction, i.e. the KAD gram (cf. Creissels 1983a, Tröbs 2004a, 2009). Thus, the NomKAD gram would be classified as a 'new progressive': a nominal periphrasis not extended to habitual (cf. Tröbs 2004a:148-150, 2009:203-204).

Lastly, one can use comparative data to additionally validate the classification of the NomKAD form as an imperfective-path gram derived from a locative progressive input. In section 2.1.2, I have mentioned that Bambara possesses a locative formation built of a non-verbal locative predicator *bé* (cognate to Basse Mandinka *be*), a postposition *kàn* (cognate to *kay*) and a nominal complement of this postposition, to which an adjunct *kà* clause is added: *ù bé à kàn kà fólí fó* 'They are busy with playing the tam-tam' (Blecke 1988/2004:17-18) or *à bé kàn kà nkòni fó* 'He is busy with playing the ngoni' (Dumestre 1979 in Blecke 1988/2004:44; cf. Tröbs 2009:196-198). This construction is viewed as a regular nominal periphrastic expression of the progressive aspect and is a clear homologue of the Basse Mandinka NomKAD gram. As in Basse Mandinka, the original locative sense is patent due to the presence of the locative non-verbal predicator *bé* and the postposition *kàn* that places the subject of an action in the midst of the activity that is being performed (for a detailed discussion, see Koné 1984:15-17, Blecke 1988/2004:17-18, 44). However, as was already mentioned in section 2.1.2, there is a substantial difference between the Bambara and Basse Mandinka locutions: the former use an infinitive phrase (*kà* + base) in order to express the type of action that is being performed, whereas the latter employs a verbal noun. In addition, the cataphoric pronoun – present in the Bambara constructions – is absent in the NomKAD gram. Nevertheless, the conceptual metaphor that lies behind the two formations is very similar: both cases deal with locative-nominal periphrases in which the lexical verb is expressed by non-fientive categories, either an infinitive or a verbal noun, which are, in fact, typologically (and from a crosslinguistic perspective, also diachronically) related.<sup>97</sup>

To conclude, the semantic and formal properties of the NomKAD form indicate that this construction is a non-advanced imperfective-path gram. This definition is compatible with the proposal formulated by Tröbs who views periphrases composed of the postposition *kay* as the most recent – the third – cycle of the grammaticalisation of the imperfective formation in Manding (Tröbs 2003:3; see also Tröbs 2004a, 2009:202-206). In fact, given its clear nominal status, at least from a formal perspective, the gram would display an even lesser advancement than the verbal KAD construction discussed in section 2.1. However, as far as the TTAM semantics are concerned, the two formations demonstrate an identical degree of the progress on the imperfective cline.

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<sup>97</sup> In various languages (for instance, Semitic (Akkadian, Biblical Hebrew) or Indo-European (Germanic and Slavic), infinitives are in fact original nominal formations derived from *nomina actionis*.

### 2.3 The nominal LA gram

Another formation analysed in this chapter is the Nominal LA gram. This construction, which will hereafter be referred to by using an abbreviation NomLA, is highly similar to the NomKAD gram described in the previous section with the difference that, this time, the postpositional element that introduces the verbal noun is *la* instead of *kay*. Accordingly, the NomLA locution is a periphrasis composed of the non-verbal predicator *be* ‘be’ (in the negative *te* ‘not be’), a verbal noun and an entity that is homophonous with the postposition *la* ‘at, with’.<sup>98</sup> As was the case with the NomKAD construction, in the NomLA form, the lexical verb appears in its nominal form, i.e. as a verbal noun, hence, the term ‘nominal’ in the denomination.

- (2.36)           A       **be**    **tabiroo**    **la**  
                   he     NVP   cooking     LA  
                   ‘He is cooking’

One should note that although the element *la* in this construction has usually been classified as a postposition (cf. Creissels 1983a, Colley 1995:15), it has also been viewed as an infinitive marker (cf. Macbrair 1842:21-22). However, the analysis of the lexeme *la* as a postposition seems to be more adequate. First, the entity *la* does not introduce a proper infinitive but a verbal noun – clearly, a nominal formation. Second, the NomLA gram parallels a purely nominal expression built on a nominal unit, e.g. the interrogative pronoun *munne* ‘what’: *I be munne la?* ‘What are you doing?’ (lit. ‘What are you at?’). In this periphrasis, the lexeme *la* is doubtlessly a postposition. Third, the use of the morpheme *la* is analogous to the function of the postposition *kay* in the NomKAD locution: *M be diyaamoo kay* ‘I am [at] talking’.

Since the NomLA form is built on a verbal noun, it offers all the structural properties identified previously in the section dedicated to the NomKAD gram. Most importantly, the NomLA construction can never be employed in de-transitive or passive constructions. The meaning is always active either transitive or intransitive. Inversely, the absence of an overt entity that corresponds to the object of the verb from which the verbal noun has been derived does not trigger a de-transitive and/or passive reading as is the norm in fully verbal constructions (e.g. the KAD form). Moreover, in the constructions that are translated as transitive – i.e. in which the object of the underlying verb is overtly expressed – this apparent “direct object” is a genitival complement of the verbal noun.

- (2.37) a.       M       **be**    leetaroo       **mutoo**    **la**  
                   I       NVP   letter        receiving    LA  
                   ‘I am receiving a/the letter’

<sup>98</sup> The postposition *la* marks a broad locative relation and also conveys an instrumental sense (cf. *lá* in Bambara or *la* in Maninka; Koné 1984, Kastenholtz 1987/1988:194, 198, Tröbs 1999:368). According to Bailleul (1986), *lá* in Bambara is related to the lexeme *wílá* ‘place’ in Maninka. One should note that the element *la* can also be used as a derivational verbal prefix with a factitive and intentional value (Dumestre 1981:51-53, Koné 1984, Tröbs 1999:375-377). On this phenomenon in Bambara and Maninka, see Dumestre (1981) and Tröbs (1999), respectively.

- b. M    **be**    bukoo ñinj    **waafoo**    **la**  
 I    NVP    book    this    selling    LA  
 ‘I am selling that book’
- c. M    **be**    yiroolu    **senoo**    **la**  
 I    NVP    trees    cultivating    LA  
 ‘I am cultivating trees’
- d. M    **be**    **seneroo**    **la**  
 I    NVP    cultivating    LA  
 ‘I am cultivating trees’
- e. Yiroolu    **be**    **seneroo**    **la**  
 trees    NVP    cultivating    LA  
 \*\*Intended meaning: ‘Tree are being cultivated’

It must be noted that most adjectival verbs – in particular those that end in a properly verbal-adjectival morpheme *-yaa* (e.g. *beteyaa* ‘be good’ vs. *bete* ‘good’) – do not form the NomLA locution. They appear in a similar, though genetically clearly distinct, expression, viz. the LA gram (see section 5.1). As the NomLA periphrasis, this formation consists of the non-verbal predicator *be* and the postposition *la*. However, instead of the verbal noun, it employs an infinitive (i.e. the verbal base with the infinitive marker *la*). Compare, for instance, the sentence *M be diyaamoo la* with *M be diyaamu la*. As will be explained in section 5.1, the meaning of the LA locution most commonly corresponds to a future tense, e.g. *M be diyaamu la* ‘I will talk’ (cf. example 38.a). In order to form a locution which would be semantically analogous to the NomLA gram the vast majority of adjectival verbs employ the KAD gram discussed previously in section 2.1 (38.b):

- (2.38) a. M    **be**    **kendeyaa**    **la**  
 I    NVP    be.well    LA  
 ‘I will be well / get well’
- b. M    **be**    **kendeyaa**    **kaŋ**  
 I    NVP    be.well    KAD  
 ‘I am getting well’

Just like the NomKAD construction, the NomLA gram appears in three major sub-types: a) the verbal noun is derived from underlying intransitive verbs or from transitive verbs but with their object left unexpressed (*A be diyaamoo la* ‘He is talking’ and *A be domoroo la* ‘He is eating’; Creissels 1983a:167, Gamble 1987:25, Tröbs 2004a:141); b) the verbal noun is derived from underlying transitive verbs and the object is overtly expressed – it acts a genitival modifier and appears in an indefinite form (*A be bala-kosoo la* ‘He is playing the xylophone’; Creissels 1983a:36, Gamble 1987:25, Tröbs 2004a:141); and c) the verbal noun is derived from a underlying transitive verb and the object is overtly expressed, appearing however in a definite form (including plural morpheme; this type is absent in Creissels 1983a and Tröbs 2004a, but according to my informants, it does exist in Basse).

As far as the shape of the verbal noun is concerned, the traditional discussion of the NomLA gram in Mandinka suggest the following: when the underlying direct object is expressed, the long form of the verbal noun, i.e. the form in *-roo*, is not employed but the short variety in *-o* must be used (as well as the bare-stem form of the noun). However, when the direct object is not expressed, the long form of the verbal noun is used (i.e. with *-roo* or *-diroo*). The intransitive verbs take the short variant of the verbal noun (Creissels 1983a:36, 167, Gamble 1987:25, Colley 1995:8-9, WEC 2002:17-18, Tröbs 2004a:140-141). This distribution is much less strict in Basse (cf. section 1.1.3.3). Moreover, as already mentioned, overt objects (i.e. genitival modifiers in the NomLA gram) can appear in their definite forms (see examples 2.37.a-c).

### 2.3.1 Semantic potential

#### 2.3.1.1 Grammatical tradition

In general terms, the NomLA locution has almost uniformly been defined as a progressive category. According to Creissels (1983a:36, 167) and Creissels & Sambou (2013), the NomLA form should be classified as a prototypical progressive gram derived by means of a copula (i.e. the non-verbal predicator *be*) and a locative entity (i.e. the lexeme *la*): *A be dookuwo la* ‘He is working’, *A be domoroo la* ‘He is eating’ or *A be bala-kosoo la* ‘He is playing the xylophone’ (cf. also Rowlands 1959). This view has been maintained by Tröbs (2004a:140-141, 148) who, by building on Creissels’ discussion, defines the gram as a new progressive. It should be noted that Creissels (1983a) and Tröbs (2004a) – as well as the other researchers – are concerned with sub-types (a) and (b) of the NomLA gram (see the discussion above). This means that they analyse the NomLA construction derived from intransitive verbs (verbal noun in *-o*) and from underlying transitive verbs the object of which is not expressed (verbal noun in *-roo*), as well as the variety in which the underlying object (genitival modifier) is expressed, appearing in an indefinite (bare stem) form. Similarly, Gamble (1987:25) defines the locution as a progressive, although all examples provided by him refer exclusively to the present temporal sphere: *A be tabiroo la* ‘He is eating’ and *Ì be fiiroo la* ‘They are planting’. In the same vein, Colley (1995:14-15) understands the NomLA gram as a progressive category (in his terminology, a compound of a gerund and the postposition *la*), which displays an identical semantic force as the KAD gram: *A be taamoo la* = *A be taama kaŋ* ‘He is walking’ or *A be taamoo kaŋ nuŋ* = *A be taama kaŋ nuŋ* ‘He was walking’. Finally, by providing a similar analysis, WEC (2002:17-18) explains the NomLA periphrasis as a progressive aspect, commonly derived from dynamic transitive verbs.

2.3.1.2 Evidence from Basse<sup>99</sup>

The semantic potential of the NomLA formation *grosso modo* mirrors the two grams described previously. Thus, the most frequent function of the NomLA construction is to convey a progressive sense. As a prototypical progressive category, the gram regularly admits dynamic predicates, presenting the action expressed by the verbal noun as an ongoing activity, either in the present or past time frame:

- (2.39) a. M    **be**    bukoolu    **saŋo la**    saayin  
 I    NVP    books    buying LA    now  
 ‘I am buying books now’
- b. A    juubee!    A    **be**    duutoolu    **domoo**    **la**  
 him    see    he    NVP    mangoes    eating    LA  
 ‘Look at him! He is eating mangoes’
- c. M    **be**    n    na    motoo **waafoo la**    kunuŋ    talaŋ 10:15  
 I    NVP    me    of    car    selling LA    yesterday hour 10:15  
 ‘Yesterday at 10:15, I was selling my car’
- d. Luntaŋo    **be**    **miŋo**    **la**    nuŋ  
 guest    NVP    drinking    LA    then  
 ‘The guest was drinking’

In rare cases, the formation may be employed in order to introduce future progressive actions. This is even possible in main clauses. As a result, the NomLA form differs from the KAD and NomKAD grams, which do not appear in main clauses in a future time frame.

- (2.40) a. Jaari    ñinŋ waatoo,    m    **be**    **waafiroo**    **la**  
 next.year this time,    I    NVP    selling    LA  
 ‘Next year at this time, I will be selling’
- b. Saama talaŋ    seyi, m    **be**    sigareetoolu    **saboo la**  
 tomorrow hour    eight, I    NVP    cigarettes    smoking LA  
 ‘Tomorrow at eight, I will be smoking cigarettes’

Nevertheless, in the majority of cases where a future progressive value is to be expressed, verbal nouns necessitate the infinitive of the verb *a ke* ‘do’. This means that another construction is used, i.e. the LA gram (a type of a future), itself composed of the non-verbal predicator *be*, the infinitive marker *la* ‘to’, and the base of a lexical verb, in this case *a ke* ‘to do’ (on the LA form, see section 5.1). This formation is then used to introduce an action specified by the verbal noun which occupies the slot of the direct object of the verb *a ke* (see examples 2.41.a-b, below). It should be observed that such periphrases may also express

<sup>99</sup> The evidence presented in this section draws from my paper “The structure and meaning of the Nominal *BE...LA* “tense” in Basse Mandinka” published in *The Annals of Ovidius University Constanta* 23/1 (cf. Andrason 2012k).

prospective events where the progressive nuance is secondary or almost unavailable, approximating the category of a simple future tense:

- (2.41) a. M    **be**    **tabiroo**    **ke**    **la**  
 I    NVP    cooking    do    LA  
 ‘I will be cooking’ / ‘I will do cooking’ = ‘I will cook’
- b. Musoo ñiŋ    **be**                    **paasiroo**    **ke**    **la**  
 woman this    NVP                    ironing    do    LA  
 ‘The woman will be ironing’ / ‘She will do ironing’ = ‘She will iron’

Even though the progressive meaning of the NomLA construction predominates – and hence, the gram is particularly common with dynamic predicates – some less dynamic verbs are also tolerable in the periphrasis. In this regard, one should note that some non-dynamic predicates (for instance, certain activity and situational verbs) employed in the NomLA formation do not indicate the idea of progressivity, but rather express the continuity of a given action:

- (2.42)            A    **be**    **siinoo**            **la**    saayinŋ  
 he    NVP    sleeping    LA    now  
 ‘He is sleeping now’

However, in accordance with the dominant progressive character of the gram, most static predicates receive a dynamic – more specifically, ingressive – reading in the NomLA construction. They indicate that a given activity is in the process of being acquired.

- (2.43) a. M    **be**    **a**    **koŋo**            **la!**  
 I    NVP    his    hating            LA  
 ‘I am getting to hate him!’
- b. M    **be**    **pasoo**            **la**    a    **la!**  
 I    NVP    being.fed.up    LA    it    at  
 ‘I am getting fed up with it!’

In the same way, when a few adjectival verbs are employed in the NomLA construction, the meaning is dynamic and ingressive. Inversely, with such predicates, the locution is not employed with the force of a continuous aspect. In other words, if adjectival verbs appear in the NomLA formation, they invariably receive a dynamic reading, indicating that qualities and properties, expressed by the verbal noun are currently being acquired or materialised. By doing so, the gram displays one of the most prototypical characteristics of a dynamic, progressive category.<sup>100</sup>

- (2.44) a. M be    tara    la    suwo    kono.    M    **be**    **kuuraŋo**    **la**  
 I    NVP    stay    to    house    at    I    NVP    being.sick    LA

<sup>100</sup> This phenomenon is identical to the behaviour exhibited by the KAD and NomKAD formations discussed in sections 2.1 and 2.2.

- ‘I will stay at home. I am getting sick’
- b. A juubee! A **be koyoo la**  
 it see it NVP being.white LA  
 ‘Look at it! It is getting white’

The NomLA formation can also be used with a simultaneous value, accompanying another action expressed by the verbal form in the main clause (2.45.a). Frequently, the non-verbal predicator and its subject can be omitted yielding a more idiomatic type of an *accusativus cum infinitivo* construction (2.45.b).

- (2.45) a. Da a je a **be i tabiroo la**  
 I.did him see he NVP REFL dancing LA  
 ‘I saw him (as he was) dancing’
- b. Kewolu ye a moyi **diyaamoo la**  
 men did him hear talking LA  
 ‘Men heard him talking’

The NomLA gram may likewise express iterative progressive or ingressive actions (2.46.a-b), which on rare occasions can give rise to habitual senses (2.46.c), without, however, triggering the use of this formation to convey the idea of general truths or gnomicity.

- (2.46) a. A **be karaño la** luŋ-wo-luŋ talaŋ seyi  
 he NVP studying LA every.day hour eight  
 ‘Every day, at eight, he studies’
- b. Ñinaŋ m **be kuuraño la** kara-wo-kara  
 this.year I NVP being.sick LA every.month  
 ‘This year, I get sick every month’
- c. Ñinaŋ a **be karaño la** Banjul  
 this.year he NVP studying LA Banjul  
 ‘This year, he studies in Banjul’

The NomLA form – as any Basse Mandinka locution which is able to express meanings related to a present temporal sphere – can also be employed as an inclusive perfect where the idea of duration is in focus. In this case, it denotes activities that began in an overtly stated moment in the past but have continued into the present in an uninterrupted manner:

- (2.47) M **be safeeroo la** waati saba  
 I NVP writing LA hour three  
 ‘I have been writing for three hours’

All the senses mentioned previously can also be found with a past temporal reference. This means that, when employed within a past time frame, the NomLA gram usually functions as a progressive past (or ingressive progressive; 2.48.a-b) and iterative past, but less commonly

as a continuous past and only exceptionally as a habitual past. In the two latter functions, it is the KA form that is by far more frequently used.

- (2.48) a.      Kunuŋ            talaŋ    seyi    m        **be**    **safeeroo**    **la**  
                  yesterday    hour    eight    I        NVP    writing        LA  
                  ‘Yesterday at eight, I was writing’
- b.      M        **be**    **kuurajo**    **la**    nuŋ  
                  I        NVP    being.sick    LA    then  
                  ‘I was getting sick’

Although from a qualitative point of view, the semantic potential of the NomLA form is very similar to the meaning of the KAD and NomKAD constructions, it is less so if quantitative data are envisaged. Namely, the NomLA gram is significantly more common than another nominal formation, i.e. the NomKAD formation, being found at least ten times more often. The frequency of the KAD and NomLA locutions is comparable. The main difference between these two forms lies in the following facts. The KAD gram is preferred if the direct object is in focus, either being defined (*M be leetaroo safee kaŋ* ‘I am writing the letter’) or located in the subject position in a de-transitive construction (*Leetaroo be safe kaŋ* ‘The letter is being written’). On the contrary, the NomLA formation predominates if the verbal action is in focus while the object is less relevant, so that it may be left unexpressed (*m be safeeroo la* ‘I am writing’). Additionally, the KAD formation is also preferred if an adjectival base in *-yaa* is to be used. In such cases, the NomLA gram fails to be employed.

### 2.3.2 Dynamic map

Before designing a dynamic map of the NomLA formation, I will summarise the evidence introduced in the previous section. When used with dynamic predicates, the NomLA gram expresses present, past and, sporadically, future progressive actions. Similarly, when derived from a few adjectival verbs that do not end in *-yaa* and certain static predicates, the meaning is progressive and, in particular, ingressive. It is important to note that adjectival roots in *-yaa* do not appear in the NomLA periphrasis. Nevertheless, some activity and situational predicates employed in the NomLA formation denote the continuity of a given action. In such instances, the locution approximates the category of a continuous aspect. Additionally, the gram quite commonly offers the value of simultaneity and (ingressive) iterativity but only sporadically conveys the sense of habituality and duration. The gnomic nuance is almost unavailable. Lastly, the construction may appear with the force of an inclusive present perfect.

As already mentioned, the semantic potential of the NomLA gram is similar to the meanings offered by the KAD and NomKAD formations. Hence, its map must – at least partially – coincide with the maps previously posited for the KAD and NomKAD constructions. In harmony with the mapping of the KAD and NomKAD grams, it is the imperfective path that should be used as a template connecting all the values offered by the NomLA construction and representing them as a coherent network of related senses. The

most prototypical values are located in the non-advanced section of the cline, spanning the stages of the simultaneity, progressivity and iterativity. More advanced sections of the path, such as, continuity, habituality and durativity are poorly represented, while the idea of gnomicity seems to be almost never conveyed by the NomKAD form.

Even though the semantic potential of the NomLA form is comparable with the semantic potentials of the two previously analysed constructions, one may detect certain differences between the former and the latter. First, the NomLA locution (but not the two KAD forms) can be used in main clauses with a future reference, thus expressing the idea of future progressivity or, less frequently, continuity. Another important distinction corresponds to the incompatibility of the NomLA form with adjectival roots in *-yaa*, which are fully tolerated by both KAD grams. It is also possible that the NomLA formation is less commonly used with a habitual sense than the KAD form(s), having stronger connotations of current (past, present or future) ongoingness. The entire semantic potential of the NomKAD form can be networked by employing the chaining based upon the imperfective path in the following manner:

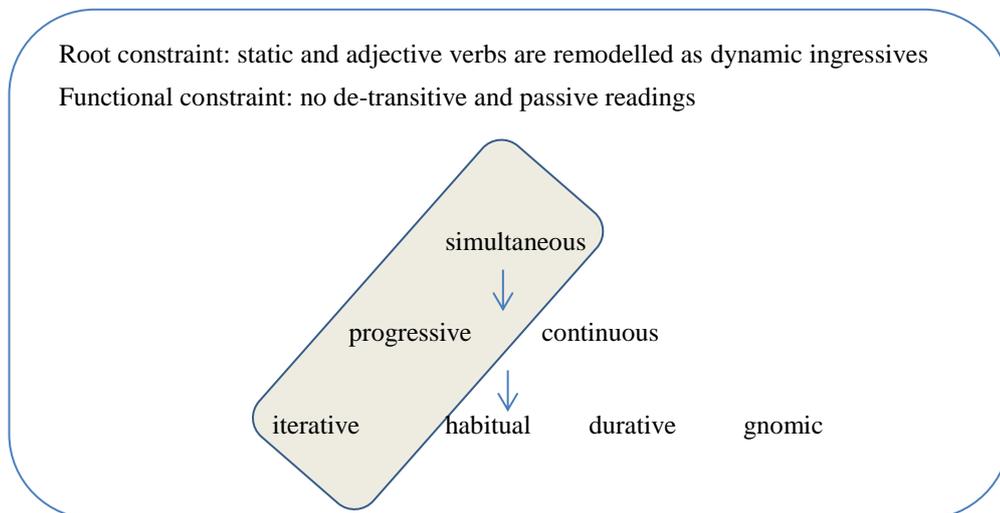


Figure 2.7: Map of the semantic space of the NomLA gram

A linear representation of the dynamic map posited above can be reformulated in the following way:

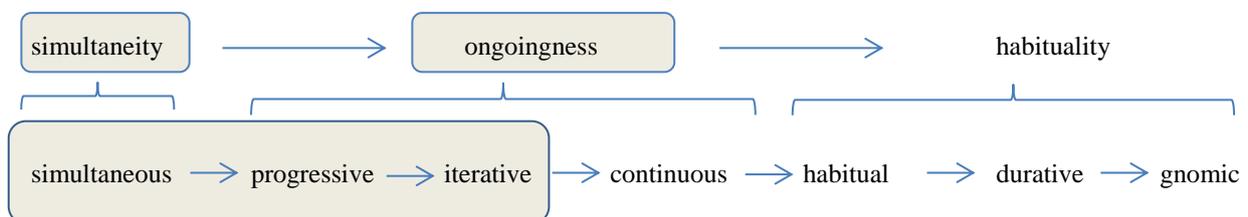


Figure 2.8: Linear model of the semantic space of the NomLA gram

As a result, the wave model of the NomLA gram – which is coarser grained than the two representations developed above – is analogous to the models formulated for the KAD and NomKAD formations, exhibiting the following form:

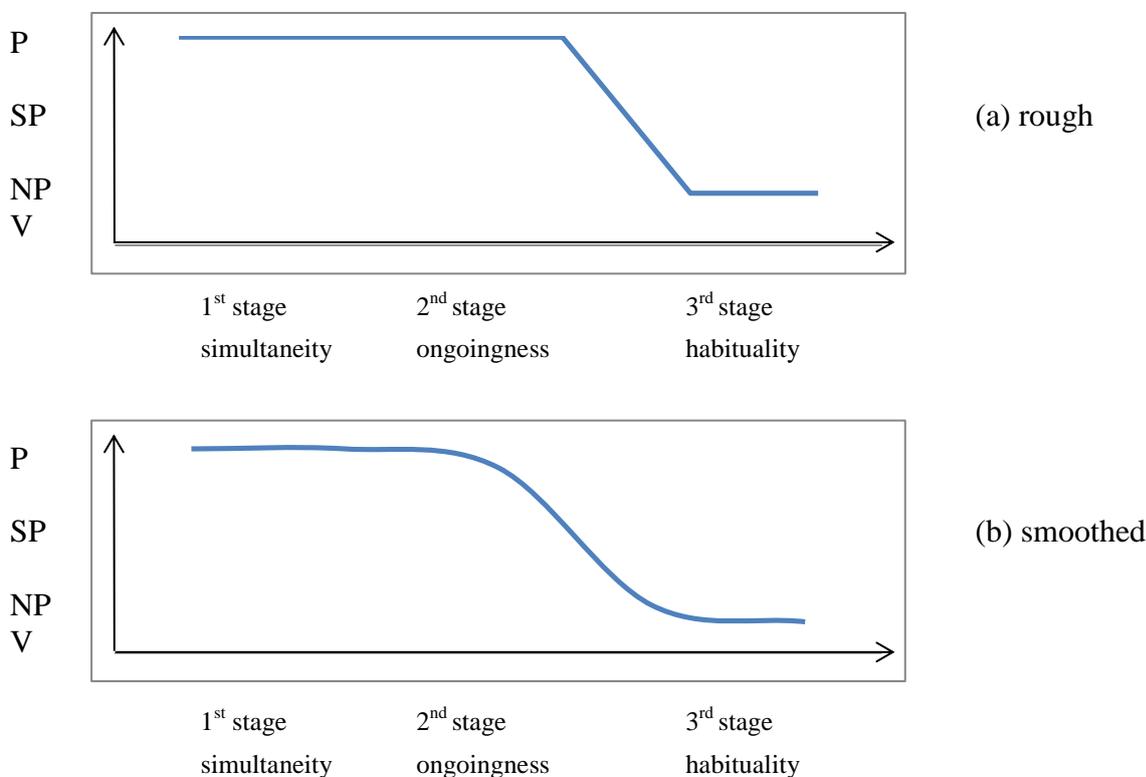


Figure 2.9: Wave model of the semantic space of the NomLA gram

As was the case with the NomKAD construction, the very form of NomLA locution confirms its definition in terms of an imperfective-path gram that has emerged from a progressive input. More precisely, the structural properties of the NomKAD form are consistent with one of the most plausible sources of the imperfective-cline grams, viz. locative expressions that represent the subject as metaphorically situated in the midst of an action, itself, portrayed in a nominal manner. To be exact, the NomLA formation consists of a locative element (the non-verbal predicator *be*) that together with the postposition *la* ‘with, at’ situates the subject in a (metaphorically) special relation to the action conveyed by the verbal noun. This locative value (additionally accompanied by the meaning of being busy with something) is still clearly perceivable in the purely nominal matrix of the NomLA form. Namely, as already mentioned, the NomLA gram parallels a nominal expression built on a noun or pronoun (e.g. *munne* ‘what’) such as *I be munne la?* ‘What are you doing?’ (lit. ‘What are you at?’). In this periphrasis, the lexeme *la* is doubtlessly a postposition that determines the metaphorical position of the subject in relation to the complement. Additionally, certain morphosyntactic properties of the gram, discussed at the beginning of this chapter<sup>101</sup> – analogous to those

<sup>101</sup> These properties are: a) the relation between the verbal noun and its complement is genitival; b) the entity which corresponds to the object of the underlying verb constitutes a complement of the head of a nominal clause (the verbal noun) in the NomLA locution; c) the entity which corresponds to the object of the underlying

offered by the NomKAD form (see section 2.2.2, above) – show that one is dealing with a formation in which the verbal action is represented nominally and it is this nominal representation that makes it possible to spatially locate the agent in relation to the action performed by him or her. Accordingly, from a typological perspective, the gram is fully comparable with exemplary progressive constructions, such as *I am [at] doing something* in English, *Ég er að [að] gera eitthvað* in Icelandic (originally used both with a preposition *að* and the homophonous infinitive marker *að*) or *Estoy haciendo algo* in Spanish. In general, the locative character of the NomLA gram is equivalent to that offered by the NomKAD form. The two formations differ in the type of the position the subject adopts in relation to the action viewed nominally. While the NomKAD gram metaphorically situates the subject *on* the activity (*M be diyaamoo kaŋ* ‘I am [on] talking’), the NomLA construction locates him or her *with* or *at* it (*M be diyaamoo la* ‘I am [with/at] talking’; cf. Tröbs 2004a:133, 142, 2009:196-200).<sup>102</sup> Furthermore, the fact that the original lexical (almost iconic) value can still be recovered and deduced from the structure of the NomLA gram (which remains to a great degree semantically transparent) is an indicator of a non-advanced evolutionary age of this construction. This, in turn, concords with its kinetic definition as a non-advanced imperfective-path gram, that is to say, as a wave whose prototypicality zone is located in initial sections of the cline.<sup>103</sup>

From a comparative perspective, Manding exhibits a great predisposition to develop progressives by means of the locative-nominal schema and the postposition *la*. The genuine nominal constructions of this type, in which the lexical verb appears in the form of a verbal noun, may be found in Tenegakan (verbal noun + *ó* + *la*) and Bambara of Bamako (*bé* + verbal noun + toneme determiner + *lá*), Bambara of Segu (*bí* verbal noun + toneme determiner + *lá*) and Xasonka<sup>104</sup> (*bé* + verbal noun + *o* + *lá*; Tröbs 2004a:134-135, 2009:195-196).<sup>105</sup>

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transitive verb can be omitted although the construction will preserve its active character; d) inversely, the absence of an item that corresponds to the object of the verb from which the verbal noun has been derived does not yield de-transitive and/or passive readings.

<sup>102</sup> Of course these semantic representations of the two prepositions are approximate, as they are not fully comparable with their English translations.

<sup>103</sup> This also applies to the NomKAD gram.

<sup>104</sup> On Xasonka, see Koité-Herschel (1981; see also Tveit & Dansoko 1993).

<sup>105</sup> The non-verbal predicative copula can also be of the *ye* type (for instance in Jula; Braconnier 1983:3-4). On certain occasions, the original locative (postpositional) element (sometimes reanalysed as an infinitive marker) appears as *ra* or its variants (Wojenekakan and Jula-Kong; Tröbs 2004a:134, 2009:195, 200-201; on Jula-Kong, see Sangaré 1984; cf. Derive 1981, 1985). For example, in Jula, an originally locative construction built of the predicative marker *yé*, a lexical verb accompanied by the definite marker and the postposition *rà* is used as a progressive, equivalent to *être en train de* (Braconnier 1983:3; regarding the *rà* construction and its verbal nature, see also Braconnier 1992 and Tröbs 2009:200-201; on the Bambara postposition *ɔ*, its functions and possible origin as *yóró* ‘place’, see Dumestre 1981 and Bailleul 1986). In Meēka (Marka, Dafing), one finds the element *sò* (Tröbs 2004a:134; regarding Dafing-Marka consult Traore 1978, Diallo 1988, 2000; see also Prost 1977). Constructions in which the lexical verb appears in its base form are even more common (Tröbs 2004a, 2009). An example of these formations can be the progressive-habitual gram in Jula (so-called neutral imperfective or “inaccompli neuter”), which is structurally equivalent to the progressive construction mentioned above with the distinction that the definite marker does not appear (Braconnier 1983:3-4; cf. also the imperfective in Kita Maninka composed of the verboid copula and the *la*-infinitive of a lexical verb; Creissels 2009). Formally (but not semantically), these locutions are similar to the LA gram of Basse Mandinka (cf. section 5.1). As observed by Tröbs (2004a, 2009), these formations are usually more grammaticalised than constructions where the verbal noun is employed. Progressive grams built on locative schemas are also found

Bambara possesses a verbal construction built of a locative entity *bé/bí* (cognate of the Basse Mandinka non-verbal predicator *be*), a verbal noun (“nom d’action”; Idiatov 2000:18) and the postposition *lá* (or its variant *ná*). This nominal periphrasis is equivalent to the NomLA gram of Basse Mandinka and expresses the idea of progressivity or the fact of being busy with an action: *À bé báara`lá* ‘He is working/busy with working’ (Idiatov 2000:18) and *Músá bí báaráa` lá* (Diallo 1989:170). The idea of location is conveyed by the locative non-verbal predicator (*bé*) and the postposition (*lá* ‘in, at’; Blecke 1988/2004:44) and the verbal noun appears with the definite marker (a toneme determiner). If the underlying object is expressed, this adopts an indefinite form (Tröbs 2004a:145, 2009).

According to Tröbs (2004a, 2009), this group of locative-nominal progressives constitutes a type of the first stage of grammaticalisation of progressives, being equivalent to the locative-nominal *kaŋ* type discussed in section 2.2. The only difference is that a different locative meaning is profiled: ‘at’ (*la*) instead of ‘on’ (*kaŋ*; Tröbs 2004a:133). In Manding, all such locative-nominal *la* constructions remain progressive in nature and do not extend to the value of habituality. However, in various languages of the group, the *la* variety where a verbal base is used instead of the verbal noun (the phenomenon which may correspond to a further stage of structural grammaticalisation, i.e. to the reanalysis of a nominal structure as verbal) can appear with a habitual sense (Tröbs 2004a:151-152, 2009:208-209).

To conclude, the dynamic definition of the NomLA gram proposed in this dissertation, which was based on synchronic semantic properties of this construction, is consistent with its structure and with comparative evidence. Given this, it is safe to affirm that the NomLA form is a non-advanced imperfective-path gram. Accordingly, the mapping harmonises with the proposal formulated by Tröbs (2004a, 2009). However, one should also note that although Tröbs understands the periphrases formed by means of the non-verbal predicator and the postposition *la* as manifestations of the imperfective path (Tröbs 2004a, 2009), he views them as belonging to the second cycle of the grammaticalisation of imperfective formations in Manding (Tröbs 2003:3). They contrast with the *kaŋ* formations which equal the third cycle. In evolutionary terms, the former is more advanced than the latter.<sup>106</sup> This would clash with the maps of the (Nom)KAD grams and the NomLA form plotted in this study, as both are basically identical, pointing to a similar advancement on the path. In fact, as will be shown in section 2.6 in this chapter, in Basse Mandinka, the KAD, NomKAD and NomLA grams constitute the third and the youngest wave of the imperfective stream. This (superficial) difference between the grammaticalisation cycles proposed by Tröbs (2003) and the behaviour of the (Nom)KAD and NomLA waves in Basse Mandinka stems from the fact that Tröbs (2003) mainly refers to verbal *la* constructions (see the previous paragraph), which *de facto* do constitute an earlier cycle, as they seem to be more

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outside Manding, for instance in Vai: *bè* + verb + *nà* (Tröbs 2014; see also the construction *ì* + verb stem + low tone, which seems to be more advanced on the grammaticalisation cline, functioning as a habitual or general non-completive). In some languages, the original location schema of an imperfective gram is not visible anymore. However, it is possible to reconstruct such a locative origin. For instance, the imperfective (progressive-habitual) form *kù-é* in Jeri derives from the location schema *\*kù=ò ré* (verb + definite marker + postposition; Tröbs 2013:135; on Jeri, see Tröbs 1998, 2002a; cf. also Launay 1995 and Kastenholz 2001).

<sup>106</sup> The first grammaticalisation cycle corresponds to the *\*di* locution (see section 2.5).

grammaticalised as far as their form and meaning are concerned. Thus, Tröbs (2003) observations remain correct, without contradicting the mappings posited in this dissertation.

## 2.4 The KA gram

The fourth gram of an imperfective diachronic type is a periphrasis constructed by means of an auxiliary element *ka* (or its variants such as *ki*, *ke*, *kari* and *kare*) – in the negative *buka* (or its alternatives, *bika*, *muka* and *moka*) – and the base of a main lexical verb (cf. example 2.49.a-b). This entire sequence, either positive or negative, will hereafter be referred to as the KA gram. As far as the alternative morphemes of the positive KA form are concerned, the short variants (*ka*, *ke* and *ki*) are relatively frequent, while the longer ones (*kare* and *kari*) are less common. Speakers display distinct preferences for the use of one of the three short variants. For instance, while some favour the *ki* by-form, others opt for *ke* or *ka*. It is difficult to detect any constant rule governing the selection of a particular form. The negative variety *buka* behaves in a similar way. The forms *buka* and *bika* are the most frequent while *muka* is less so. The alternative variant *moka* is the least common.

The KA locution admits both active (transitive or intransitive) and de-transitive constructions. In the case of transitive expressions, the object is placed directly after the element *ka* or *buka* and before the base of a lexical verb. If the object is not expressed, the meaning is invariably intransitive or de-transitive. There are no restrictions on the type of verbs used in this formation and the gram admits any class of predicates, be they dynamic, activity, situational, static or adjectival verbs.

- (2.49) a.     A     **ka**     **jiyaa**  
           he    KA<sup>107</sup> lodge  
           ‘He lodges’
- b.     A     **buka**           moo           **maa**  
           he    NEG.KA     person        touch  
           ‘He does not touch anyone’ / ‘He does not harm anybody’

### 2.4.1 Semantic potential

#### 2.4.1.1 Grammatical tradition

In most linguistic studies, the KA construction has been classified as a habitual, durative and present. More specifically, Macbrair (1842:18) affirms that the formation expresses present actions and denotes habits or customary events. Furthermore, although failing to state it overtly, in one of his translations, he also suggests a modal value corresponding to the English sentence ‘to have the disposition to do something’. See the following example provided by Macbrair (1842:18): *N kare bete ke* ‘I do good, I am in the habit of doing good, I

<sup>107</sup> The positive marker of the KA construction– whatever its shape (cf. alternative forms found in Basse such as *ke*, *ki*, *kare* and *kari*; see below) – will be glossed as KA. The negative variety – again independently of a type employed in a concrete example (*buka* or *muka*) – will be glossed as NEG.KA.

have the disposition to do good'. Hamlyn (1935:19) classifies the KA construction as having a "definite and [...] habitual force." In his view, this formation is not commonly used. In their descriptions of Mandinka, Creissels (1983a) and later Creissels & Sambou (2013) define the gram as a habitual and durative form. Accordingly, the construction indicates processes whose boundaries are beyond the subject's domination. Moreover, in their view, the locution is not linked to any specified temporal moment (see also Wilson 2000:114). Creissels (2012:3) alternatively classifies the KA construction as a "non-completive" form. Gamble (1987:20) claims that the KA formation functions either as an emphatic present<sup>108</sup> or represents habitual actions. Finally, Colley (1995:5, 15) sees in the KA form an expression of habitual and progressive activities (for similar descriptions compare Rowlands 1959:19, Lück & Henderson 1993, WEC 2002 and Drammé 2003).

#### 2.4.1.2 Evidence from Basse<sup>109</sup>

The KA formation most commonly expresses habitual activities in a present time frame:

- (2.50) a. N **ka** bukoolu **karaj** luŋ-wo-luŋ  
 I KA books read every.day  
 'I read books every day'
- b. N **ke** **taa** marisewo to luŋ niŋ luŋ  
 I KA go market to day and day  
 'I frequently go to the market'
- c. Ntel **ka** domoro **ke** talaŋ fula  
 we KA eating do hour two  
 'We eat at two o'clock' (i.e. as a habit, we eat at two o'clock)
- d. N **ka** wo **mira** waati-wo-waati  
 I KA that think always  
 'I always think of it'

The KA gram is also frequently used where the sense of an extended duration is to be conveyed:

- (2.51) a. Ñinaŋ n **ka** **jiyaa** Basse to  
 this.year I KA lodge Basse in  
 'This year I lodge in Basse'
- b. Ñinaŋ a **ka** Mandinkakaŋo **karaj**  
 this.year he KA Mandinka study  
 'This year he studies Mandinka'

<sup>108</sup> Unfortunately, Gamble (1987) does not specify what he understands under the label 'emphatic present'.

<sup>109</sup> The evidence provided in this section draws from my study "The meaning of the (BU)KA form in Basse Mandinka" published in *Folia Linguistica et Litteraria* 6 (cf. Andrason 2012j).

Similarly, the habitual and durative meaning is commonly found in a past temporal sphere where the construction approximates a habitual past (similar to *used to* in English) or a durative-imperfective past (akin to the Spanish *pretérito imperfecto*). However, it should be noted that the formation cannot be used in main clauses with a future time reference. In such cases, the LA gram would be employed (cf. sections 2.3 and, especially, 5.1).

- (2.52) a. N    **ki**    bukoolu    **karaj** luŋ-wo-luŋ    nuŋ  
 I    KA    books    read    every.day    then  
 ‘I used to read books every day’
- b. Waati jamaa ì    **ka**    **sabati** Basse to    nuŋ  
 time    much    they    KA    stay    Basse    at    then  
 ‘They lived (used to live) in Basse for a long time’

With a similar regularity, the construction denotes general – nearly atemporal – situations (2.53.a) or universal facts (2.53.c-d):

- (2.53) a. Ì    **ka**    seewoo    **domo**  
 they    KA    pork    eat  
 ‘They do not eat pork’ (as a principle, they do not do eat pork)
- b. Karoo **ka**    i    **muruj-muruj**    Bankoo    nooma  
 moon    KA    REFL    turn    earth    after  
 ‘The Moon turns around the Earth’
- c. Newo **ka**    **komoŋ**    jiyo    kono (reused from Creissels 2010a)  
 Iron    KA    rust    water    in  
 ‘Iron rusts in water’

The above-mentioned value is without a doubt closely related to the fact that the KA formation is commonly used to express collective truths in proverbs or maxims:

- (2.54) a. Moo kuruŋo    daajikoo    **ka**    **sabati** a    bala    le  
 person wicked    character    KA    reside    him    on    FOC  
 ‘The character of a wicked man persists (in him)’
- b. Kodoo **ka**    neemoo    **dii**    moolu la  
 money    KA    prosperity    give    people to  
 ‘Money makes people happy’

The habitual, general-atemporal and universal meanings enable speakers to extend the use of the KA gram to certain modal contexts. That is to say, the construction may introduce a sense of mental or physical ability or competence, indicating that the subject can perform a given action because he or she knows how to do it by having learned it:

- (2.55) a. N    **ka**    motoo **borindi**  
 I    KA    car    drive

- ‘I can drive a car’ (i.e. know how to drive, I have learned it)
- b. N    **ka**    n    **doŋ**  
I    KA    REFL dance  
‘I can dance’ (i.e. I know how to dance; I have learned it)
- c. Ñiŋ    dindiŋo    **ka**    **diyaamu**  
this    child    KA    speak  
‘This child can speak’ (i.e. it is able to speak; it has learned it)

The KA gram can also indicate that the subject possesses certain – not learned or acquired but rather innate and natural – general capacities for performing a given action (2.56.a). In this use, the construction merely asserts whether an event is possible or not, approximating a modal category of root possibility – a domain which is related to the possibility of the actualisation of situations (2.56.b).

- (2.56) a. Wo    feŋo    **ka**    a    maarii    **nondi**  
that    thing    KA    his    master    make.dirty  
‘That thing can defile his master’ (adapted from WEC 1989)
- b. Janniŋ    a    **ka**    i    **kumandi**,    ŋa    i    je  
before he    KA    you    call    I.did    you    see  
‘Before he could (would) call you, I saw you’

In the sense of ability or capacity, as well as with the value of root possibility, the formation may be accompanied by an explicitly modal predicate, i.e. the verb *noo* ‘be able, be capable, can’ (see section 4.1):

- (2.57) A    **ka**    a    faŋo    tilindi    **noo**  
she    KA    her    self    make    can  
‘She could not raise herself up’

Less commonly, the KA form is compatible with the value of permission:

- (2.58) Fo    maañootiyo    la    luntaŋolu    **ka**    **suŋ**    ne    baŋ,<sup>110</sup>  
QUES bridegroom    of    guests    KA    fast    FOC    QUES  
‘Can the friends of the bridegroom fast  
niŋ    maañootiyo    be    ì    fee? (adapted from WEC 1989)  
if    bridegroom    is    them    with  
while the bridegroom is with them?’

As far as the modal content is concerned, the KA construction rarely provides some volitional nuances (2.59.a). Very infrequently, it seems to be used with a subjunctive modal force similar to the SI gram in subordinate clauses (2.59.b-e; regarding the SI gram, see section 2.5, below).

<sup>110</sup> The lexeme *baŋ* is a sentence-final question word. It will also be glossed as QUES.

- (2.59) a. Fo i **ka** tiyoo **domo?**  
 QUES you KA groundnut eat  
 ‘Do you like groundnut?’
- b. A be jele kaṅ doron fo yooloo **ka jii** a daa kono  
 he NVP laugh on only until saliva KA come.down his mouth in  
 ‘He was laughing so that the saliva ran out of his mouth’
- c. Ì bee be siinoo la fo ì **ka kirinti**  
 they all NVP sleeping at so.that they KA snore  
 ‘They all were sleeping so that they were snoring’
- d. A ye a faṅ ke ko a **ka** beroo le **sika**  
 he did him self do as he KA stone FOC pick.up  
 ‘He did as if he would pick up a stone / as if he were picking up a stone’
- e. Sanji wuli-wuli koomanto, janniṅ hadamadiṅo **ka dadaa...**  
 year thousand-thousand ago before man KA be.created  
 ‘Thousands of years ago before man was even created...’

Although the KA gram is compatible with certain modal senses, it fails to introduce the meaning of epistemic possibility (especially in main, non-subordinate clauses), related to the certainty of an event. In this function, the speaker pronounces his judgment on the likelihood of a situation, i.e. whether it is possibly true (e.g. *It may rain*).

Apart from providing iterative, habitual, durative, gnomic and modal values, the KA construction can also express actual progressive or continuous activities, located in the present (2.60.a-b) and past time (2.60.c) frames. In this function, the KAD gram or the two nominal forms (NomKAD or NomLA) are more common. The sense of simultaneity fails to be conveyed by the KA locution. Once more, the KAD, NomKAD and NomLA formations are regularly used in this function. On scarce occasions, the KA gram can represent progressive actions as iteration (i.e. as a collection of individual, dynamic activities ongoing at a determined time; 2.60.d), without however providing an ingressive-iterative meaning (2.60.e), which is typical of the three constructions analysed previously in sections 2.1, 2.2 and 2.3.

- (2.60) a. I **ka** munne **safee?**  
 you KA what read  
 What are you reading?
- b. N kuṅo **ka** n **dimi**  
 my head KA me hurt  
 ‘My head is hurting me’ (i.e. I have got a headache)
- c. N **ka** motoo **saṅ** kunuṅ talaṅ seyi tambita miniti taṅ  
 I KA car buy yesterday hour eight passed minutes ten  
 ‘Yesterday at 8:10, I was buying a car’
- d. M **ka** dasaamaa **domo** luṅ-wo-luṅ talaṅ 8:00  
 I KA breakfast eat every.day hour 8:00

‘I am having breakfast every day at 8:00’ (i.e. every day at 8:00 I am in the process of having breakfast)

- e. M    **ka**    **kuuraŋ**    lookuŋ-wo-lookuŋ  
 I    KA    be.sick    every.week  
 ‘I am sick every week’

Lastly, the KA gram may be employed with the force of an inclusive perfect, describing a situation or activity that began at an overtly specified time in the past and has continued into the present moment uninterrupted:

- (2.61) a.    Ñiŋ    sanji    jamaalu    n    **ka**    dookuwo    **ke**    i    ye  
           this    year    many    I    KA    work    do    you    for  
           ‘For so many years I have been serving you’
- b.    A    **ka**    taama    **noo**    biriŋ    a    la    wuluuwaatoo    la  
       he    KA    walk    can    since    he    of    birth.time    at  
       ‘He has been able to walk since he was born’

#### 2.4.2 Dynamic map

The evidence presented above makes it possible to define the overall meaning of the KA construction in Basse Mandinka as composed of the following more specific semantic domains. The KA gram most frequently denotes habitual and durative activities – especially those that span larger periods of time – located both in the present and past. It is also extensively used to express atemporal universal facts and general truths. The KA locution may act as an inclusive perfect expressing duration from a certain moment in the past till now, once more emphasising the extent length of an activity. Less commonly, it is employed in order to convey a sense of progressivity and continuity. Moreover, as a modal category, it may indicate the subject’s mental and physical competence, capacity and ability, as well as the value of root possibility. Furthermore, the formation offers permissive readings and, sporadically, a volitional value. Lastly, it is exceptionally found in subordinate contexts in a subjunctive function.

Accordingly, the semantic potential of the KA form can be viewed as spanning almost the entire length of the imperfective path with prototypicality peaks in the advanced sections of this cline. Less commonly found uses such as the values of a progressive or continuous present and past correspond to the initial stages of the imperfective trajectory. An iterative sense is extremely rare while its ingressive subtype entirely unavailable. One should also note that the most original sense of the path – the value of simultaneity – seems not to enter into the semantic potential of the KA gram. As mentioned above, the exemplary values of the formation – habitual, durative and gnomic – match the central and advanced fragments of the imperfective cline.

Additionally, the KA gram exhibits a typical interaction of the habitual sense with several modal meanings, especially with those covering the area of mental or physical ability and capacity, root possibility and volition, which all together constitute a type of agentive

modality. Significantly less common are the values corresponding to permission. The idea of epistemic modality is virtually incompatible with the KA form. As explained in section 1.2.3.1, all such values may arise due to the phenomenon referred to as ‘a modal path of habituels’. According to this evolutionary scenario, the modal tone of grams developing along the imperfective path may have its roots in the habitual value of such formations. When a progressive and iterative gram gains a palpable habitual force, it may subsequently acquire a modal sense of ability. Considering this, once the gram is employed to express agentive modal situations of physical and mental ability and capacity, it may undergo a regular evolution codified by a properly modal path, namely, the ability cline. In particular, it may develop the value of root possibility as well as epistemic, intentional and permissive-prohibitive senses. Afterwards, it can be used as a subjunctive modality and as a modal future.

The entire semantic potential of the KA form, where both imperfective and modal facets of the meaning are acknowledged, can be represented by employing the following map:

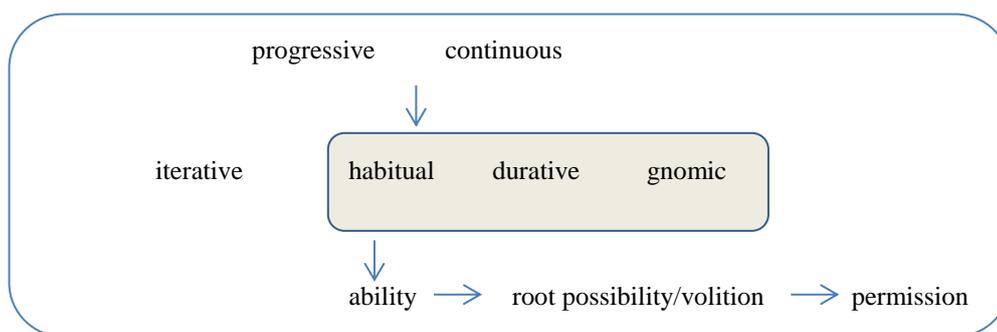


Figure 2.10: Map of the semantic space of the KA gram

The linear representation of the map posited above can be formulated in the following manner:

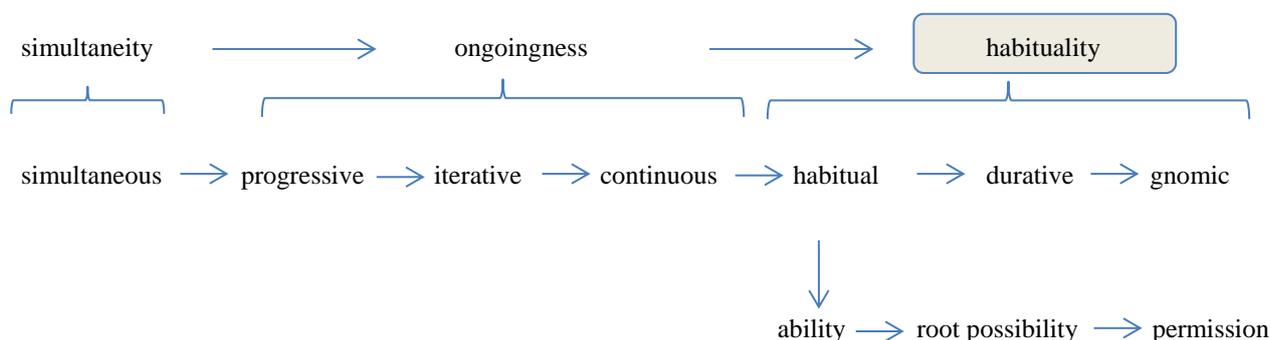


Figure 2.11: Linear model of the semantic space of the KA gram

The wave model, narrowed to the mapping built on the genuine imperfective path – and thus abstracting from modal extensions which arise due to the modal ability cline – may be schematically formulated in the following, jagged or smoothed, way:

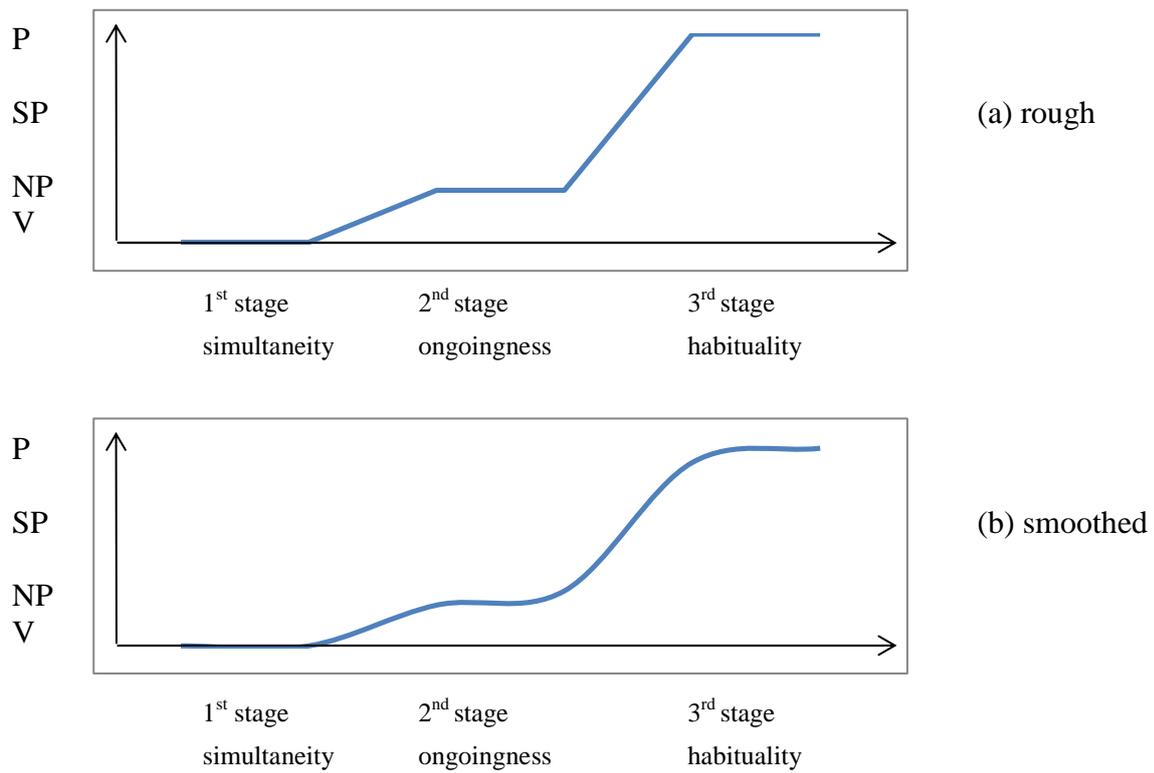
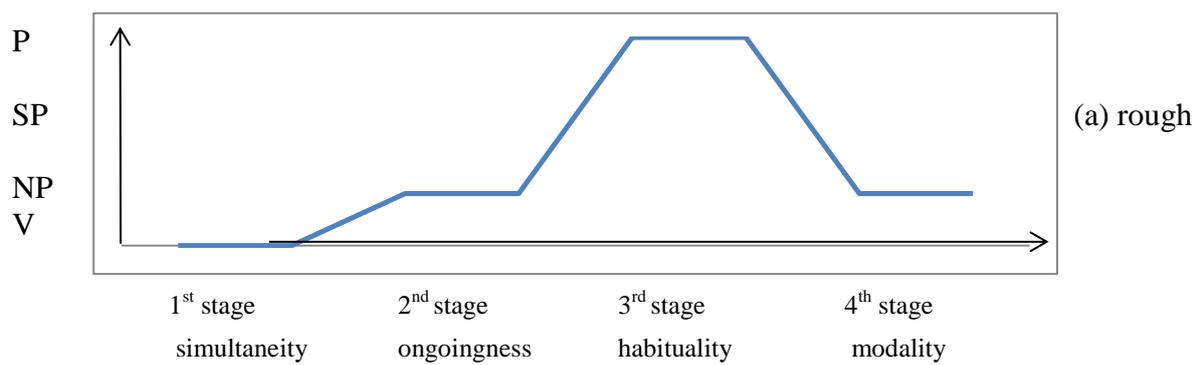


Figure 2.12: Wave model of the semantic space of the KA gram

If the modal senses that derive from the stage of habituality are included in the representation and portrayed as the final stage of the path, the wave model takes the following shape:



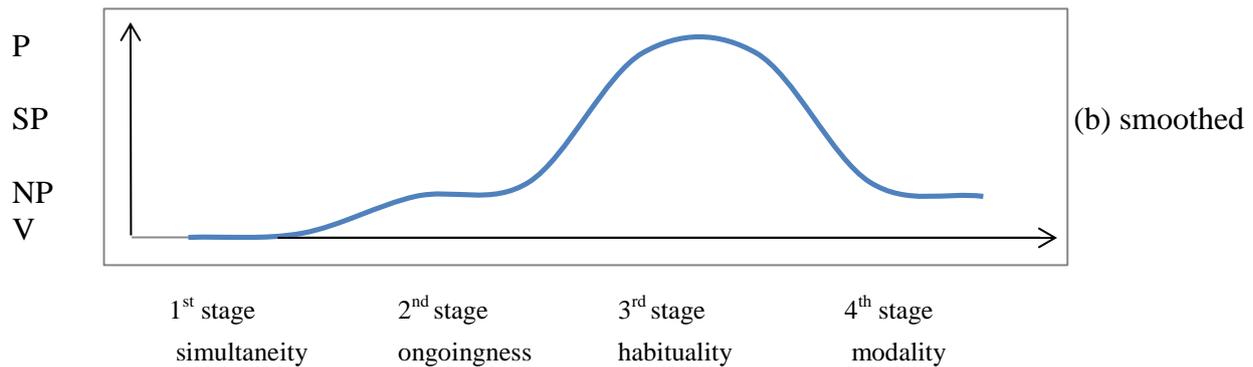


Figure 2.13: Extended wave model of the semantic space of the KA gram

The form of the KA gram is no longer transparent. In contrast to the KAD, NomKAD and NomLA constructions, it does not seem to be linked in a cognitively straightforward and easily recoverable way to any lexical, more concrete element of the Basse Mandinka language.<sup>111</sup> Nevertheless, the very fact that the construction is not transparent does shed some light on its dynamic behaviour and kinetic definition: namely, it indicates that the gram must be an advanced diachrony. *De facto*, the construction is so advanced that it has ceased to be semantically transparent and its cognitive – conceptual and diachronic – origin has become unrecoverable from the perspective of the contemporaneous form of the gram.

Despite this lack of transparency, the form of the KA gram does reveal certain indirect information concerning the map and its original input. Before analysing possible diachronic sources of the KA gram, comparative facts, which may strengthen the mapping proposed above, will be introduced.

Constructions with some types of the preverbal *ka* (i.e. morphemes that are, at least superficially, similar to Basse Mandinka *ka* and are placed before the base of a lexical verb) may be found in a number of languages: Bodugukkan (*yé kà*), Folokkaan (*((yé) kà)*), Gbelebankakan (*((yé) kàà)*), Tudugukakan (*((yé) kà)*), Vandugukakan (*bé kà*), Sienkokokan (*((yé) kà)*), Bambara of Bamako (*bé kà*) and Bambara of Segou (*bí kà; bí à kàŋ kà* and *bí à lá kà*), Kita-Maninka (*yé kà*) and Kagoro (*mi à na kà*; Tröbs 2004a:134, 2009:208-209; see also Koné 1984, Diallo 1989, Derive 1990, Creissels 2009). It should, however, be noted that in the vast majority of cases, these grams contain a non-verbal predicator and offer progressive meanings instead of a habitual sense (Tröbs 2004a:133-134, 151 and 2009:208-209). In fact, the function of the KA gram – and, thus, the use of the morpheme *ka* – as described in section 2.4.1, is unique to Mandinka. In an excellent study of progressive and habituais in Manding and Central Mande, Tröbs (2004a:152, 2009:209) identifies only one prototypical habitual of the *ka*-type – the Mandinka KA formation. The remaining *ka*-types constructions are typically progressive, with a possible exception of two periphrases in Bambara: *bé tó kà* (Bamako) and *bí tó kà* (Segu), which contain a postural verb *tó* ‘remain, stay’ and which do

<sup>111</sup> One should, however, observe that homonymous (or highly similar) forms are used as infinitive or quotation markers of verbs (e.g. *ka a ke* ‘to do’ and *ka ke* ‘to be done’) as well as a conjunction with the meaning related to the idea of goal and purpose (*a taata ka karandiroo ke* ‘he came here in order to teach’) or coordination (*moo doolu be siiriŋ jee nuŋ ka domoroo ke ñoo la* ‘Other people were there and ate with them’). On this relation, see further below in this section.

function as habituais (Tröbs 2004a:150-152). There is also another type of *ka*-grams that exhibits a structure analogous to the KA gram, i.e. without the non-verbal predicator (e.g. Bambara *ká*, Kita Maninka *ká*, Kagoro *ká/kà*, Meeka *ká* – usually with a high tone; cf. Tröbs 2009:233). As will be evident from the subsequent discussion, these constructions typically offer modal values.<sup>112</sup>

If the Basse Mandinka KA gram is related to the predominant *ka* formations with a clear progressive meaning, the mapping proposed in this dissertation would be corroborated, as I postulate that this construction is an advanced imperfective-path gram, thus likely derived from a progressive input. Accordingly, the Basse Mandinka KA form would exhibit a more developed profile (habitual) than its cognates (progressive).<sup>113</sup> This is in fact the hypothesis defended by Tröbs (2004a, 2009) who proposes that habituais in Manding regularly descend from earlier progressive-ongoing categories, including those of the *ka*-type, e.g. the habitual grams in Bamako and Segu Bambara (Tröbs 2004a:153-154, 157; see also Tröbs 2009).

Formal properties of the KA gram seem to confirm this view. To be exact, among all the *ka*-formations, it is possible to distinguish three structural varieties: a) a combination of a cataphoric third person pronoun *à* with a postposition (*lá* or *kàŋ*) and the infinitive phrase headed by the marker *kà* (i.e. *kà* + base); b) locative element *bí/bé* and *yé* and the base of a lexical verb; and c) the sole *ka*-type morpheme (just like in Basse Mandinka). According to Tröbs (2004a:145, 147-150, 2009:208-209), type (b) is historically derived from type (a) due to the deletion of the postpositional phrase. The cases where the locative element is eliminated – type (c) – would in turn correspond to a further development and thus a subsequent evolutionary stage if compared to type (b). It should be observed that in some languages this locative morpheme is in fact optional, suggesting an intermediate stage; cf. Tröbs 2004a:147-150, 153, 155). If this evolutionary scenario is correct, the element *ka* in the KA gram would have been derived from the infinitive marker.<sup>114</sup> This reconstruction is plausible and a similar process may currently be found in Icelandic. To be exact, nowadays, the Standard Icelandic progressive construction *hann er að koma* (lit. gloss: he is at come) ‘he is coming’ is sometimes in colloquial speech rendered as *hann-a koma* where the infinitive marker *að* (also used as a preposition), simplified to *a*, is used as the TTAM marker, while the locative verb *er* ‘is’ seems to have been eliminated. Consequently, the structure of the KA gram would be more grammaticalised than the form of the majority of its cognates, which

<sup>112</sup> There are also languages where the element *ka* expresses past values constituting an equivalent of the Basse Mandinka YE or TA grams (cf. Kastenholz 2003:42, 46, Tröbs 2009:222-224, 230). For example, in Kita Maninka, the *ká* gram functions as a narrative past (Keita 1984:55-56). On the explanation of this type of *ka* and its possible connection to the history of the TA and YE<sub>1</sub> grams, see Kastenholz (2003:42-47; cf. Tröbs 2009:225-230; see also further in this section).

<sup>113</sup> In Mandinka dialects different from Gambian Mandinka, such as for instance in Guinea-Bissau, the element *ka* (and, thus, the KA formation) expresses a broadly understood present or past, rather than the idea of habituality, which is typical in Basse. In these Mandinka vernaculars the idea of habituality is, in turn, usually conveyed by a cognate of the SI gram (cf. Creissels 1983a and Wilson 2000). Thus, it seems that in these varieties, the equivalent of the KA gram has further advanced on the imperfective path, leaving the stage of habituality for the SI formation. Such behaviour is fully compatible with the definition of the KA construction proposed in this section.

<sup>114</sup> Observe that in his discussion of Kita Maninka, Creissels (2009) understands the progressive as formed by a verboid predicator and the *kà* infinitive (cf. also Vydrin 2008/2009).

usually belong to type (b). This would be fully consistent with a more semantic advancement of the KA gram if compared to the other dialects.<sup>115</sup>

Some relevant evidence may additionally be provided by the use of the element *ká* in Bambara and Kita Maninke – a possible cognate of the Basse Mandinka *ka* in the KA gram. In Bambara, the *ká* form is used as a broadly understood subjunctive – an affirmative counterpart of the negative *kàna*, which also exists in Mandinka (as *kana*) and offers a highly similar modal profile. In Bambara, the *ká* construction frequently functions as a directive addressed to the third person singular or plural, expressing indirect orders and requests (*À ká sīgi* ‘Let him sit down!’ and *Ù ká dòn* ‘May they enter!’; Creissels 1983b, Koné 1984:17, Blecke 1988/2004:18). It is likewise employed as a polite imperative and hortative (Bird, Hutchison & Kanté 1977:266). It can also be used in questions with a modal nuance of deliberation or necessity (*Né ká kàsi wà* ‘Should I cry?’; Koné 1984:16, Blecke 1988/2004:19; compare example 2.59, above). This inherently modal nature of the gram leads to a situation where the *ká* form can sometimes replace the optative construction in *máa*: *ála máa dùga-w mìné-na* ‘May God fulfil your wishes’ by *Ála ká dùga-w mìné* (Koné 1984:20, Blecke 1988/2004:19-20; for the analysis of the MAA gram, see section 4.3). Consequently, the formation offers a strongly marked modal – more specifically injunctive – character. Additionally, it is commonly found in subordinate clauses with a modal value of subjunctive conveying the idea of a goal, purpose, obligation or necessity (*À f’ò mùso-w yé kó ù ká bó* ‘Tell the women that they go out [i.e. tell the women to go out]’; Koné 1984:18, Blecke 1988/2004:19; compare example 2.60.c, above). In subordinate uses, the locution can also be headed by conjunctions, such as *sáni* ‘before’, *jàńko* ‘so that’ and *wálasa* ‘in order to, so that’ where its use is obligatory (Blecke 1988/2004:40). However, one should note that subordinate clauses of goal or purpose can appear without any conjunction. To summarise, the Bambara *ká* locution introduces deontic situations (order, obligation, desire, permission) and epistemic values (uncertainty and possibility), and is moreover especially abundant in subordinate clauses. For this reason, Blecke (1988/2004:40) and Bird, Hutchison & Kanté (1977:266) label it by using the term ‘subjunctive’.<sup>116</sup>

Furthermore, one should note that the entity *ká* can also be employed in qualifying clauses with the sense of a general truth, similar to the use of an atemporal gnomic present: *Jí ká gòni* ‘Water is warm’ (Blecke 1988/2004:43) or *Báara tùn ká gèlen* ‘Work is hard’ (Blecke 1988/2004:101; see also Bergelson 1991:5 and Kastenholz 2003:46). To be exact, *ká* behaves as an auxiliary element that introduces adjectival verbs and indicates present – typically permanent and invariably non-transitional – qualities: *À ká bon* ‘He is big’ as opposed to the participle in *-len* which indicates change (Bird & Kante 1976:40-41 Bird,

<sup>115</sup> It should be noted that in his conclusions, Tröbs (2004a:153) excludes the Mandinka *ka* gram and mainly focuses on constructions of the *ka*-type in other languages. However, if the KA gram is related to other *ka* locutions, it would exhibit the most advanced morpho-syntactic features (similar to type (c), i.e. the loss of a locative copula and a postposition, and the generalisation of the infinitive marker as a TTAM morpheme) and the most advanced semantic properties (habituality, durativity, gnomicity). It would thus constitute the most grammaticalised *ka*-type formation in Manding.

<sup>116</sup> Observe that in Bambara the *ká* in the subjunctive is marked by a high tone, while *kà* as an infinitive marker has a low tone. The conjunction *kà* is also marked by a low tone (Bird, Hutchison & Kanté 1977:163-164, 266). Despite this tonal difference, one can hypothesise that the subjunctive *ká* gram in Bambara is related to the infinitive marker which, like the subjunctive itself, also conveys purposive values (see the next footnote).

Hutchison & Kanté 1977:114-115). As noted by Blecke (1988/2004:43), in such contexts, the construction introduces the idea of durativity (‘statiques duratives’) and not modality (on a possible origin of this type of the element *ka*, see further below in this section).

These two properties of the Bambara *ká* (i.e. its common function as a modal, typically subjunctive, gram as well as its use with adjectival bases in order to express persistent, durative and general characteristics, corresponding to a durative or gnomic present) are fully compatible with the dynamic definition of the KA form in Basse Mandinka. If the Bambara and Basse Mandinka grams are genetically related, the former (i.e. Bambara) would offer a situation of a highly advanced imperfective-path gram, the so-called old present, which is mainly used as a modal category or general gnomic present (in the case of Bambara limited to adjectival bases only). Accordingly in Bambara, all the progressive and habitual senses, as well as durative uses offered by non-adjectival verbs, have been lost – the gram has reached the final stage of its evolution.<sup>117</sup>

A similar modal form exists in Kita Maninka where a periphrasis composed of the morpheme *ká* (observe once more a different tone in this gram, which can however be also low if the following tone is high) and the base of a lexical verb (without any locative element *yé* in contrast to the progressive *yé kà*) exhibits a projective modal value, similar to *il faut* in French (Keïta 1984:57, 59, 1986).<sup>118</sup> The marker *ká* can also be used with static predicates to introduce permanent qualities and/or to convey the sense of persistence and duration (Keïta 1984:62).<sup>119</sup> If this gram is related to the Basse Mandinka KA form, it would also constitute an example of a further advancement on the path.

To conclude this review of possible origins of the KA gram, two other theories may be quoted. First, it has been proposed that Kpelle (a Southwestern Mande vernacular) possesses a locution that is structurally similar to the KA gram. This locution is formed by the entity *káa* and a verbal base. It expresses locational and progressive meanings, e.g. *káa pái* ‘He/she is coming’. It has furthermore been hypothesised that the shape of the element

<sup>117</sup> The infinitive-marker origin of the Basse Mandinka KA gram is still plausible even if the Bambara formation has been grammaticalised as a modal form without imperfective-path prehistory, because such subjunctive modal formations commonly originate in subordinate final clauses, which themselves are frequently introduced by an infinitive marker, homophonous with the directional preposition/conjunction with a final sense (cf. *to* in English). As already mentioned, in Mandinka, *ka* can be used not only in the KA gram but also as an infinitive marker and final conjunction. If the associative element *ká* in Bambara reflects an original stage (and not final stage of grammaticalisation as hypothesised above), it seems unlikely that it would have derived in any way from the infinitive marker. In this case, the proposal formulated by Tröbs (2003) on the basis of Kpelle or the theory hypothesised by Kastenzholz (2003) would be more probable (cf. further below in this section). The origin of the Bambara subjunctive and qualifying “adjectival” predication (Kastenzholz 2003:46) and their relation to the progressive-habitual *ka* formations such as the KA gram also depends on whether the locative copula (such as *be* in Basse Mandinka) ever existed in these periphrases.

<sup>118</sup> The use of a *ka* type predicative marker for modal (subjunctive, injunctive, jussive, exhortative and/or optative) purposes is wide-spread and, besides Bambara and Kita Maninka can also be found in Kagoro (*ká/kà*), Xasonka (*xà*) and Mɛɛka (*ká/kà*; Creissels 1986, Tröbs 2009:233-234; cf. also Vydrin 2001). The use of *kana* and its varieties for negative (subjunctive, injunctive, jussive, exhortative and/or optative) modality is even more general in Manding, appearing for instance in Bambara, Korokan, Koyaga and (Basse) Mandinka (cf. Creissels 1997b:19-20).

<sup>119</sup> This use of the predicative marker of a KA type is also quite common in Manding. For instance, it may additionally be found in Xasonka (*xà*), Kagoro (*ká/kà*), Folokakan (*ka*), Vandugukakan (*ka*), Jula of Kong (*ká*), Bolon (*ká*) and Eastern Maninka (*ká*; Tröbs 2009:242-243, 2014). Various languages exhibit an overlap between the marker of modality (subjunctive) and the marker of stative predication. As far as the *ka*-type is concerned, this occurs in Kagoro, Kita Maninka, Xasonka, Bambara and Mɛɛka (Tröbs 2009:245).

*káa* derives from a singular imperative form of the verb *kaa* ‘see’ (Tröbs 2003:5). While imperatives of verbs of seeing can arguably be used for the creation of grams that are related to the idea of present-ness (cf. Creissels 1997a:12 and Tröbs 2003:5), I am unaware of imperatives employed to derive progressive constructions. In fact, neither imperatives nor verbs of seeing are included in the list of lexical sources of progressives by Bybee, Perkins & Pagliuca (1994:128-129). If the origin of *káa* really is as proposed by Tröbs (2003), at the moment where it was used in order to derive the progressive periphrasis (which posteriorly evolved into the KA gram), this input source must already have been grammaticalised as a locative or other cognitively plausible element (a *be*-type predicate, postural verb, etc.; cf. Bybee, Perkins & Pagliuca 1994:1287-133).<sup>120</sup> Thus, the proposals formulated by Creissels (1997a) and Tröbs (2003) remain plausible and valid if they are understood as the explanation of the absolute beginning of the Basse Mandinka element *ka* and not as the cognitive foundation of the KA periphrasis. However, if this origin is accurate, the *ka* in the KA gram would not derive from the infinitive marker, as hypothesised previously. Nevertheless, one would still be dealing with an exemplary progressive input and, thus, the KA construction would be an imperfective-path gram.

Second, the origin of the element *ka* may be related to an associative postposition (Kastenholz 2003:45-46; cf. Tröbs 2004b, 2009:225-227). In fact, a postposition that is formally similar to the verbal predicator *ka* is found in Western Mande, for instance in Somogo dialects with the meaning of ‘with’ (ibid.). This reconstruction is especially appealing for the explanation of the previously mentioned use of the elements *ká* (similar to the Basse Mandinka *ka* of the KA gram) in qualifying clauses or “adjectival predication” in Bambara and in other Mande languages (Kastenholz 2003:45-46).<sup>121</sup>

In light of the semantic potential offered by the KA form in Basse Mandinka in which both the components of progressivity and continuity and the values of habituality and durativity – i.e. senses that are all available on the imperfective cline – play a role, it is highly plausible that the KA locution is an imperfective-path gram. In addition, comparative data from Manding dialects, which, as predicated by the model, either suggest a less advanced stage of grammaticalisation or, on the contrary, its further advancement, corroborate the

<sup>120</sup> One should observe that the genetic relation of the Kpelle and Mandinka formations and, thus, the contribution of the origin of the morpheme *káa* to that of the KA gram remain uncertain.

<sup>121</sup> It should be noted that this hypothesis has been formulated to explain the morpheme *kà/xà* in perfect or perfective function (Kastenholz 2003:43-46; cf. Tröbs 2004b, 2009:222-230, 2010:65-66, 71). The use of the predicator of a *ka*-type as a perfect/perfective/past may be found in Kita Maninka (cf. narrative *ka* in Keita 1984:55-56), in Korokan (cf. the narrative marker *kà* used in independent clauses; Creissels 1987/1988; observe that in dependent clauses, this gram functions as a conditional ibid.:20), in Xasonka (*xa*), Jula og Kong (*kà*) and Jula Véhiculaire (*kà*; Tröbs 2009:222-223). In fact, various languages use the same *ka*-type morpheme in stative predications and in perfect(ive) grams. This occurs in Jula of Kong, Jula Véhiculaire, Maninka and Xasonka (Tröbs 2009:246). This would suggest a common origin of the *ka* marker in the two types of constructions, most likely from an original resultative proper periphrasis (observe the exemplary split into the values of the simultaneous cline (the stative sense) and the values of the anterior cline (perfect, perfective and past senses); see Tröbs 2009:246-248). If this is true, the Basse Mandinka KA gram could be unrelated to this type of *ka* grams. However, if it was related, it would have descended from an old resultative proper gram, first generalised as a stative/present with static adjectival verbs and then extended to dynamic predicates (which in other languages would have followed the anterior cline acquiring perfect(ive) and past senses). Although possible, this scenario seems rather unlikely, as I am unaware of a crosslinguistically similar development. In addition, this reconstruction is less plausible than the imperfective-path mapping due to the semantic potential of the KA gram, which, as explained, may express progressive and continuous senses, typical of the imperfective cline.

plausibility of this type of mapping. Thus, even though the exact source of the KA construction (and the origin of the predicative marker *ka*) cannot be posited with an absolute certainty (be it an infinitive marker and a simplified infinitive clause, an imperative form of the verb ‘see’, an associative postposition, or any other possible lexeme),<sup>122</sup> the map of the KA gram based on the imperfective-path template seems to be fairly reliable. What is important is that the three scenarios of the origin of the KA gram are generally compatible with the imperfective path and, thus, corroborate the mapping, which is the main objective of introducing the diachronic evidence in this dissertation. In this way, the hypothesis presented here, according to which the KA gram is an old imperfective with lost progressive and continuous uses, concords with views on the general development of habituais in Manding, those of the the *ka*-type(s) included, suggested by Tröbs (2003, 2004a and 2009).

## 2.5 The SI gram

The last formation of the imperfective-path type is the SI gram. The SI gram is an analytic verbal category formed by the auxiliary *si* (or its variant *se*) and the base of a lexical verb as illustrated in (2.62) below. There are no restrictions on types of verbs used in this formation: it tolerates active (transitive and intransitive) and de-transitive constructions. Similarly, all types of roots (dynamic, activity, situational, static and adjectival) are admissible. The SI locution is only found in affirmative contexts. The corresponding negative meanings are expressed by a formation that substitutes the morpheme *si* by *kana*, *te* or *buka*, depending on the context.

(2.62)        I        **si**        a        **ke!**  
               you    SI        it        do  
               ‘You will do it!’

### 2.5.1 Semantic potential

#### 2.5.1.1 Grammatical tradition

Macbrair (1842:18) classifies the SI gram as a “first” future category, i.e. the one that expresses future time definitively. He notes, however, that this future meaning may be significantly mutated by means of certain words accompanying the construction. Specifically, when the SI construction is employed with the particle *fo*, it expresses a sense of obligation. Consider, for example, *Fo n si a kanu* ‘I should love him’ (Macbrair 1842:20). Likewise, with the verb *noo*, the construction conveys a modal idea of possibility and ability, as in *N si taa noo* ‘I can go’ (Macbrair 1842:20). Hamlyn (1935:14) defines the SI gram as a simple future that can be employed in the second person singular and plural as an imperative. Creissels (1983a:114-116) and Creissels & Sambou (2013) define the SI formation as an expression of eventuality: it denotes events which could and/or should occur. In this view, the

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<sup>122</sup> Additionally, one should note that if the KA gram derives from longer forms of the auxiliary, i.e. *kare* and/or *kari*, the infinitival origin seems to be less plausible

construction offers two main sorts of meaning, derivable from the “eventual” domain: a) it introduces oblique commands or suggestions (regarding the classification of the SI construction as an indirect imperative see also WEC 2002:11) and b) denotes futurity, probability and potentiality (see also Kastenholz 2003:47 and Tröbs 2004a:154, 156-157).<sup>123</sup> Gamble (1987:20) discerns from the SI gram an emphatic future, corresponding to the English periphrases formed with the verbs *must* and *should*. He also observes that, in the second person, the locution can function as a “mild” imperative. Colley (1995:14) proposes that the SI form is an imperative, e.g. *I si naa saama!* ‘You come tomorrow!’ or *Ali si naa saama!* ‘You all come tomorrow!’. Following Macbrair (1942), he notes, however, that the construction may commonly be found with the auxiliary verb *noo* or the particle *fo*, providing meanings of possibility (*N si taa noo* ‘I can go’ and *Ali si seyi noo saayij* ‘You can go back now’; Colley 1995:14) and obligation/necessity (*Maŋ kendeyaa fo n si taa lopitaanoo to* ‘I am not well, I must go to the hospital’), respectively. In this survey, one may also quote Dramé (2003:46-47) who, similarly to the above mentioned scholars, equals the SI gram with a future and imperative, both direct and oblique. Finally, Creissels (1983a) and Wilson (2000:114) point out that the SI construction can additionally introduce a routine when described in stages: *Nij fiyiroo banta moolu si buindewo dati* ‘When the sowing is over, people (will) start the weeding’.

#### 2.5.1.2 Evidence from Basse<sup>124</sup>

In the present section, I will discuss all the senses offered by the SI locution separately in five syntactic environments: a) in main clauses, first when the SI form is used independently and b) when it is accompanied by the entity *noo*; c) in conditional-temporal apodoses; and d) in subordinate (dependent) clauses, either asyndetic or e) syndetic.

In main clauses,<sup>125</sup> the SI construction expresses future events (2.63.a). Quite commonly such future values are accompanied by a strong modal undertone of obligation or compulsion. For example, when used with the second person singular or plural pronoun, the Si gram is employed with a force comparable to an imperative (2.63.b-c):

- (2.63) a.    N        **si**        buŋo    **dada**  
               I        SI        house build  
               ‘I will build a house’
- b.        I        **si**        moto    doo        **saŋ!**  
               you    SI        car     another    buy  
               ‘You must buy another car! / Buy another car!’
- c.        Saayij i        **si**        dalasi taŋ    **joo**  
               now    you    SI        dalisi ten    pay  
               ‘Now, you must pay 10 dalasis / Now, pay 10 dalasis!’

<sup>123</sup> Creissels (1983a:121) also notes that the element *si* can appear in combination with the markers *ka* and *kari*.

<sup>124</sup> The evidence offered in this section draws from my paper “Description of the semantic potential of the *si*-construction in Basse Mandinka” published in *SPIL* 41 (cf. Andrason 2012i).

<sup>125</sup> All main clauses which can be interpreted as asyndetically subordinate are excluded from the present discussion.

This sense of obligation or order is clearly visible in cases where the SI construction is followed by the YE<sub>2</sub> gram.<sup>126</sup> The YE<sub>2</sub> gram, when preceded by an overt imperative form (the so-called B-Imperative) and directed to the second person singular or plural, regularly expresses commands or suggestions addressed to a single interlocutor or to a group of persons. Thus, it provides the same meaning of necessity and constraint as the B-Imperative itself (regarding the B-Imperative see section 6.1):

(2.64)        Wuli,        i        **ye**    **loo**    ñ        teema!  
                  stand.up    you    YE<sub>2</sub>   stand   we    among  
                  ‘Arise and stand here in the middle of us’

As explained above, orders are commonly introduced in Mandinka by means of the SI construction. Hence, it is not surprising that the SI gram is commonly followed by the YE<sub>2</sub> formation with the sense of an imperative. In such cases, the SI construction displays a value analogous to the use where the YE<sub>2</sub> form is introduced by an overt imperative category. Consequently, the fact that the SI gram and the B-Imperative produce an identical effect on the YE<sub>2</sub> construction – i.e. they impose its interpretation as an imperative – demonstrates that the SI construction must exhibit a sense profoundly similar to the value which is conveyed by the B-Imperative form.

(2.65)        Ali    **si**    a        **samba**        naŋ,    ali    ye    a        faa  
                  you    SI    him    bring    to.here   you    YE<sub>2</sub>   him    kill  
                  ‘Bring him here and kill him!’

The idea of a command may be strengthened and made explicit by means of the particle *fo*. Compare the two following sentences: while the example (2.66.a) portrays a future event as an obligation, the example (2.66.b) emphasises the necessity of the action, leaving the temporal connotations (i.e. the futurity of an activity) in the second plan:

(2.66) a.        I        **si**    a        **safee!**  
                  you    SI    it        write  
                  ‘You will write it! / You must write! / Write it!’  
                  b.        Fo    i        **si**    a        **safee!**  
                  OBL   you    SI    it        write  
                  ‘You must write it / You have to write it’

When the SI construction is used with the first person singular or plural, it again indicates future activities but, this time, frequently coloured by a modal shade of volition and promise:

<sup>126</sup> The YE<sub>2</sub> construction is formed by means of the entity *ye* (or its variants in the first person singular and plural: *ŋa*, *na*, *ne* etc.), e.g. *a ke* ‘to do’ > *a ye a ke* (for detail, see section 6.2).

- (2.67) a. N    **si**    a    **ke!**  
 I    SI    it    do  
 ‘[I promise,] I will do it!’
- b. N    **si**    **naa!**  
 I    SI    come  
 ‘[I promise,] I will come!’

Nevertheless, the SI gram employed in the first person singular and plural may also indicate orders and necessity. In that case, it is most commonly introduced by the particle *fo*. This means that if one wishes to emphasise the idea of obligation – and conversely minimise temporal connotations (i.e. the future tense value) and disregard or eliminate volitional nuances – then one quite regularly employs the particle *fo*:

- (2.68) Fo    n    **si**    **mur**u    naŋ  
 OBL I    SI    return    to.here  
 ‘I must come back / I have to come back’

Additionally, when a sentence that includes the SI construction in the first person singular or plural constitutes a question, the sense of the entire expression is analogous to a mood of permission (2.69.a) or deliberation (2.69.b):

- (2.69) a. Fo    n    **se**    **du**ŋ    jaŋ?  
 QUES I    SI    enter    here  
 ‘May I come in?’
- b. M    maŋ    kendeyaa.    Fo    n    **si**    **taa**    lopitaanoo    to?  
 I    is.not    be.healthy    QUES I    SI    go    hospital    to  
 ‘I am not well. Should I go to the hospital?’

The SI form may likewise be addressed to the third person singular and plural with a value of future necessity and obligation – comparable to the sense which is available in the remaining persons – conveying strong orders, commands, instructions or wishes:

- (2.70) a. A    **si**    **naa!**  
 he    SI    come  
 ‘He will come!’ / ‘He must come!’ / ‘May he come!’
- b. Kayroo    **si**    **tara**    duniyaa    moolu    kono  
 peace    SI    be    world    people    in  
 ‘May peace be on earth among the people!’

Yet again, the nuance of obligation may be emphasised and made explicit if one employs the particle *fo*. In this manner, it is reasonable to conclude that when addressed to the third person – both with and without the word *fo* – the SI construction approximates the category of a jussive:

- (2.71) Fo a **si** a **ke!**  
 OBL he SI it do  
 ‘He must do it!’ / ‘He has to do it!’

The modal value of necessity and compulsion may likewise appear in a past time frame, corresponding to English expressions such as *had to* or *should*:

- (2.72) a. Ì **si** **mur**u naŋ  
 They SI return to.here  
 ‘They had to/they should [at that time, they were compelled to] return’  
 b. Ì **si** a la yaamaroolu niŋ luwaalu **muta**  
 they SI he of commandments and statutes accept  
 ‘They had to / should [at that time, they were compelled to] keep his commandments and statutes’

In other examples found with a past reference, the SI form approximates the category of a future in the past, such as the English expression *he was going to do* or the Spanish locution *iba a hacer*, although a properly modal interpretation (*should*, *ought*, *could*) is also possible:<sup>127</sup>

- (2.73) Bituŋ Menahemu ye kodoo dii a la,  
 then Menahem did silver give him to  
 ‘Then Menahem gave him the silver  
 ñiŋ kamma la a **si** a **maakoyi** ka...  
 this because of he SI him help so.that...  
 because of this he was going to help him to/ he ought to help him to...’  
 (WEC 1989)

As far as modal properties are concerned, in certain instances, the only value available – or relevant – is the sense of the epistemic possibility. Conversely in such cases, the temporal meaning of a future is eliminated:

- (2.74) a. A **si** **ke**  
 it SI happen  
 ‘It may happen’ / ‘Maybe’  
 b. A **si** **beŋ** saayiŋ  
 it SI agree now  
 ‘It may be possible now’

In addition to future and modal values introduced thus far, one may detect another – although rather infrequent – use of the SI gram in main clauses. Namely, this construction may display

<sup>127</sup> Alternative labels can be ‘past prospective’ or ‘aspectual future’.

a force that is similar to the value which is offered by the KA form: it expresses habitual actions, general or prolonged activities involving extended duration, and gnomic truths. This group of senses can be clearly observed in sentences 2.75.a-b where the SI and KA constructions occur jointly and both convey the meaning of a habitual, general or simple present:

- (2.75) a.    Ì        buka    sila    Alla    la  
               they    do.not   fear    God    at  
               ‘They do not fear God,  
                   sako    ì        **si**     a        la        karandiroolu  
                   nor    they    SI     he     of     instructions  
                   nor do they follow his instructions  
                           niŋ    a        la        kumoolu     **muta**  
                           and    he     of     words        accept  
                           and his ordinances’ (adapted from WEC 1989)
- b.        A        buka    a        je        sako    a        **si**    a        **loŋ**  
               he     deos.not    it     see    or     he     SI    it     know  
               ‘He neither sees him nor knows him’

Given the profoundly modal character of the SI construction, it is not surprising that it frequently appears in the company of an explicitly modal verb *noo* ‘can, may, be able, know how to’ (for the description of the semantics of the NOO gram, see section 4.1). It should be noted that in such cases, the future sense of the SI gram is significantly weakened and the most relevant value corresponds to modality. It is also important to observe that in these uses, the nuances of obligation and necessity, typical of cases in which the SI form is found unaccompanied by the auxiliary *noo*, are missing.

In various instances, the *si* + *noo* sequence expresses agentive modal senses related to physical ability or mental capacity, thus indicating that the subject can perform a given action because he or she is able to do it or knows how to do it:

- (7.76) a.    N        **se**        motoo **borindi**     **noo**  
               I        SI        car     drive        can  
               ‘I can drive a car’ / ‘I know how to drive a car’
- b.        N        **si**        a        **ke**     **noo**  
               I        SI        it     do        can  
               ‘I can (am able to) do it’

The value of root possibility is equally common. This type of modal meaning is closely related to the concept of ability or capacity. However, speakers do not pronounce themselves on the likelihood of a given situation and its actualisation (cf. the epistemic modal sense below) or on their mental and physical capacity (cf. examples quoted above), but rather merely state whether there is a possibility of performing an event (see the following example

provided by Depraetere & Reed 2011:3: *You can find the details on the Internet*; cf. Depraetere & Reed 2006:269-290, 2011:4):

- (2.77) a. I     **si**     a     **tara noo**     bitikoo     to  
           you   SI    it     find   can   shop     at  
           ‘You can find it at the shop’
- b. N     **si**     ì     **kuu noo**     araba-wo-araba  
           I     SI     them wash   can   every.Wednesday  
           ‘I can wash them every Wednesday’

The SI form accompanied by *noo* can also convey the idea of epistemic possibility. In such instances, the speaker indicates that a given proposition is possibly true in terms of probability or verisimilitude:

- (2.78)     A     **se**     **naa noo**  
           he    SI     come   can  
           ‘He may come’ / ‘It is possible that he comes’

Likewise, the idea of permission is commonly expressed by the periphrasis composed by the auxiliary *si* and the verb *noo*:

- (2.79) a. Fo               n     **se**     **taa noo?**  
           QUES            I     SI     go     can  
           ‘May I go?’
- b. I     **si**     **taa noo**     saayinj!  
           you   SI     go     can     now  
           ‘You may go now!’

Finally, the verb *noo* in the SI construction may express certain volitional nuances of daring:

- (2.80)     Ite     **si**     a     **fo noo**     ñaadi   le     ko  
           you   SI     it     say   can   how   FOC   that  
           ‘How can you (dare you) say that...’

The SI construction is frequently found in apodoses of conditional or temporal phrases. As far as temporal apodoses are concerned, the SI gram indicates future events or situations that are temporarily preceded by other future activities, expressed in protases (see example 2.81, below). It should be noted that although clearly future-oriented, the SI gram sometimes preserves modal shades of meanings such as necessity, obligation, volition or possibility:

- (2.81) Sooma        nij     a     naata,        ñ     **si**     **taa**     lopitaanoo   to  
           tomorrow   when he   have.come,   we   SI     go     hospital   to  
           ‘When he comes (once he has come) tomorrow, we will go to the hospital’

However, a similar context may frequently be interpreted in conditional terms. In such cases, the SI construction indicates certain and definite (2.82.a-b) or possible and probable (2.82.c-d) future situations that logically (and frequently temporarily) depend on conditions introduced in protases. Once more, the future value is regularly accompanied by modal undertones, either real-factual (2.82.a-b) or real-counterfactual (2.82.c-d):

- (2.82) a. Niṅ ḡa kodoo soto, n **si** **taa** Banjul  
 if I money have, I SI go Banjul  
 ‘If I have money, I will certainly go to Banjul’
- b. Niṅ a naata, n **si** a **je**  
 if he has.come, I SI him see  
 ‘If he comes, I will see him’
- c. Niṅ ḡa kodoo soto nuṅ, n **si** **taa** Banjul  
 if I.did money have then, I SI go Banjul  
 ‘If I had money, I would go to Banjul’
- d. Niṅ ḡa kodoo soto, n **si** **wasa** nuṅ  
 if I.did money have, I SI be.happy then  
 ‘If I had money, I would be happy’

It is also possible to find periphrastic chains with the element *si* and the verb *noo* in such apodotic environments:

- (2.83) Niṅ i lafita, i **si** n **kendeyandi** **noo** le!  
 if you want, you SI me cure can FOC  
 ‘If you want, you will / you can / you will be able to cure me’

The examples found in apodoses presented thus far generally do not differ from the use of the SI construction in the main independent phrases introduced previously, which may be embraced under the labels of modality and/or futurity. More interesting are instances where the SI gram appears in unreal counterfactual conditional periods, referring to past events or situations. In such uses, the SI form indicates that a given event could have occurred if a certain condition had been met. However, neither that condition nor the fact depending on it took place.

- (2.84) a. Niṅ ite naata kunuṅ, ntelu **si** a **ke** nuṅ  
 if you came yesterday, we SI it do then  
 ‘If you had come yesterday, we would have done it’
- b. Niṅ nte ye motoo soto nuṅ,  
 if I did car have then  
 ‘If I had had the car,  
 n **si** **taa** Banjunu dimaasi tambilaa  
 I SI go Banjul Sunday last

I would have gone to Banjul last Sunday'

Another syntactic environment in which the SI gram is abundantly found corresponds to subordinate clauses. To be exact, the SI form is extensively employed both in asyndetic and syndetic clauses. The former fail to be introduced by any conjunction, whereas the latter are headed by conjunctions, such as *ko*, *fo* and *puru*. In these cases, expressing a sense of finality or goal, and ideas of necessity, possibility or likelihood, the SI construction approximates the category of a subjunctive.

In an asyndetic environment, the construction is commonly employed in order to express various modal meanings (especially, the ideas of possibility (2.85.a-c) and obligation (2.85.d)) which are clearly analogous to the senses that are displayed in main independent clauses:

- (2.85) a. A    niŋ    ì        diyaamuta,  
 he    with   they    talked,  
 'They discussed  
       a    **si**    kewo   ñiŋ    **jamfaa**    noo    ñaameŋ  
       he    SI    man    this    betray    can    how  
 how he could betray the man' (i.e. They discussed how to betray the man)
- b.    Ì        diyaamuta    ñoo        ye, ì        **si**    meŋ    **ke**    noo  
 they    talked        each.other to    they    SI    what    do    can  
 'They discussed what they could do' (i.e. They discussed what to do)
- c.    Moolu    be        a        ñiniŋ    kaŋ,    ì        **si**    kewo    ñiŋ    **faa**    ñaameŋ  
 people    NVP    it        seek    on,    they    SI    man    this    kill    how  
 'People were plotting how they could/might/would kill him' (i.e. They were plotting how to kill him)
- d.    I        lafita    ñ        **si**    a        **parendi**    minto    le?  
 you    want    we    SI    it        prepare    where    FOC  
 'Where do you want, we should prepare it?' (i.e. Where do you want us to prepare it?)

With the lexeme *ko* '[saying] that', the SI construction introduces the idea of finality, coloured by an undertone of obligation and necessity:

- (2.86) a.    A        ye        a        fo        n        ye        ko        n        **se**    **naa**  
 he    did    it        say    me    to        that    I        SI    come  
 'He told me [saying] that I should come' / 'He told me to come'
- b.    A        ye        a        daani    ko  
 he    did    it        ask    that  
 'He asked him [saying] that  
       a        **si**    kuluno    **jamfandi**    tintoo    la        domandiŋ  
       he    SI    boat        put.out    shore    at        a.little

he should put out the boat a little way from the shore’ (i.e. He asked him to put out the boat a little way from the shore)

When headed by the conjunction *fo* ‘that, so that’, the SI construction introduces the idea of purpose and finality (see examples 2.87.a-b),<sup>128</sup> accompanied by persistent modal tones of possibility-potentiality (*could, may, might*; see examples 2.88.a-b) and/or obligation (*must, should*; see examples 2.89.a-b):

- (2.87) a.    Ì     ye     a     daani, fo     a     **se**     **duŋ**     konoto  
 they did him ask, so.that he     SI     enter     inside  
 ‘They asked him to come inside’ (or: They asked him; he was compelled to come)
- b.    N     hameta baake     le,     fo     n     **se**     domoroo **domo**  
 I     want     very.much     FOC, so.that I     SI     food     eat  
 ‘I so want to eat’
- (2.88) a.    I     bambanj     fo     ntel     **si**     a     **ke**     noo  
 REFL hurry.up     so.that we     SI     it     do     can  
 ‘Hurry up so that we can do it’
- b.    Siimaŋo     parendi     ñ     ye,     fo     ñ     **si**     a **domo**  
 dinner     prepare     we     for,     so.that we     SI     it eat  
 ‘Prepare dinner for us, so that we can eat’
- (2.89) a.    N     lafita fo     a     **si**     a     **ke**     nuŋ  
 I     want so.that he     SI     it     do     then  
 ‘I want you to have done it’ (I want, you should have done it)
- b.    A     ye     ñiŋ     ne     fo     ì     ye     ko  
 he     did     this     FOC say     them     to     that  
 ‘He told them to  
       ì     **si**     **yelema** ka     bo     ì     la sila kuruŋolu     kaŋ  
       they SI     turn     from<sup>129</sup>     you     of way bad.ones     on  
       turn from their evil ways’

When a subordinate clause is introduced by the conjunction *puru* ‘so that, in order to’, the SI gram almost invariably expresses aims and goals, functioning as a purposive subjunctive category:

- (2.90) a.    Ða     a     faa     puru     n     **se**     a     la     buŋo **soto**  
 I.did him kill so.that I     SI     he     of     house have

<sup>128</sup> It must be observed that even in these purpose clauses, the modal meaning of possibility and necessity is also available.

<sup>129</sup> The locution *ka bo* is a complex locative expression with the meaning similar to the English preposition *from*.

- ‘I killed him to have his house / so that I would/could have his house’
- b. Ì ye a daani puru a se duᵑ konoto  
 they did him ask so.that he SI enter inside  
 ‘They asked him to come in’

However, in certain cases – which are most commonly limited to instances where the SI construction is accompanied by the element *noo* – the idea of possibility and potentiality is also available:

- (2.91) Dà a faa puru ite si naa noo kotenke  
 we-did him kill so.that you SI come can again  
 ‘We killed him so that you could come again’

Lastly, it should be noted that negative senses, corresponding to the affirmative meanings conveyed by the SI gram, are expressed by three other formations. First, negative values related to the ideas of futurity and/or modal-futurity (both in main clause and in conditional apodoses) make use of the negative subtype of the LA form (*A te a ke la* ‘He will not do it’; cf. section 4.1). Second, senses that correspond to the subjunctive use of the SI gram found in subordinate clauses are, in a negative environment, conveyed by a form composed of the morpheme *kana* and the base of a lexical verb. Third, when the SI construction expressing customary activities or habitual situations is negated, it is regularly substituted by the negative variant of the KA gram, i.e. *buka* (cf. section 2.4, above).

### 2.5.2 Dynamic map

The provided evidence demonstrates that the meaning of the SI gram is generally related to the ideas of futurity, modality and habituality. In main independent clauses, the SI construction introduces future events very frequently accompanied by modal tones of necessity and obligation. In the first person, it expresses desires and promises, obligation and necessity, as well as, permission and deliberation. In the second person, the SI gram commonly functions as an imperative. In the third person, it conveys the idea of future necessity, approximating the category of a jussive. In the same environments, the SI construction may also express past-time obligation and necessity (*had to do* or *should have done*). Still with a past temporal reference, the SI gram can function as a future in the past (*was going to do*), accompanied by modal shades of meaning. The SI form is likewise found in a pure modal sense of epistemic possibility, with no apparent temporal (i.e. future) implications. Finally, it can denote (present) habitual, customary or durative activities. Consequently, this group of values may be understood as a set-theoretic union of futurity and (especially, deontic) modality, combined rarely with the sphere of habituality. This profoundly modal nature of the SI gram justifies its common use with the verb *noo* ‘be able, can, may’. In such cases, the entire expression conveys various modal nuances (physical ability, mental capacity, root possibility, epistemic possibility, permission and volition), frequently void of any future temporal connotations. One may, however, argue that in the

combination with the verb *noo*, the element *si* expresses the value of habituality or general truths (or, at least, of a general present tense) since the idea of ability or other shades of the modal meaning are portrayed as inherent qualities of a person or a thing. Additionally, in temporal and conditional apodoses, the SI construction may approximate a modally tinted future (factual *realis*), a conditional (factual *irrealis*) or past conditional (counterfactual *irrealis*). In asyndetic subordinate clauses, the SI formation is best classified as a purposive subjunctive, additionally accompanied by the nuances of possibility and necessity. When it is preceded by the conjunctions *ko* and *fo*, it indicates goal, necessity and possibility. When headed by the lexeme *puru*, the SI form typically expresses finality and intentions. Nevertheless, it also admits certain modal readings in terms of possibility and potentiality, particularly when it is used with the verb *noo*. One should also recall that the SI gram is restricted to affirmative contexts while in negatives it is regularly substituted by other formations.

The unification of the semantic potential of the SI gram is less straightforward than the mapping of the constructions analysed previously. This stems from the fact that polysemies whose senses cover domains of modality, futurity and habituality can arise following various evolutionary scenarios: imperfective path (cf. the KA gram), modal path (see chapter 4), (modal-)future path (see chapter 5) or modal contamination path (see chapter 6). The selection of the correct linkage depends on the history of the meaning extensions of the gram in question and especially on the input expression from which the formation has emerged. Since it is impossible to trace the direct history of the SI gram, which could show how the polysemy of this locution has been developed, one must rely on synchronic and comparative data.

First of all, it is highly important that some dialects (see below) employ the SI form typically in a habitual function (Wilson 2000, Tröbs 2004a:152), which – as we have seen before – is conveyed in Basse Mandinka regularly by the KA gram. This may be observed in in Western Manding (*si* in Xasonka and *se* in Maninka of Niokolo) and in Mokole cluster (*si* in Mogofin and *sí* in Koranko). Inversely, the prototypicality and intensity of future and modal uses of the SI gram are especially visible in Mandinka, while in other languages, cognate constructions rather tend to be related to the domain of habituality. In some languages, the cognate constructions of the SI gram are “apparently in free variation with” the imperfective-path grams built on the non-verbal predicator *be* (Kastenholz 2003:47; cf. also Bird et al. 1982). This may suggest that the habitual sense and possibly other values located on the imperfective path constitute the historical nucleus of the semantic potential of the formation, and that modal and future values arose in Basse Mandinka due to the subsequent processes leading from the semantic domains inherent to the imperfective path to modality and futurity (cf. Tröbs 2003, 2004a and 2009). As explained in the introductory chapter of this dissertation, the imperfective path leads from progressivity and continuity, on the one edge of the continuum, to habituality, durativity and gnomicity on the other. However, one should note that although the progressive-continuous and habitual values can constitute consecutive stages following each other on the same path, they may also emerge from two sources whose clines merge only at more advanced stages leading to broad imperfectives. Thus, the fact that the SI gram offers senses which can only be matched with

advanced fragments of the imperfective cline (viz. habitual and gnomic values), while the meanings reflecting more initial phases of the cline (especially, simultaneity, progressivity and continuity) are missing can be interpreted in two ways: the values corresponding to less advanced phases may be lost or they may never have existed. Nevertheless, what unifies these two interpretations is that both define the SI form as a highly developed imperfective diachrony, with a part of its semantic potential corresponding to the domains located at very advanced sections of the imperfective cline.

The common future sense and various subordinate modal uses can be explained as products of a common evolutionary tendency whereby old presents (i.e. advanced imperfective diachronies) gradually acquire a sense of futurity and subjunctive (syntactically conditioned) modality (cf. Tröbs 2004a:156-157, 2009:218-19). As explained in the first chapter, due to the reduction of the scope of their uses, old imperfectives – i.e. grams with prototypical uses located at advanced staged of the imperfective path – are frequently reinterpreted as subjunctives and/or futures. In other words, functions which previously were typical of imperfective and present grams are usually abandoned by these older forms, being “taken” by new (i.e. historically younger) formations. Inversely, the values that remain in the semantic potential of an old imperfective gram reflect non-invaded fragments of their evolutionary path. Most typically, they correspond to the domain of future and subjunctive (modal) uses.

As far as the future senses are concerned, they usually arise when a formation develops along the imperfective cline in a future temporal sphere. When new imperfective grams – with their prototypicality located in the domains of present progressivity, continuity, iterativity and even habituality – are developed and generalised, one of the spheres which still remains free from such novel invasive formations corresponds to the value of futurity. It is important to note that when the SI gram is employed as a future, it can introduce both imperfective (iterative, habitual or durative) and perfective (punctiliar, bounded, unique) activities. This indicates its semantic advancement on the cline as the form is not restricted to imperfective (progressive, continuous and habitual) uses.

As mentioned above, the various subjunctive values of the SI formation may likewise stem from the maturity of this imperfective-path gram. This time, however, the conversion of old presents into modal categories most likely corresponds to a wider process whereby originally non-modal constructions acquire modal values as a result of modal contamination. During this phenomenon, due to their common use in semantically, syntactically or pragmatically marked modal contexts, indicative locutions develop into properly modal categories. Typological studies teach us that the contexts where such new modal values are usually developed involve final, dependent or subordinate clauses (in particular, clauses introduced by verbs such as *want*, *order*, *say*), imperative environments and conditional periods. As explained in section 1.2.3.5, there are four stages of this process: 1) a non-modal form can be employed in certain modal contexts (indicative); 2) an indicative gram is associated with modal values available in the modal context in which it is used (modally colored indicative); 3) modal uses are regularised, non-modal readings are no longer available, and an old indicative gram is identified with a mood restricted to the typical context in which it emerged (a mood with no indicative uses); and 4) a modally contaminated

gram is “emancipated” from the explicitly modal milieu and may be used independently. It is important to note that the SI gram is particularly common in final clauses, conditional apodoses and in the pragmatic imperative context, which all constitute exemplary environments where old presents develop into moods. The modal type of the SI construction can also be found in “neutral” contexts where it is the verbal form itself that constitutes the primary means of conveying a modal nuance. Non-modal uses are still – even though less frequently – available. Thus, the SI gram can be classified as located in or in the proximity of the third stage of modal contamination where certain (contextually induced) modal senses not only are stabilised but are also the most prototypical. However, even though non-modal values are extremely infrequent, they do appear.

Additionally, certain agentive modal senses – in particular, the sense of physical ability and mental capacity typically found with the verb *noo* – as well as the values of root possibility, permission, volition and epistemic possibility (which could all have emerged from non-modal senses due to the process of modal contamination) can also be elucidated as having arisen because of the modal trajectory of habituals. Since the SI construction offers values that reflect initial stages of the modal path (such as agent modality and root possibility) and is, thus, not limited to functions that correspond to advanced and terminative phases of the trajectory (epistemic and syntactic modality), it may have developed certain modal senses not only due to the modal contamination but also because of the ability path set in motion by the more original habitual nuance. In fact, it could be argued that strong modal undertones of ability, capacity and root possibility have been encouraged by a common use of the SI form with the verb *noo*, where – as has been previously mentioned – the entity *si* seems to have a habitual, durative or gnomic value. Inversely, the habitual-durative-gnomic sense of the SI gram would best have been preserved in the company of the modal predicate *noo*.

The entire discussion suggests that all the clines deriving from the imperfective path (i.e. the modal contamination path of old presents to moods, the restriction of old presents to futurity, the modal ability path of habituals and the use of the habitual-durative-gnomic entity marker with a modal verb) jointly collaborate in intensifying the modal core of the formation, as all of them are related to semantic domains of modality. For example, as one of the central functions of future grams (either derived from explicitly modal formations or having originated in other sources) is the intention or the prediction, the acquisition of clear future uses may encourage further identification of the construction with the concept of modality. Similarly, the modal contamination path, which originated in explicit modal syntactic environments (conditional apodoses, subordinate final clauses and pragmatic imperative contexts) and the ability path of habituals – as well as the use of the habitual morpheme *si* with the modal verb *noo* – may jointly have led to the acquisition of epistemic modal meanings. It is therefore highly difficult to precisely determine which sense stems from which path. It is much more likely that various domains have been developed by following meaning extensions available along more than one cline. A simplified map where the clines and the senses that arose along them are kept separated can be formulated in the following approximated manner:

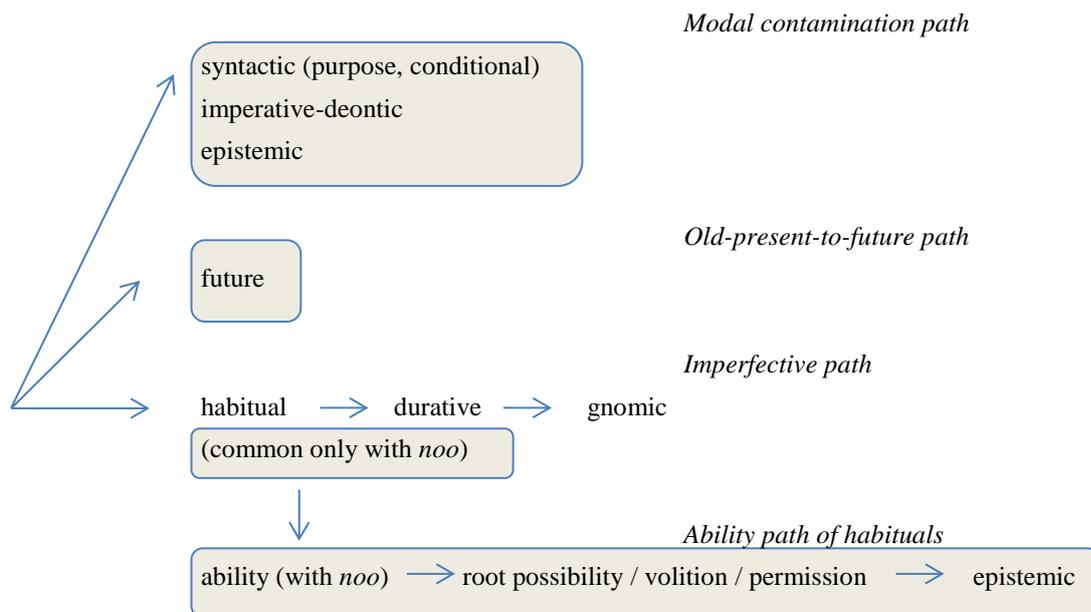


Figure 2.14: Model of the semantic space of the SI gram

The wave model (either rough or rounded) – narrowed to the senses available on the genuine imperfective path – under the assumption that the gram derived from a progressive input – can be formulated as follows:

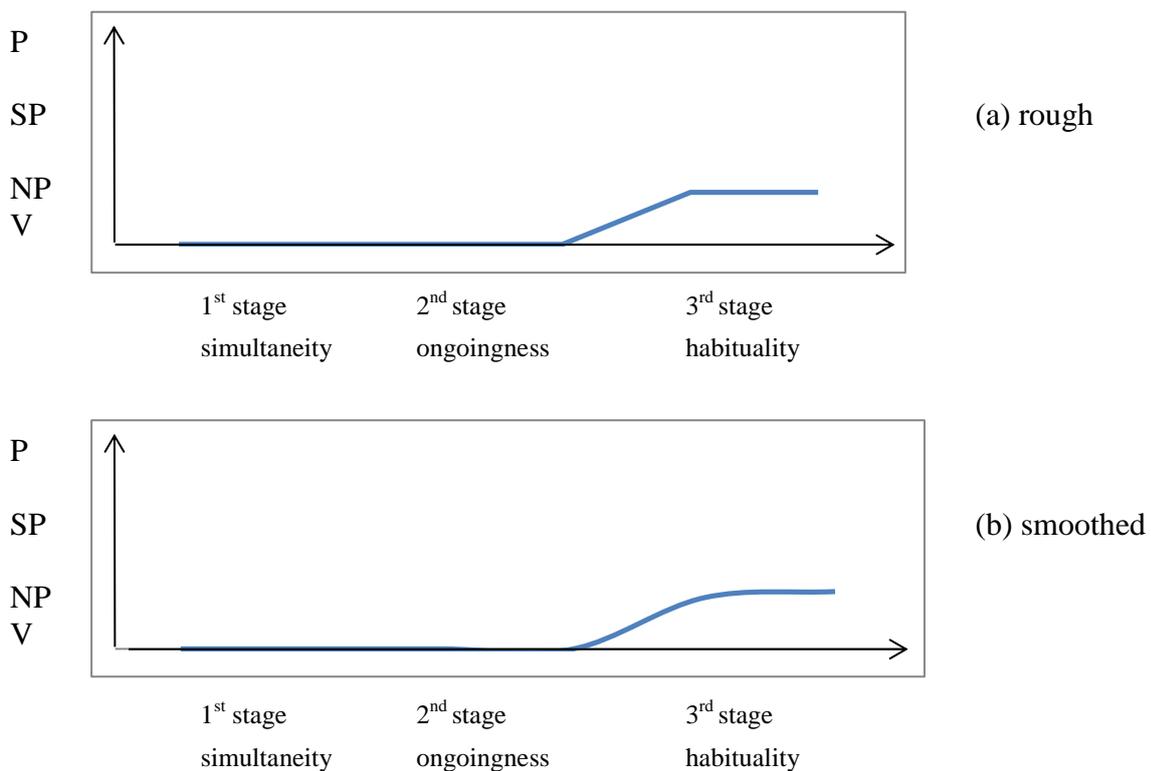


Figure 2.15: Wave model of the SI gram

If the domain of modality is incorporated into the model and viewed both as an extension which arose from the stage of habituality-gnomicity and as a phase subsequent to non-modal

senses available along the imperfective cline, the wave representation adopts the following form:

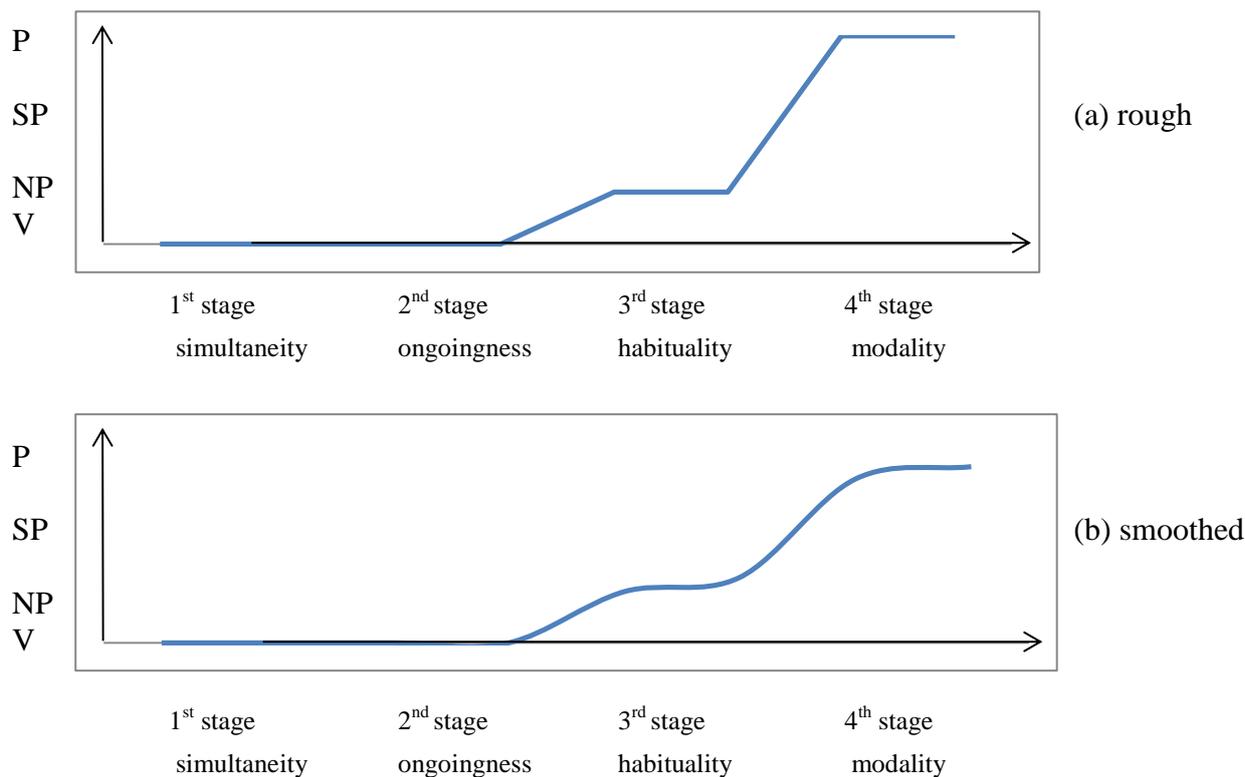


Figure 2.16: Extended wave model of the SI gram

Since the gram seems to be highly advanced on its path, the link between its form and meaning is less transparent than it was the case with the KAI, NomKAI and NomLA periphrases. There is no concrete lexeme *si* that could be related to the entity *si* of the SI gram in a similarly straightforward manner as the elements *kan* and *la* of the KAI, NomKAI and NomLA grams can directly be associated with the prepositions *kan* and *la* (see however possible relations with certain lexical verbs discussed further below in this section). This fact by itself may be regarded as compatible with the dynamic definition proposed in this section. Namely, as is typical of old diachronies (i.e. grams that are advanced on their paths), the cognitive relationship between the SI locution's shape and its meaning has been lost. As explained, old grams are typically untransparent – their meaning is less predictable from the form exhibited synchronically. Of course, they were transparent or cognitively motivated in their origins – i.e. at the time where the input expression was coined – but this transparency has gradually been lost with the progression on the cline.

However, structural properties of the SI gram – viewed as echoes of the input source from which the formation has emerged – can shed some light on its origin and hence corroborate the mapping proposed above. There are three main possibilities of the origin of the SI gram.<sup>130</sup>

<sup>130</sup> In addition, there is one 'folk-etymological' reconstruction that relates the element *si* to the adverb *sina* 'tomorrow', which would have derived from the noun *si* 'sun' and the verbal base *na* 'come' (Hamlyn 1935; cf.

First, it is possible to hypothesise a relationship between the auxiliary *si* of the SI gram and a lexical verb *sii* which in modern Basse Mandinka exhibits two sets of meanings: ‘sit (down)’ on the one hand, and ‘arrive, reach’ on the other. This verb also exists in Bambara with the meaning of arriving (on another meaning of this predicate, see further below in this section; see also section 4.4). The first value is especially tentative as postural verbs of sitting or being seated are a very common source of imperfective-path grams. However, even the directional nuance ‘arrive’ could be imagined as a possible input, as movement predicates of coming also constitute starting points of progressives and imperfective-path grams (cf. Bybee, Perkins & Pagliuca 1994:127-133; this scenario has been hypothesised by Creissels 1997a:7; compare a critical evaluation of this proposal by Kastenholz 2003:47-49 and Tröbs 2009:218-219). The shortening of the vowel would correspond to a regular process of phonetic reduction accompanying the progress in grammaticalisation. Accordingly, the origin of the SI gram would be typologically plausible and could motivate all the senses available along the imperfective cline, even those that are currently lost (progressive and continuous). Nevertheless, the already mentioned fact that the SI gram is a highly developed gram makes it rather suspicious that such a direct link between the entity *si* and the fully lexical predicate *sii* could have been maintained over a long period of time. If the SI gram is a highly advanced imperfective-path gram, it is doubtful that the element *si* and *sii* could still offer an almost identical shape. Further criticism has been provided by Kastenholz (2003:48) who observes that in Maninka the form of the lexical verb is *sé*, whereas the form of the auxiliary is *dí*. An inverse relation is found in Mogofin and Koranko. These languages exhibit the auxiliary form *sí* but the lexical verb *ké*. These formal “inconsistencies” render the postural or motion verb hypothesis rather improbable (see also Tröbs 2009:219).

Another possibility is not a progressive source but directly a habitual one. As has been explained in section 1.2.3.1 and mentioned above, habituals may either arise from progressive expressions or they can also emerge from periphrases that are specific of them. One of such typical sources of habituals contains verbs or analytical locutions that express modal nuance of ability or capacity, similar to *know*, *be able* and *can*. In this manner, it would be not the habitual meaning that prompts the modal sense of ability but *vice versa*. That is to say, the modal nuance would give rise to habitual readings which subsequently would set in motion the imperfective path, without however offering the stages of progressivity and continuity. Thus, the gram would still be defined by means of the imperfective cline although the cline would directly emerge from the habitual stage, itself linked to the modal origin of the gram. Accordingly, all the modal and future values could be explained both as uses typical of old presents (highly advanced stages of the imperfective path) as well as functions motivated by the modal ability cline (cf. section 4.4). In this context, it is important to note that Bambara and other Manding varieties possess a verb of the form *si/se* with the meaning of ‘being able, can’. It is from this predicate used in an original periphrasis that the SI gram would have emerged. This hypothesis coincides with the proposal formulated by Creissels (1997a:7),

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Claudi 1994). This hypothesis is still reproduced by Velupillai (2012:395) who explains the Western Mande future tense marker *sina* as a product of the grammaticalisation of an original expression ‘sun-come’, related to *sina* ‘tomorrow’.

mentioned in the previous paragraph, who jointly considers the lexeme *si/se* with the sense ‘arrive, reach’ and ‘be able’, without differentiating between the two meanings (cf. Kastenholz 2003:47-48). However if the value of ‘being able’ constitutes the original sense of the SI gram, the modal ability path must be recognised as, at least, concomitant of the imperfective path. It is also imaginable that given the bi-membered semantic potential of the *si(i)/é* lexeme in Manding and related languages, the two alternative scenarios occurred simultaneously: the value ‘arrive/sit’ would have set in motion the imperfective path of the entire length (i.e. from the progressive input), while the habitual reinterpretation of the sense ‘be able’ would have prompted the imperfective path from the habitual stage only. The modal and future senses would stem from the properly modal cline (the modal ability cline). However, they could also correspond to an advanced evolutionary phase of old presents (on the modal hypothesis and modal mapping of the SI gram, see section 4.4). However, this hypothesis faces the same problems as the proposal related to the lexical verb ‘sit, arrive, reach’ and seems to be rather unlikely (for a more detailed evaluation, see Kastenholz 2003:48 and Tröbs 2009:218-219).

Before presenting the third, and probably the most likely, reconstruction of the origin of the SI gram some comparative evidence must be introduced. In Manding, the SI gram appears in its westernmost and southern varieties, such as Mandinka (*si*), Xasonka (*si*), Niokolo Maninka (*se*; Koité-Herschel 1981:150-152, Tviet 1997, Tröbs 2009:215; see also Meyer 1983), being usually absent elsewhere (Wilson 2000:114, Kastenholz 2003:47 and Tröbs 2003). In most dialects of Mandinka and Maninkaxanwo, the habitual usage is predominant whereas the future use – if it exists – is expressed by an extension of the SI gram by means of *na* i.e. *sína*. Nevertheless, the habitual and future senses of the *s*-type forms are found in Xasonka and Niokolo Maninka (Tröbs 2009:215). Additionally, the *s*-type auxiliary is found in Mokole: in Koranko (Kastenholz 1983 and 1987:260-263) and in Mogofin (Janse 1998:31-33) with a similar range of uses, i.e. habitual, future and/or modal (cf. its classification as an “anticipative” (future and habitual) proposed by Kastenholz 1983:66). As previously mentioned, the fact that in some dialects the habitual use of the SI form predominates and/or that future values are missing seems to strengthen the imperfective-path theory and, thus, the progressive-source hypothesis (Wilson 2000:114). Although, in Bambara, the SI gram is missing (or has disappeared; cf. Tröbs 2003), the Bambara variant of Kolona does include in its verbal inventory a form composed of the morpheme *sí*, a cognate of the SI gram of Basse Mandinka (Dumestre & Hosaka 2000:14-15). This construction commonly appears in temporal apodoses introduced by the hypothetical or optative gram *máa*, fully comparable to the apodotic use of the SI in Basse Mandinka. Sometimes, the value can be atemporal, similar to a general present function of the SI gram mentioned in section 2.5.1. It can also be used as a “mild” imperative, introducing soft or more polite orders (directed to the second person), injunctions (directed to the third person) and exhortations (directed to the first person). In these uses, the form seems to be employed in place of the morpheme *ká* (cf. section 2.3.2). To conclude, the functions of the direct cognates of the SI

gram are compatible with the definition of the SI formation as a highly advanced imperfective-path gram.<sup>131</sup>

Apart from direct cognates of the *s*-type mentioned above, it is assumed that the auxiliary *si* and its cognates can also surface with a dental consonant instead of a sibilant. This occurs in Maninka where the element *dí* is used with the same habitual and future-modal meaning as the SI gram (see Kastenholz 2003:47, Tröbs 2003, 2004a and 2009:215). It is important to note that *s* and *d* are frequent correspondences between Maninka and Western Manding so that etymological relation between the two formal sub-types (i.e. sibilant and dental) can be maintained (Kastenholz 2003:48). Because of this and because of the presence of a dental (locative or progressive) copula built of a dental consonant and a vowel (mostly *e* or *i*), Tröbs (2003:6-7, 2004a:155-156) views the SI/DI grams as having been derived from a common ancestor – “an old locative copula, which had developed into a general imperfective marker” or “a locative supportive item” (Tröbs 2003, 2004a:156, 2009:217-219). Given the forms available in various modern languages, this original element is reconstructed as *\*ti/e* and *\*di/e* – a “*TI*-type” in Tröbs’ terminology (Tröbs 2009:218; see already Creissels 1997b:11). Accordingly, Tröbs defines the SI construction as an old imperfective-path gram of a locative and, hence, progressive origin, the first and oldest grammaticalisation cycle of imperfective formations in Manding (Tröbs 2003:3, 2004a:156-157, 2009:218-219). In fact, Tröbs (2003) goes even further in his reconstruction, assuming that the original periphrasis has been simplified and the locative marker (i.e. a postposition) lost, by which the gram ceased to be semantically transparent. Due to the creation and advancement of the progressive periphrases with *la* (second cycle) and *kaŋ* (third cycle), the SI/DI forms (successors of the *\*ti/e* and *\*di/e* grammaticalisation cycle) have been reduced to habitual and future domains (ibid.).<sup>132</sup>

Among, the three hypotheses concerning the origin of the SI gram – i.e. as a locution derived from the verb *si/se* ‘sit/arrive’, as a modal periphrasis built on the same predicate but conveying the sense of ‘being able’, or as a locative expression composed of a copula and possibly (although nowadays lost) a postposition – the third proposal seems to be the most likely (cf. Tröbs 2009:218-219). If this reconstruction is accurate, the history of the auxiliary *si* and the SI gram would fully be compatible with the mapping proposed in this dissertation. In fact, my proposal would be entirely harmonious with the views formulated by Tröbs (2003, 2004a), according to whom the SI gram is an old imperfective-path construction (originally a progressive) which has lost progressive and continuous uses and specialised in the area of habituality, futurity and/or modality.<sup>133</sup>

<sup>131</sup> However, such uses do not rule out the possibility of the classification of the gram in terms of a modal path (cf. section 4.4).

<sup>132</sup> In this respect, one should note that Kastenholz (2003:48) mentions a possible relation between the SI gram(s) and the Vai verb *tí* with the meaning ‘become’ or, in the transitive construction, ‘make something into something’ (Cf. Tröbs 2009:218). However, this connection is not uncontroversial (Kastenholz 2003:48). In addition, one finds a defective verb *tí* in Bobo with the meaning ‘be, exist’. This verb can also be used in progressive constructions (Tröbs 2009:219).

<sup>133</sup> The two other hypotheses, related to the Creissels’ proposal discussed previously, are also fully compatible with the map of the SI form designed in this section.

## 2.6 The imperfective stream

In the previous sections, I have presented five verbal constructions whose meaning can be dynamically defined by means of a chaining mechanism based on a diachronic principle referred to as an ‘imperfective path’ and/or clines that derive from such a path: the ability path of habituals, the path of old presents towards futures, or the modal contamination path. In all these cases, one is dealing with an original imperfective-path locution that, on the one hand, has acquired senses which are available on the imperfective path and that, on the other hand, has incorporated values which are located on clines descending from the imperfective trajectory, constituting its further extensions.

First, given the semantic potential of each gram, the qualitative maps of the five forms have been designed and chained by means of the imperfective path and clines related to it. In this manner – and in clear contrast to taxonomical inventory of senses – the proposed definitions have introduced the cohesion to the array of senses, showing that the semantic potential is not accidental or random, but constitutes a coherent and rational phenomenon. Additionally, the path definitions have enabled me to preserve the entire semantic richness of the five forms, giving access to all the values offered by them. No sense has been viewed as odd or irregular, as all of them could be accommodated on a path. Moreover, since the meaning of each formation has been portrayed as an evolutionary process, i.e. as a portion of a path or a cluster of them, the definitions have transformed the static semantic potentials of the forms into kinetic or vectored maps – each synchronic semantic state has been given an order and direction. Consequently, the path modelling has introduced the concept of time into the synchronic definition. By doing so, the use of the mapping founded upon the grammaticalisation cline made it possible to analyse grams as metastable, i.e. as objects and as processes simultaneously. Such kinetic definitions are also predictive as far as the diachrony is concerned, because they enable us to postulate previous and posterior evolutionary stages of the gram. By knowing what the kinetic vector of a gram is, it is possible to hypothesise, with a relative degree of probability, its origin and, in particular, reconstruct the source from which the analysed formation has emerged.

In light of the provided evidence, the KAD, NomKAD and NomLA formations have been defined as covering the entire length of the imperfective cline. They span from the stage of simultaneity to the stage of gnomicity. The KA form has been classified as ranging from the phase of progressivity to the phase of gnomicity. The SI construction covers the sections of habituality, durativity and gnomicity. Since the KAD, NomKAD and NomLA formations span the entire length of the imperfective cline, they can be viewed as less advanced on the path than the other grams. Inversely, as the KA locution fails to cover the most original section of the path (viz. the stage of simultaneity), it can be regarded as more advanced. Finally, the SI form seems to be the most advanced imperfective-path gram – it matches senses that are only located at central and final segments of this diachronic trajectory. In addition, the two most advanced formations (i.e. the KA and SI forms) offer further modal extensions, commonly arising from the idea of habituality or from modal contamination, which is typical of old imperfective grams. As expected, since the SI form is the most advanced on the imperfective cline, its modalisation is the most profound (observe that this

form includes the sense of epistemic modality), while the modal character the KA locution is less marked (for instance, the sense of epistemic modality is usually unavailable). Moreover, the map of the SI construction shows the development of this form towards the idea of futurity, another regular extension of old imperfective constructions, which is missing in the semantic potential of the KA, KAD and NomKAD grams.

Additionally, by providing important information concerning the commonness of senses and, thus, by correlating sections of the map (which correspond to the stages on the path(s)) with prototypicality, the qualitative maps or qualitative, vectored semantic potentials have been made quantitative. By avoiding artificially equalling all the components of the map with respect to their contribution to the semantic network, the bi-dimensional model of two axes (the horizontal axis of kinetically plotted senses and the vertical axis of prototypicality) enables us to differentiate grams whose maps are topologically similar or identical. Furthermore, such quantitative maps bestow one with the possibility to preserve the fuzziness of language. By developing dynamic curves which include all the senses and specifying their weight in terms of prototypicality, comprehensive definitions have been formulated without imposing inflexible boundaries and without forcing a given gram to fit into a rigid taxonomical class. As the model has the advantage that it does not require the linguist to make any claim with respect to this – in fact from the model's perspective such taxonomical determinations are entirely pointless – grams have been defined as transitory objects related to and spanning various taxonomical prototypes. Since in the real-world boundaries are fuzzy and the rigid frontiers are universally replaced by transition phases, this model emphasises the transitional character of grammatical forms, showing that a form can be compatible with more than one taxonomical class although this compatibility is different in terms of prototypicality. By doing so, the definition determines the zones of prototypicality (the peaks on the curve) and gives full access to all possible non-prototypical sections of the map, without marginalising them or removing them from the global picture. Just like the qualitative maps, the representation of the meaning of grammatical forms as quantitative maps (or waves) provides further important insight into the grams' development: the more diachronically advanced (or the older) a gram is, the more advanced its prototypicality zone is. This implies that, although from a qualitative perspective, two or more grams may have similar semantic potentials and thus kinetic maps, the older formation will usually locate its prototypicality peak in more advanced sections of the  $x$ -axis, while a younger gram will do so in less advanced sections. Accordingly, they will be distinguishable with respect to the peaks of their waves.

In the case of the imperfective-path grams of Basse Mandinka, the KAD, NomKAD and NomLA formations locate their zones of prototypicality in the initial section of the cline, namely in the stages of simultaneity, progressivity and iterativity. The KA formation exhibits the peak of prototypicality in the stage of habituality, durativity and gnomicity, while the SI construction transfers its prototypicality to two extensions arising from the imperfective path, but not located on it, i.e. futurity and modality, which both constitute even more advanced developmental phases of original imperfective-path grams. Thus, the introduction of the concept of prototypicality enables us to differentiate between all the grams that develop along the imperfective cline in Basse Mandinka, and especially between those whose qualitative

kinetic maps are identical or highly similar. In this manner, although the dynamic maps of the KAIJ, NonKAIJ and NomLA, on the one hand, and KA form on the other are very similar, the two sets of formation clearly differ as far as their prototypicality is concerned. The former group of the grams exhibits the prototypicality peak in non-advanced sections of the imperfective path, while the latter form does so in the advanced fragments of this cline. In the same way, although the KA and SI formations are qualitatively comparable, covering the senses of habituality, durativity, gnomicity and various modal values, the intensity with which they do so is clearly distinct. The KA form locates its prototypicality in the area of habituality, durativity and gnomicity, while the SI gram does so in the zone of modality. In general, the advancement related to the quantitative map is analogous to the advancement deduced from purely qualitative maps.

As explained in section 1.2.2.4, the property of time dependency of grams and the kinetic-vectored nature of their semantics are even more evident if the forms, whose semantic potentials (albeit generated by different input expressions) are organised along the same path, are compared and represented as spanning different sections on the shared grammaticalisation channel – a stream. In this representation, grammatical forms can be imagined as recursive waves. The differences between them stem from a distinct advancement on the *x*-axis representing a common grammaticalisation trajectory. The overall topologies and wave peaks of the older ones cover more advanced fragments of the path. On the contrary, the younger forms span less advanced segments, both with respect to their topologies and prototypicality peaks.

Taking into consideration qualitative and quantitative maps, one may argue that in Basse Mandinka, there are three consecutive waves of formations traveling along the channel designed by the imperfective path. The first wave corresponds to the SI form whose map and prototypicality peak are the most advanced. This gram has almost abandoned the genuine imperfective-path channel and “run” down towards futures through various extensions traced by the modal path of habituales, the modal contamination path and the path of old imperfectives. The three senses available on the imperfective path, which the gram can still convey, correspond to the advanced sections of this cline and as such are marginal in the semantic potential of this formation. They are not prototypical but only found infrequently. Inversely, as the gram has been evolving, it has first acquired, next stabilised and finally abandoned the majority of the stages located on the imperfective path – it has almost passed through the entire trajectory. Nowadays, the zones of prototypicality of this formation are located outside the genuine imperfective path, i.e. in the determined sections of the path towards futurity (future sense), the modal path of habituales and/or the modal contamination path (various senses of modality).

The KA formation is a younger gram which constitutes the second wave on the imperfective stream. As the advancement of this gram on the channel is less profound than in the case of the SI construction, its historical age also seems to be more recent. Namely, the gram has travelled all the sections of the cline and reached extensions located outside the genuine imperfective track, thus developing towards modality. However, with the exception of the value of simultaneity (which is currently lost), it still offers senses that are placed in the initial fragments of the cline. Moreover, the prototypicality peak continues being located in

the genuine imperfective path, more precisely in its advanced section, i.e. in the zones of habituality, durativity and gnomicity. Inversely, the modal extensions are still marginal.

The three remaining constructions (KAD, NomKAD and NomLA) constitute the third – and the youngest – wave on the stream traced by the imperfective path. Accordingly, even though they virtually span to the furthestmost regions of the cline, their prototypicality peak – and, hence, the wave peak – is located in the initial sections of the channel (values of simultaneity and progressivity). Additionally, they all fail to offer extensions that posteriorly emerge from the imperfective path, such as various modal senses. This means that more advanced sections of the imperfective stream still remain (at least virtually) to be travelled by these three formations.

Consequently, the vectored qualitative and quantitative maps not only enable me to define each gram separately, but also provide the possibility to impose their mutual relation by ranging them as successive waves spreading along the shared evolutionary channel and acquiring senses that are available on it. The model of these consecutive waves on the imperfective stream can be posited in the following, clearly schematised and approximated, manner:

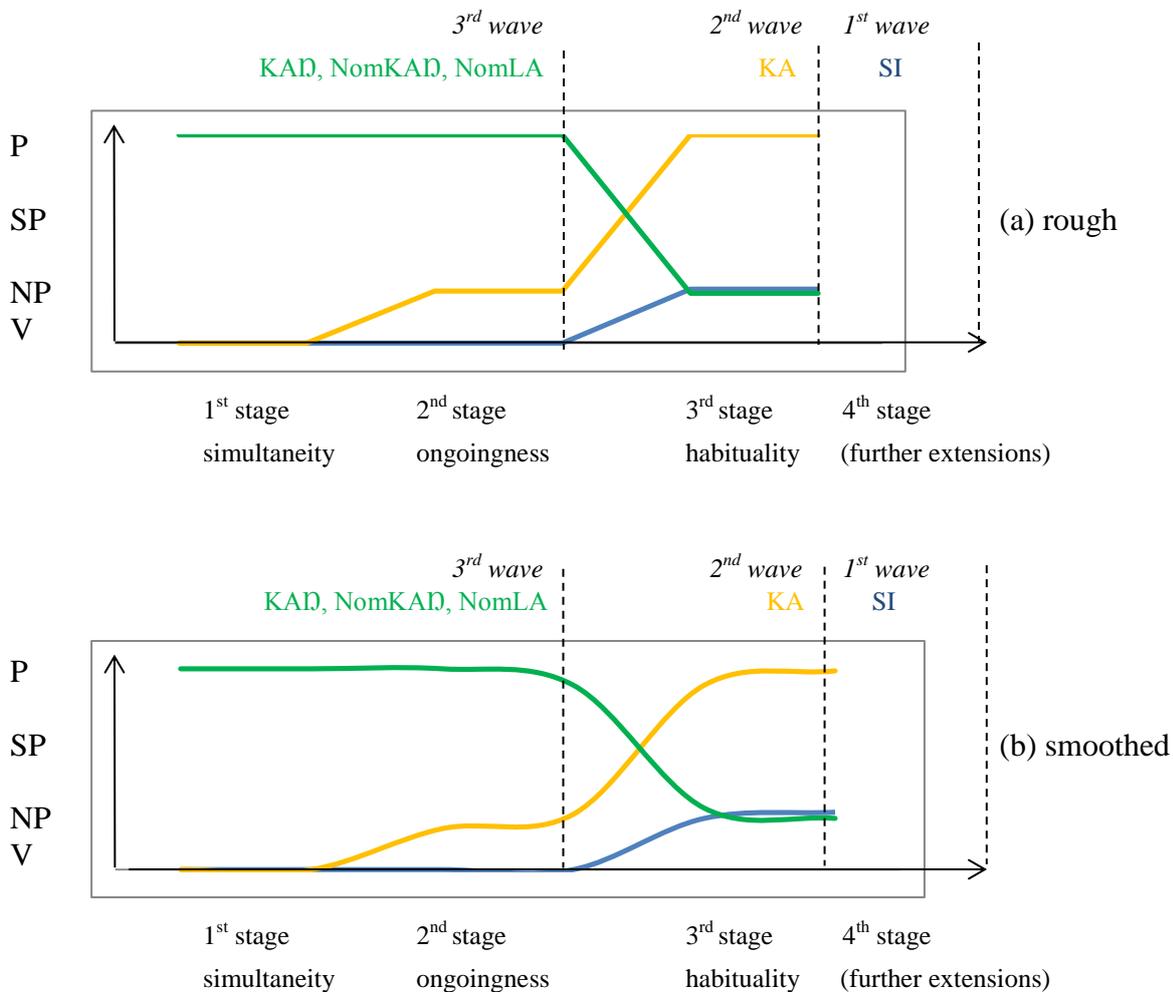


Figure 2.17: Travel-ness of the imperfective-path stream

If the modal senses that derive from the stage of habituality are included (as well as future values which tend to arise at more advanced evolutionary phases, being typical of old presents), the representation of consecutive waves takes the shape designed in Figure 2.18, below. This indicates that the least advanced grams are also the least modal (as well as, in general, less compatible with futurity; on the relation to the temporal frames, see further below in this section). The KAD, NomKAD and NomLA forms – as the least advanced – do not provide modal uses. The KA form, which is the second and, hence, more advanced wave, can sometimes be used modally. However, the modal use is not prototypical and it does not reach the area of epistemic possibility. Lastly, the most advanced SI form provides various modal values, including an epistemic sense, and locates one of its prototypicality peaks in the domain of modality.<sup>134</sup> It should be noted that the consecutiveness of the waves proposed here is analogous to the hypothesis formulated by Tröbs (2003, 2004a) concerning the grammaticalisation cycles of progressives-habituals in Manding and Mande.

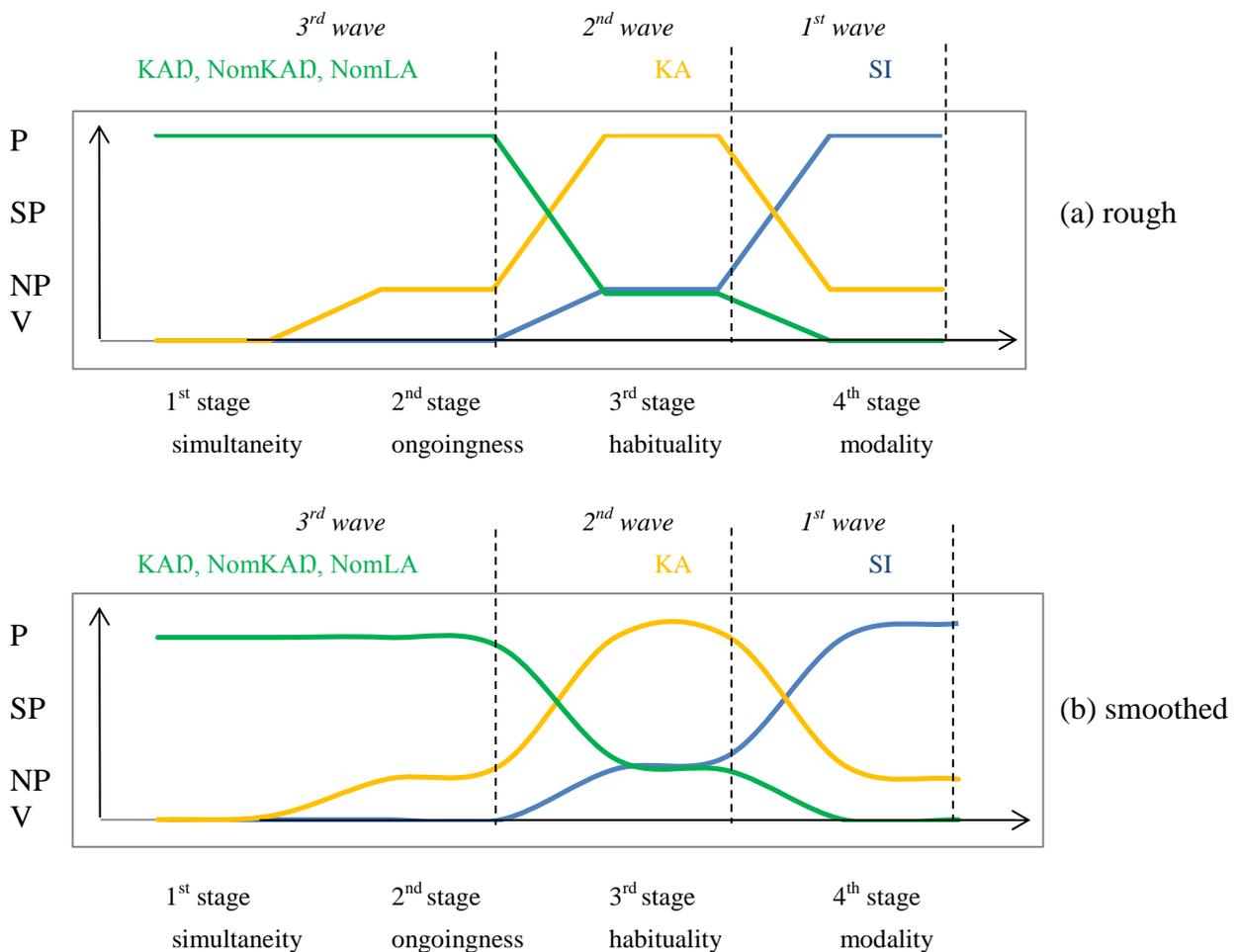


Figure 2.18: Travel-ness of the imperfective stream – extended model

The extended model developed above enables us to perceive the competition among the grams of the three waves for the domains available along the imperfective path and its

<sup>134</sup> In the case of the SI gram, the fourth stage also includes the domain of futurity.

extension towards modality. The gram of the first wave (the SI form) is highly advanced and specialises in the modal domain which is sporadically visited by the KA locution and entirely unexplored by the formations of the third wave. The gram of the second wave (the KA form) has been specialised in less advanced stages of the cline, i.e. in the area of habituality and duration. Indeed, the KA construction is the main means of conveying these values in Basse Mandinka. The wave peak of the SI formation has already passed this section of the stream, while the peak of the third wave has not reached this phase yet. Lastly, the grams of the third wave are mainly confined to the initial sections of the imperfective cline, having travelled very little on the stream. The competition among the three waves leads to the situation that the cline has been divided into three main zones in which each wave specialises. This specialisation stems from a distinct historical age of the three waves. The gram of the oldest wave (SI gram) is associated with the most advanced section. The gram of the younger wave predominates in the intermediate sections. The grams of the youngest wave prevail in the most initial sections. This means that although the grams of the three waves partially overlap as far as their meaning is concerned – i.e. certain areas on the stream are shared by more than one wave – each wave locates its peak in a different fragment of the path (cf. Figure 2.19). These areas of specialisations emerge due to the grams' internal properites and the properties of the stream (and thus because of the characteristics of the other forms traveling along this channel). These product prototypicalities coincide, in turn, with the associations the interviewed native speakers develop between a given form and its most salient meaning. To be exact, all the informants regularly identified the SI gram (the first wave) with futurity-modality, the KA gram (the second wave) with habituality, and the KAIḶ, NomKAIḶ and NomLA grams (the third wave) with ongoingness (cf. section 7.1.2).

Accordingly, the grams of the three waves can coexist in a dynamic equilibrium. Each wave moves ahead intending to conquer new zones available on the imperfective stream and thus pressing on an immediately preceding wave: the wave of the KA gram exerts pressure on the wave of the SI form, while the joint wave of the KAIḶ, NomKAIḶ and NomLA locutions exerts pressure on the wave of the KA formation.<sup>135</sup> However, the progression of grams along the channels determined by the imperfective path is also possible because earlier waves advanced so that posterior ones can move forward. In conclusion, the movement on the stream is possible because waves both follow each other and escape from each other.

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<sup>135</sup> The wave of the SI gram must analogously have exerted pressure on the wave that was immediately preceding, but which has already passed along the entire path and dissipated. This wave, which was prior to the wave of the SI form, is nowadays lost. There is probably no end to sequences of such earlier waves until the stage of the proto-language of *homo sapiens*.

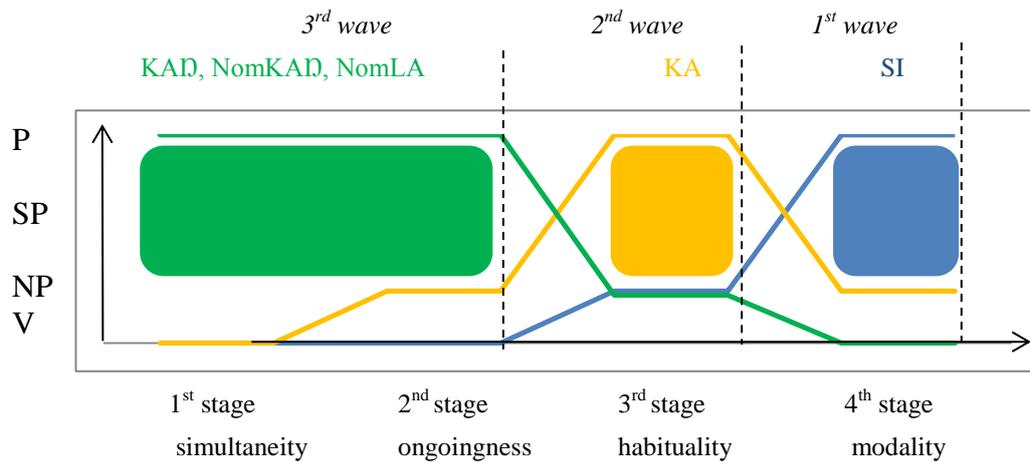


Figure 2.19: Travel-ness of the imperfective-path channel – extended model

Additionally, in Basse Mandinka, the progress on the imperfective stream seems to be correlated with the compatibility of the forms with temporal frames. The less advanced a gram is, the more typically it is employed in the present and past time frames and the more infrequently it appears with a future reference. Inversely, more advanced grams are rarely found within a past time frame, as well as, although less so, within a present time frame. To be exact, the KAD, NomKAD and KA grams – the forms that have been defined as the second and third waves – are typically used with a present and past reference. On the contrary, the SI gram – the oldest and most advanced wave – is usually employed with a future temporal reference and much less commonly with the present one. Even less common is its usage within a past time frame, which almost always is modally marked. However, one should observe that the NomLA form – one of the youngest and less advanced waves – is also employed with a future reference, even though this occurs much less frequently than the cases where the gram appears within a present or past time frame. This interaction of the grams of the imperfective channel and the temporal frames can be schematically represented in the following manner:

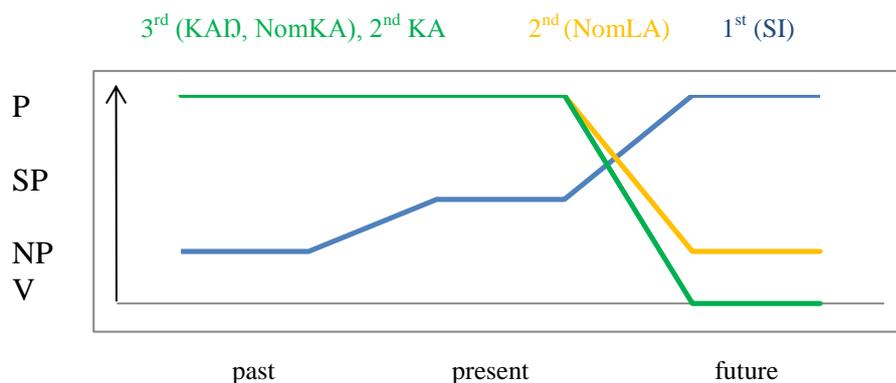


Figure 2.20: Time frames<sup>136</sup>

<sup>136</sup> In this figure, the horizontal axis is not chronological *sensu stricto*. Thus, this figure does not postulate that the past uses are more original than the present ones. It rather shows that more advanced grams develop a strong

The dynamic analysis also demonstrates that with time and progression on the cline, grams tend to exhibit fewer constraints. This is especially true as far as the syntactic environment and the semantic type of the root are concerned. That is to say, less advanced grams or younger waves are more reluctant in offering passive or de-transitive readings. They typically appear in active constructions. Likewise, less developed grams – or grams that are located in the initial section of the stream – show more incompatibilities with static and adjectival roots, while grams that are more developed (or located in the posterior zones of the current) are compatible with all types of roots. In less advanced formations, static and adjectival roots either do not appear or appear rarely. Additionally, the less developed grams tend to remodel the lexical aspect of certain verbal roots. To be exact, in grams defined as younger waves, the static and adjectival verbs acquire dynamic and ingressive readings. On the contrary, this transformation fails to occur in grams that are located in more advanced sections of the imperfective stream: the Aktionsart of the form is relatively stable, i.e. the lexical aspect of the verb used in a given gram does not substantially differ from the lexical aspect found in the root or base.

Finally, one should note that less advanced sections of the imperfective stream channel are populated by more grams (cf. a similar observation made by Tröbs 2004a). As one goes with the direction of the stream, fewer grams are found. Thus, at the beginning, there is a number of alternating constructions (KAD, NomKAD and NomLA). The differences in their usage are determined by their specific origin. It looks as if they were still competing to get selected as the optimal candidate for the journey along the remaining sections of the stream and, after this, to travel along other currents that “run” from the imperfective stream. The further the stream is visited, the larger number of original grams is filtered out and the fewer survive. However, the possibility of a relatively peaceful coexistence of the three grams in some areas of the stream may also stem from the fact that the KAD gram, on the one hand, and the NomKAD and NomLA forms, on the other hand, are specialised in two distinct morphosyntactic constructions. Namely, as explained previously, the KAD locution can express de-transitive values, while the NomKAD and NomLA cannot. Inversely, the NomKAD and NomLA grams are able to portray an action (*a safee* ‘to write’) in an active transitive manner without mentioning its object, merely emphasising the very activity (*M be saferoo kaŋ* and *M be saferoo la*).<sup>137</sup> The KAD formation, however, cannot introduce an action in an active transitive way without specifying its direct object (*M be a safee*). These differences may constitute the reason why the two

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association with the idea of futurity (which is typical of old presents or highly advanced imperfective-path grams) and gradually lose their compatibility with a past (this seems to occur first) and present temporal reference.

<sup>137</sup> It should be emphasised that the NomKAD and NomLA grams differ from the (Gambian) Mandinka rule, by admitting objects of underlying transitive verbs (employed as genitival modifiers) in a definite form, with plural suffixes and with pronominal determiners. This use seems to be widely spread, as it was accepted by all the informants. If we understand this use as an adjustment to the typical verbal pattern where direct objects frequently appear in their definite shape, this fact may suggest a further (formal) grammaticalisation stage of the Basse Mandinka nominal grams, similar (but not identical) to stage II in the continuum proposed by Tröbs (2004a:150).

types of simultaneous-ongoing constructions can peacefully coexist in the Basse Mandinka language.



## CHAPTER THREE

## RESULTATIVE-PATH MODULE

## 3. Resultative-path module

In this chapter, I will analyse five verbal grams the semantic potential of which can be linked and made coherent by means of the template built on the resultative path and its three sub-clines (anterior cline, simultaneous cline and evidential cline), as well as by means of a chaining mechanism that corresponds to an extension directly derivable from the resultative path (modal contamination path). This class of grams is represented by the following constructions: the TA form (section 3.1), the YE<sub>1</sub> form, (section 3.2), the NAATA form (section 3.3), the RII form (section 3.4) and the BANTA form (section 3.5). To mirror the research procedure adopted in the previous chapter, each section of this chapter will first provide general information related to the formal properties characterising a given locution. Next, a detailed description of the semantic potential of a gram will be offered: all contextually induced senses will be presented and illustrated by sentences extracted from the database. Afterwards, the meaning of each gram will be classified in dynamic terms as a kinetic map and as a wave after the areas of prototypical uses have been specified. In the concluding section 3.6, a dynamic model of the entire resultative stream in terms of a system of five consecutive waves will be formulated.

## 3.1 The TA gram

The TA gram takes its name from its main and entirely regular structural property, i.e. the suffix *-ta*. As exemplified in 3.1, the TA formation (e.g. *naata*) is derived by adding the morpheme *-ta* to the verbal base (in this case, *naa*):

- (3.1)            N        **naata**        suwo kono  
                   I        come-TA     home in  
                   ‘I came home’

The gram is consistently intransitive (cf. example 3.2.a) while its transitive homologue is formed by employing the YE<sub>1</sub> periphrasis (cf. example 3.2.b; for detail of the YE<sub>1</sub> gram, see section 3.2, below). This means that transitive roots can be uniquely used de-transitively in the TA formation: *a ke* ‘to do’ can only offer its de-transitive variant *ke* ‘be done’ (cf. examples 3.2.a-b). The negative variety is derived by using the element *maŋ* (cf. example 3.2.c):<sup>138</sup>

<sup>138</sup> Regarding the predicative marker *maŋ*, its use in Manding and its possible origin, see Creissels (1997b:15-18) and Babaev (2011:19-20; cf. also Kastenholz 2003). Babaev (2011:20) argues that this marker can be reconstructed as a Proto-Werstern Mande *\*má*. However, the genesis of this element is unclear. Most probably, it was already employed as a negative copula in Proto-Western Mande.

- (3.2) a. A **keta**  
it be.done-TA  
'It was / is done'
- b. A **ye** a **ke**  
he YE<sub>1</sub> it do  
'He did it'
- c. A **maŋ naa**  
he MAŋ come  
'He did not come'

### 3.1.1 Semantic potential

#### 3.1.1.1 Grammatical tradition

The definitions formulated in traditional grammatical studies on (Gambian) Mandinka usually emphasise the past and/or completive values of the TA gram. To be precise, Macbrair (1842:16) classifies the construction as an aorist of neuter – i.e. intransitive – verbs, Gamble (1987:17) and Colley (1995:15) as a completive aspect and past tense, Dramé (2003:47, 91) as an intransitive past, Kastenholtz (2003:43-45) as a perfect/perfective, and Creissels (2007, 2008:77, 2010a:3, 2010b:3, 2012:3) and Creissels & Jatta (1981:32) as an intransitive perfective-completive positive (for similar views, see Rowlands 1959 and Long 1971; cf. Spears 1965). In a more recent study, Creissels & Sambou (2013:70; see also Creissels 1983a) define the TA form as an “accompli-statif” with two primary semantic nuances: ongoing state and completed action. It can thus function as a perfect, resultative and stative. Additionally, it is used in a narrative function. Creissels (1983a) also observes that the TA gram can denote future eventuality in conditional sentences and be employed both in present and past time frames (cf. Wilson 2000:112).

#### 3.1.1.2 Evidence from Basse<sup>139</sup>

In Basse Mandinka, the TA construction is frequently employed in perfectal functions, i.e. in uses that are typical of present perfects. On various occasions, the TA gram offers the value of a resultative perfect of current relevance, indicating that certain effects of a previously accomplished dynamic action are still available and pertinent to the present state of affairs:

- (3.3) a. A **taata** marisewo to fokabaŋ  
he go-TA market to already  
'He has gone to the market (i.e. he is still there)'
- b. A **naata** suwo kono. A be jee  
he come-TA home in he NVP there  
'He has come home (i.e. he is at home). He is there'

<sup>139</sup> The evidence provided in this section draws from my article “Semantics of the *ta* construction” published in *Linguistica Copernicana* 6 (cf. Andrason 2011d).

- c. N     **ñinata**     i     too     la  
 I     forget-TA     his     name     at  
 ‘I have forgotten his name (i.e. I do not remember it)’

The TA form is also employed with the sense of an inclusive perfect, denoting that a given action or state has been continuing for an uninterrupted period of time from a particular moment in the past unto the present day:

- (3.4) a. M     **faamata**     taa     la     Banjul     baake  
 I     fail-TA     go     to     Banjul     very-much  
 ‘I have not been to Banjul for a long time’
- b. Ate     **tarata**     ntel     fee     le     kabiriŋ     foloodulaa     to  
 he     remain-TA     us     with     FOC     since     beginning     at  
 ‘He has been with us since the beginning’
- c. Nte     **tarata**     ali     fee     le     fo     waati     jaŋ     saayiŋ  
 I     remain-TA     you     with     FOC     until     time     long     now  
 ‘I have been with you for so long now’

The function of an inclusive perfect is particularly frequent with adjectival verbs:

- (3.5) a. N     **kuuranta**     kabiriŋ     1992  
 I     be.sick-TA     since     1992  
 ‘I have been sick since 1992’
- b. Ñiŋ     kewo     **finkita**     kabiriŋ     a     wuluuta  
 this     man     be.blind-TA     since     he     be.born-TA  
 ‘This man has been blind since he was born’

The TA formation may also express resultative activities that have repeatedly occurred, approximating the category of an iterative present perfect:

- (3.6) a. N     **ketuta**     siiñãa     jamaa     bii  
 I     faint-TA     time     many     today  
 ‘I have fainted many times today’
- b. I     **naata**     jaŋ     siiñãa     jelu?  
 you     come-TA     here     time     how-many  
 ‘How many times have you come here?’

Moreover, the TA construction is fully acceptable in the experiential perfect function. In this use, the event expressed by the verb constitutes a subject’s experience that has taken place at least once during his or her lifetime. The nuance of current relevance is still unmistakable, but the resultative value ceases to be pertinent:

- (3.7) a.   Ite    nene   **taata**   Speyin?  
           you    ever    go-TA   Spain  
           ‘Have you ever gone to Spain? (i.e. you may have come back)’
- b.    Haa,   n       **taata**   Speyin  
           Yes,   I        go-TA   Spain  
           ‘Yes, I have been to Spain (the responder had actually returned)’

The TA gram may likewise be employed with the force of an indefinite perfect. In this function, although expressing events that belong to a past temporal sphere, the construction fails to be introduced by words that would explicitly locate the activity in a precise moment in the past. Put differently, even though in such cases the TA form undoubtedly connotes a past action, the definite temporal location of this event is not overtly specified:<sup>140</sup>

- (3.8)       N       **naata**       Banjul,       añij   n       **taata**       Basse,  
           I        come-TA    Banjul,       and    I        go-TA       Basse  
           ‘I came to Banjul, I went to Basse,  
               añij   m       **muruuta**    Birikama  
               and    I        return-TA    Brikama  
               and I returned to Brikama’

Besides being available in a present temporal sphere (cf. examples 3.3-3.7 above), the prototypical taxis value of anteriority may also be found within past and future time frames. This means that the TA construction can function as a past perfect or pluperfect (3.9.a) and – although exclusively in subordinate temporal clauses – as a future perfect (3.9.b-c).

- (3.9) a.    N       naata        jaŋ,   kaatu   i    faamaa   **lafita**    a    la  
           I        come-TA    here   because your father want-TA   it    at  
           ‘I came here because your father [had] wanted me to’
- b.    M       be    taa    la,    nij    sanjiyo    **teyita**  
           I        NVP   go    to    when rain        stop-TA  
           ‘I will go when the rain has stopped’
- c.    N       te        a    domo   la    kotenko,   fonij    a    **naata**  
           I        NEG.NVP   it eat   to   again   unless   he    come-TA  
           ‘I will not eat anymore unless he has come’

<sup>140</sup> Unambiguous cases of an indefinite perfect sense are quite infrequent in the database due to the nature of the corpus. Crosslinguistically, the clearest cases of an indefinite perfect are usually found in written corpora or in large chunks of uninterrupted speech. Moreover, the subtype of an indefinite perfect that is relatively easy to be detected is the so-called journalistic perfect. Given that my database is oral and mainly composed of short fragments and isolated sentences, it does not include many examples of an indefinite perfect, in particular of its journalistic, hot-news use. This fact, however, does not imply that the indefinite perfect value is not prototypical in the semantic potential of the TA gram. In fact, by comparing the Mandinka translation of the New Testament (BGS 2011), it is clear that the TA form is commonly used to render the Greek aorist and perfect in the cases where these grams exhibit the value of an indefinite perfect (e.g. in Matthew 26:56 *keta* for *γέγονεν*).

Quite commonly, the TA gram can also be employed in the sense of a resultative proper gram. In this function, which is especially regular with roots whose bases can be transitive (*a ke* ‘to do something’ or *a safee* ‘to write something’), the formation provides two almost equally important pieces of information by referring to an already accomplished action and by indicating an ongoing state that has resulted from this prior activity. Virtually neither the prior dynamic event nor the posterior static result is given prominence. One should note that like other resultative proper constructions in languages of the world, the TA gram regularly appears in intransitive constructions and may be viewed as having a de-transitive force (3.10.a-b).<sup>141</sup> However, it is important to observe that similar examples like those in 3.10.a and 3.10.b can also be interpreted dynamically, i.e. in terms of a present perfect (cf. 3.10.c-d). The genuine resultative-proper meaning is more explicitly conveyed by the RII formation (see section 3.4).

- (3.10) a.      Leetaroo      **safeeta**      fokabaŋ  
                  letter              be.written-TA already  
                  ‘The letter is already written’
- b.      Ñiŋ      **keta**              fokabaŋ  
                  this    be.done-TA    already  
                  ‘This is already done’
- c.      Ñiŋ      kewo      **faata**  
                  this    man    be.killed-TA  
                  ‘This man has been killed’
- d.      A      **sambata**      arijana      kono  
                  he    be.taken-TA    heaven      in  
                  ‘He has been taken to heaven’

The TA construction is frequently used with an explicit past reference with no anterior (taxis) shades of meaning typical of pluperfects. In such cases, it rather functions as a prototypical definite (and non-perfectal) past. In this highly common usage, the TA gram may appear in contexts with different degrees of remoteness or temporal distance from the enunciator’s here-and-now. It is found in environments that refer to recent (hodiernal (3.11.a) or hesternal (3.11.b)), general (3.11.c) and remote (3.11.d) past moments:

- (3.11) a.      Waati jumaa le      i      naata?      N **naata**      waati      wooro kooma  
                  time    which FOC    you    come-TA? I    come-TA    hour    six      ago  
                  ‘When did you come? I came six hours ago’
- b.      A      **siinoota**      kunuŋ              hoteloo      to  
                  she    sleep-TA      yesterday      hotel              at  
                  ‘Yesterday She slept at the hotel’
- c.      A      **keta**              sanji      naani      kooma  
                  it    happen-TA      year      four      ago

<sup>141</sup> Of course, from a synchronic perspective, the fact that the TA gram is intransitive is conditioned by the absence of an overt direct object.

‘It happened four years ago’

- d. Mansa doo **nene** sotota. A **naata** Gambiya...  
king certain once be-TA he come-TA Gambia...  
‘Once upon a time there was a king. He came to Gambia...’

As far as the aspectual value of the past-time TA gram is concerned, the formation very commonly introduces perfective – unique, punctiliar and bounded – events:

- (3.12) a. N **taata** Banjul kunuŋ talaŋ saba  
I go-TA Banjul yesterday hour three  
‘I went to Banjul yesterday at three’  
b. A **faata** kari fula kooma  
he die-TA month two ago  
‘He died two months ago’

However, on certain occasions, the TA construction is likewise able to denote past activities characterised by extended duration:

- (3.13) a. N **sabatita** Banjul sanji fula. Saayinŋ m muruta Basse  
I live-TA Banjul year two now I return-TA Basse  
‘I lived in Banjul for ten years. Now I have returned to Basse’  
b. Kuraŋo **naata** kunuŋ suutoo bee  
electricity come-TA yesterday night all  
‘Yesterday the electricity was on the whole night’  
c. A **keta** mansa ti le fo sanji taŋ naani  
he be-TA king EXIS FOC until year ten four  
‘He was king during forty years’  
d. Woloolu **hawuta** m ma fo waati jaŋ  
dogs bark-TA us at for time long  
‘The dogs barked at us for a long time’

The durative value, similar to the imperfective past, is particularly evident and common with adjectival and static verbs (on adjectival and static verbs see below in this section):

- (3.14) a. A **kuuranta** le waati jamaa  
he be.sick-TA FOC time many  
‘He was sick for a long time’  
b. N **saasaata** fo luŋ luulu  
I be.sick-TA until day five  
‘I was sick for five days’

The durative value may clearly be observed in the following narrative passage adapted from the Bible where the TA form of a dynamic root *naa* ‘come’ co-occurs with the typical

habitual-durative construction, viz. the KA form (cf. the expressions *A ka karandiroo ke* ‘He used to teach’ and *A ka taa sabati* ‘He used to go to dwell’ in example 3.15, below) providing an habitual or durative sense:

- (3.15) Luŋ-wo-luŋ Yeesu ka karandiroo ke nuŋ...  
 Everyday Jesus used-to teaching do then...  
 ‘Everyday Jesus used to teach (was teaching) ...  
 Bari sutoo a ka taa sabati konkoo le to...  
 but at-night he used-to go stay mount FOC at...  
 but he used to go out and spend the night on the mount...  
 Aduŋ soomandaa juunoo, moolu bee **naata**  
 and morning early people all come-TA  
 and early in the morning people used to come’ (adapted from  
 WEC 1989)

One should bear in mind that the value of an inclusive perfect, which is relatively frequent, also offers an inherent durative force:

- (3.16) Sanji jelu i **jiyaata** Basse?  
 year how-many you lodge-TA Basse  
 ‘For how many years have you lived in Basse?’

It is likewise important to note that the TA form of the verb *tara* ‘be, remain’ is commonly employed to generate locutions which approximate the category of a progressive past, alternative to the KAD, NomKAD and NomLA forms described in chapter 2. From a typological perspective, past progressive constructions are frequently derived from auxiliaries that appear in the imperfective (cf. Spanish *estaba leyendo* ‘he was reading’) or simple past (cf. Icelandic *hann var að lesa* ‘he was reading’), but not in the perfective past tense. This would hence harmonise with a possibly non-perfective value of the TA gram, discussed in the previous paragraphs.

- (3.17) a. Ì **tarata** jalakaroo le **la**  
 they be-TA sewing.net EMPF LA  
 ‘They were mending the nets’  
 b. A **tarata** yankankati **kaŋ**  
 he be-TA be.in.torment KAD  
 ‘He was being tormented / he was in torments’

As far as the class of adjectival and static roots is concerned, the TA formation derived from these predicates typically conveys three closely related senses. First, it can offer a resultative

stative value, indicating that the present condition or quality has been acquired due to a previously performed action:<sup>142</sup>

- (3.18) a. Dokoo **faata** le  
 bottle be-full FOC  
 ‘The bottle is full (i.e. it has been filled out and now it is full)’  
 b. M **bataata** saayinj  
 I be.tired-TA now  
 ‘I am tired now (I have gotten tired and now I am tired)’

Second, and most frequently, if the TA gram is formed from adjectival verbs, it offers a present stative value, indicating present qualities or conditions. In this widespread use, the resultative nuance is unavailable (3.19.a). One should note that in the stative function, the meaning of the construction is virtually equivalent to the RII gram if this gram is derived from adjectival verbs (3.19.b; see also section 3.4).

- (3.19) a. A **kandita**  
 it be.hot-TA  
 ‘It is hot’  
 b. A **be kandirij**  
 it NVP be.hot-PART  
 ‘It is hot’

The present stative situation may be either actual-specific (3.20.a-b) or permanent-general (3.20.c-d):

- (3.20) a. N **konkota** saayinj  
 I be.hungry-TA now  
 ‘I am hungry now’  
 b. Bii a **kandita** baake  
 today it be.hot.-TA very.much  
 ‘Today it is very hot’  
 c. M faamaa **ñaamenta**  
 my father be.wise-TA  
 ‘My father is wise (wisdom is his permanent quality)’  
 d. Ñinj kewo **tilinta** le  
 this man be.righteous-TA FOC  
 ‘This man is righteous (righteousness is his permanent quality)’

<sup>142</sup> This value is similar to the sense that is offered by the resultative perfect of current relevance (cf. example 3.3). The main difference in that, this time, it is the static situation, condition and quality which are attributed with prominence, while the previous, dynamic event is merely suggested. The internal semantic arrangement of the resultative perfect is quite the reverse: the most important portion of the meaning corresponds to the dynamic event, which is somehow related to a present situation.

Third, the TA construction may express non-stative present activities, i.e. activities with no qualitative or descriptive undertones. In this usage, the TA gram introduces actual and/or permanent activities:

- (3.21) a. A **lafita** taa la Banjul  
 he want-TA go to Banjul  
 ‘He wants to go to Banjul’
- b. Kadoo **sotota** le suwo kono  
 Money be-TA FOC house in  
 ‘There is money at home’
- c. N **suulata** a la bii  
 I need-TA it at today  
 ‘I need it today’

As was the case with a dynamic perfectal meaning, the resultative stative, stative and durative values of the TA formation may also be found in a past time frame, yielding a resultative stative past, a stative past and a durative past (3.22.a-b). It is also possible to employ adjectival verbs in the future temporal sphere, although exclusively in subordinate temporal phrases (3.22.c).

- (3.22) a. Kunuŋ a **kuuranta**  
 yesterday he be.sick-TA  
 ‘He was sick yesterday’
- b. Mansa **lafita** a faa la  
 king want-TA him kill to  
 ‘The king wanted to kill him’
- c. Saama, niŋ ite **kuuranta**, kana naa jaŋ  
 tomorrow if you be.sick-TA do.not come here  
 ‘If you are sick tomorrow, do not come here!’

Nevertheless, one should also observe that adjectival and/or static roots in the TA formation can receive a dynamic reading – analogous to the present perfect or perfective past uses – besides the common stative interpretation:

- (3.23) a. Kewo **kendeyaata** wo loodulaa kiliŋo le to  
 man be.healthy-TA that place one FOC at  
 ‘The man got well (i.e. he became well / was cured) immediately’
- b. Kabiriŋ a ye ñiŋ moyi, a **sunuta**  
 when he did this hear he be.sad-TA  
 ‘When he heard this, he became sad’

Additionally, the TA locution is sometimes found with a performative force. In such cases – limited in Basse Mandinka to a few roots that are already performative by nature, i.e. verbs of

giving and endowing, as well as *verba dicendi* (i.e. exercitive, expositive, commissive, behabitive and verdictive verbs in the terminology of Austin 1962; see also Searle 1969, 1971/1976) – the sole fact of pronouncing the sentence is equivalent with performing a certain act (cf. Dahl 2008 and Bublitz 2009):

- (3.24) a. N     **sonta**           a     la!  
           I     agree-TA       it     with  
           ‘I agree with that!’  
       b. N     **sonta**           a     ma!  
           I     agree-TA       him   with  
           ‘I agree with him!’

Lastly, it should be noted that the TA construction is commonly employed with the conjunction *niŋ* ‘if’ in conditional protases, indicating hypothetical – real and factual – future activities on the accomplishment of which other subsequent future actions and situations depend (25.a). Thus, the event expressed in the protasis, both logically and temporarily, precedes the activity expressed in the apodosis, which most commonly employs one of the two future-like formations, i.e. the SI gram (cf. section 2.5) or the LA gram (cf. section 5.1). The TA form may likewise appear in counterfactual, real (3.25.b) and unreal (3.25.c), conditional phrases. At least as far as an intransitive context is concerned, the TA gram is the most common verbal construction used in conditional protases, be they real factual or (un)real counterfactual.

- (3.25) a. Sooma   niŋ i   **naata**,   m     be     taa     la mariseewo to  
           tomorrow if   you come-TA we     NVP go     to market     to  
           ‘If you come tomorrow we will go to the market’  
       b. Niŋ   nte   **fankata**,   nte   si     wasa           nuŋ  
           if     I     be.rich-TA then will be.happy then  
           ‘If I were rich, I would be happy’  
       c. Niŋ   ali   **naata**   kunuŋ, ali   be     seewoo     la     nuŋ  
           if     you   come-TA   you   NVP rejoice     to     then  
           ‘If you had come yesterday, you would have rejoiced’

### 3.1.2 Dynamic map

The evidence introduced in the previous section indicates that the semantic potential of the TA form is characterised by the following components. First, with relative frequency, the TA gram expresses the sense of a resultative proper category, introducing activities that are viewed as de-transitive ongoing states resulting from a prior and already accomplished action. Second, with respect to the domain of taxis, the TA construction is commonly used as a dynamic present perfect (resultative, inclusive, experiential and indefinite), pluperfect and future perfect (although, the latter, is only found in certain subordinate clauses). Third, the TA gram is very often employed as a past tense. In this function, the degree of temporal

distance spans from immediacy to high remoteness. In its role as a past tense, the TA locution expresses aspectually perfective actions as well as activities that are durative or imperfective. Although the latter sense especially holds true for adjectival and static roots, the durative value may also be found – but less commonly than the perfective nuance – with dynamic predicates. Fourth, when adjectival and static roots are employed in the TA construction, they typically show the force of a resultative stative present, stative present and simple (non-stative) present tense. As was the case with the concept of taxis (perfect), these three values may also be found with a past temporal reference and – again exclusively in subordinate clauses – in a future time sphere. Fifth, even though the TA gram derived from adjectival roots typically conveys stative or durative senses, dynamic (perfectal and perfective) readings are almost always possible. Sixth, the TA construction may be used with a performative value. Finally, the TA gram is extensively used in conditional protases with a patent modal meaning: it conveys the idea of real factual possibility and also introduces counterfactual – real or unreal – hypothetical situations or events.

The meaning of the TA gram can be comprehended in its totality and all the senses conveyed by this form represented as coherent and non-accidental if one employs the evolutionary scenario of a resultative path as a mapping template. To be exact, all the components of the semantic potential of the TA locution can be cognitively connected by employing two principal sub-trajectories of the resultative path, i.e. the anterior and simultaneous clines. In addition, the modal values offered by the TA form can be networked by means of a modal contamination path along which the evolving resultative gram – or more specifically, the anterior-cline and simultaneous-cline formation – has also been travelling.

All the indicative senses, detected in section 3.1.1.2, may be interrelated and viewed as rational components of a coherent whole if one applies the chaining procedure based upon the resultative path and its two main sub-clines. To be exact, the senses of a resultative proper, present perfect (inclusive, resultative, experiential and indefinite) and definite past of any remoteness (from recent and hodiernal to general and remote) as well as characterised by perfective or non-perfective aspectual colouring, all cover the stages located on the evolutionary scenario labelled as an anterior path (cf. section 1.2.3.2). As the TA gram offers all these values, it spans the entire length of the anterior path, i.e. from the original phase of a resultative proper to the phase of a non-perfective remote past. Within this kinetic map, the sections corresponding to the resultative proper, present perfect and perfective past tense are the most prototypical, even though the remaining sphere (the stage of a non-perfective past) is by no means infrequent. One should also observe that the anterior path enables us to accommodate not only the perfectal, perfective and past senses, but also gives us the opportunity to account for the performative value, which is one of the typical meaning extensions available on the anterior trajectory. In this manner, the performative value provided sometimes by the TA form appears to be consistent with the other components of the semantic potential of the gram – all of them belong to the domains located along the anterior cline. The kinetic network of the semantic potential of the TA gram related to the senses available on the anterior path can be geometrically represented in the following manner:

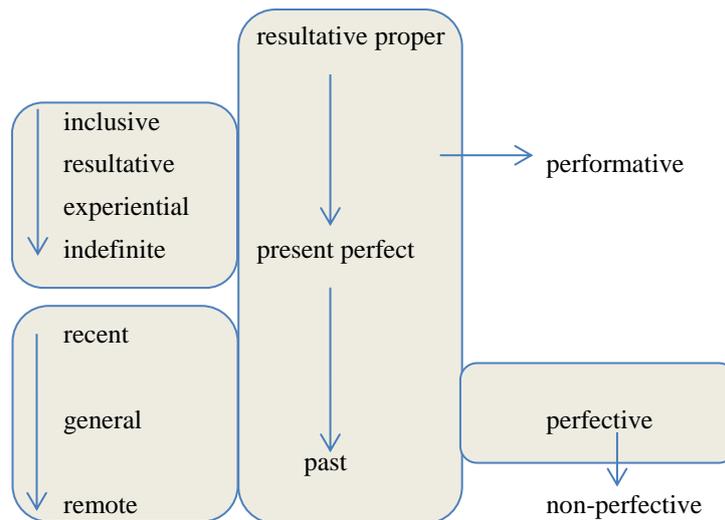


Figure 3.1: The map of the TA gram – senses belonging to the anterior-path<sup>143</sup>

On its own, the anterior cline cannot coordinate and explain all indicative constituents of the semantic potential of the TA gram. Another evolutionary template, namely the simultaneous cline, is necessitated. By applying this chaining mechanism, the senses of a resultative stative, a stative present and a non-stative (durative or simple) present can be networked and accounted for. Once more, since the TA form provides all these three values, it spans the entire length of the trajectory. Among the meanings located on the simultaneous cline, the stative value is by far the most prototypical (cf. Figure 3.2, below). One should note that the simultaneous cline is restricted to static and adjectival roots, while the anterior cline is regular for dynamic verbs. Nevertheless, since static and adjectival predicates can offer dynamic interpretation in terms of a present perfect or a perfective past, they also seem to travel the anterior cline.

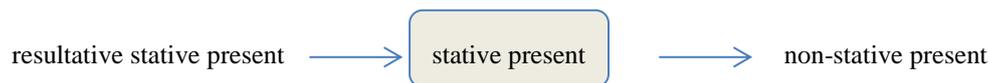


Figure 3.2: The map of the TA gram – senses belonging to the simultaneous-path

The pluperfect value offered by all the predicates, as well as a past durative sense conveyed by static and adjectival verbs, can be chained by using the same templates, i.e. the anterior and simultaneous clines, respectively, located in a past time frame. Similarly, the future perfect and the future stative uses can be mapped – and related to the remaining components of the semantic network of the TA form – by means of the anterior and simultaneous clines located in a future time frame. As a result, the two mapping templates applied to the three temporal spheres account for all the indicative senses offered by the TA gram. In this manner, all of them can be viewed as cognitively related (both diachronically and conceptually)

<sup>143</sup> The stages to the left correspond to more fine-grained sub-stages of the perfect (inclusive, resultative, experiential and indefinite) and definite past (recent, general and remote). The stages to the right represent an extension towards a performative function and an optional development from a perfective past to a non-perfective past that may occur once the gram is used as a definite past.

constituting regular meaning extensions that have arisen from the historical input, a resultative proper construction – the centre of the map.

Additionally, the modal senses conveyed by the TA form can be networked by means of the modal contamination path that represents the process of modalisation of the resultative input – which otherwise evolves along the resultative path – imposed by the modal context of conditional protases. In other words, from a diachronic perfective, this path indicates that in explicitly modal environments, temporal and aspectual readings of the formation – which follows the resultative path, acquiring consecutive stages on the anterior and simultaneous clines – have been reanalysed differently, i.e. in agreement with the modal context and the development specific to it. Since the TA form can be used as a present and/or a present perfect (i.e. a form of a present temporal frame), in a modal context, it is reinterpreted as a real factual modality – it indicates possible and likely events. However, since the TA gram can also be used in a past temporal sphere – both as a past tense and a pluperfect – it can be understood in conditional protases in terms of counterfactuality. As mentioned in section 3.3.2.1, if the event portrayed in the protasis refers to the present and concerns a state of affairs that is possible, although unlikely, to be changed, the counterfactual nuance is real (*Nij naata* ‘If he came’). If the event refers to the past and concerns a state of affairs that is impossible to be altered, the counterfactual value is unreal (*Nij naata* ‘If he had come’). One may argue that in conformity with a diachronic principle explained in section 1.2.3.5, the simple past sense of the TA gram has been reinterpreted as real counterfactuality in conditional protases, while the value of a pluperfect has been reanalysed as unreal counterfactuality. It should be emphasised that the modal readings of the TA form are restricted to explicitly modal environments, i.e. to conditional protases. Inversely, the modal value is never found in contexts that are not overtly marked for modality. On the other hand, however, in such modal contexts of conditional protases, the TA form has been fully modalised and the sense of factual or counterfactual modality is therefore the most prototypical. Non-modal readings in the protases are exceptional. All of this implies that the process of modal contamination is still in its intermediate stage, where the gram, which is otherwise typically employed as an indicative, offers a stabilised modal force in a context clearly marked for modality. As a result, the modal values of the TA gram can be modelled by means of the modal contamination cline in the following way:

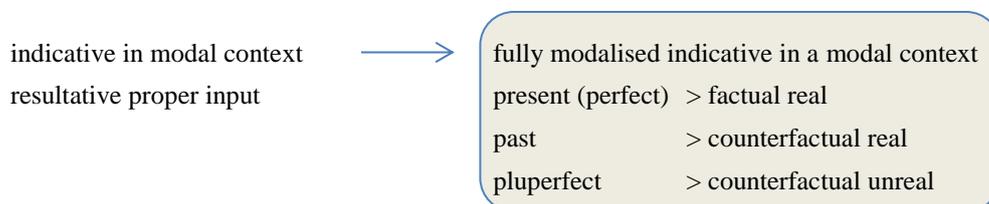


Figure 3.3: The map of the TA gram – modal senses<sup>144</sup>

Consequently, the TA form can be synchronically defined as spanning the entire length of the resultative paths and covering the two initial sections of the modal contamination path. The

<sup>144</sup> The uses corresponding to the first stage are extremely rare. In section 6.4, in a global comparison of grams developing along modal contamination path, they will be ignored.

peaks of prototypicality are located in the initial, the intermediate and the more advanced sections of the anterior cline (i.e. the stages of a resultative proper, present perfect, indefinite perfect and perfective past), in the middle zone of a simultaneous cline (the stage of a stative present) and in the second stage of a modal contamination cline (the stage of a fully modalised indicative in an explicit modal environment). This means that the TA form can dynamically be classified as a resultative-path gram in an intermediate (or semi-advanced) stage of its evolution. It conveys all the senses typical of the anterior and simultaneous clines, including those that reflect the most original and the most advanced sections of the two paths. The most prototypical values are located in the initial (resultative proper), the intermediate (perfect) and, sometimes, the more advanced zones of the two paths (especially the perfective past but also the non-perfective past; see further below in this section), as well as in the central sphere of the modal contamination track. A close relation of the static roots with stativity and, thus, the importance of the simultaneous cline, the use in the performative function and acceptability in a future time frame, all demonstrate – from a dynamic perspective – a relatively intermediate grammatical age of the TA formation. However, even though the TA form has retained various senses that correspond to the more initial sections of the resultative path, it is also well-advanced on this cline, as the value of a past tense is one of the most prototypical. As will be shown in section 3.6, the TA form is the most advanced resultative-path gram of an intransitive type in Basse Mandinka.

The holistic map where the three above-mentioned evolutionary scenarios and networking templates are coordinated and where all the zones of prototypicality are specified can schematically be represented in the following manner:

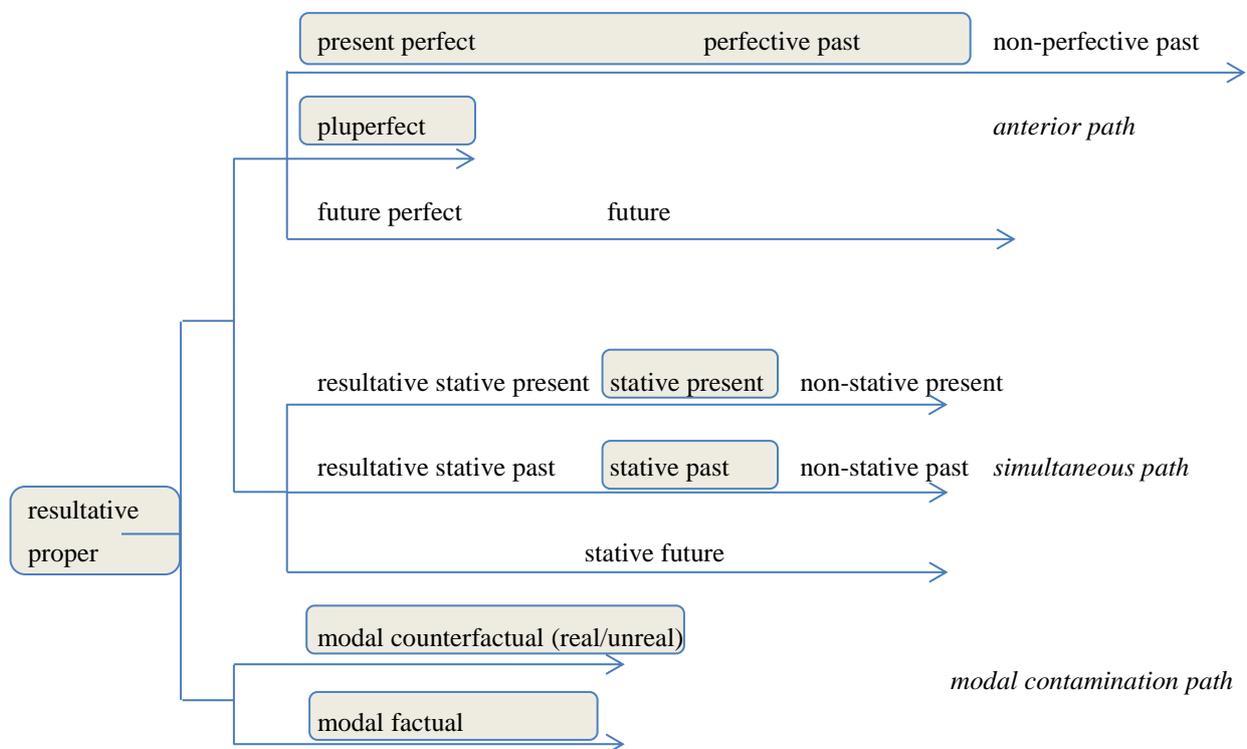


Figure 3.4: The kinetic map of the semantic potential of the TA gram

The all-inclusive map designed above can be given a more linear shape, which is more suitable for the wave representation necessary in the stream model that will be formulated at the end of this chapter. In this approximation, the analysis must be restricted to the anterior and simultaneous paths and, thus, the modal contamination path will be omitted (regarding the stream model of the modal-contamination grams see section 6.3). For the sake of clarity, the anterior and the simultaneous paths must also be narrowed to the evolution within a present time frame. Additionally, the various shades of meaning of the taxis domain (the inclusive, the resultative, the experiential and the indefinite perfect) have been grouped under a single value-stage, viz. the perfect. Likewise, the two highly similar senses of the resultative proper and the resultative stative are treated as one stage, viz. the resultative. One should note that if the sense of a durative past is not restricted to the anterior cline, but also reflects the same value, acquired nevertheless by following the simultaneous path in a past time frame, the nuance of a non-perfective past can be viewed as one of the prototypicality zones. However, if the path to the right reflects only the anterior cline in a present time frame, the non-perfective past value would not be prototypical.<sup>145</sup>

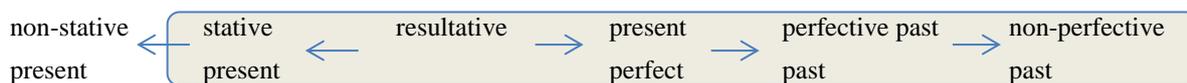
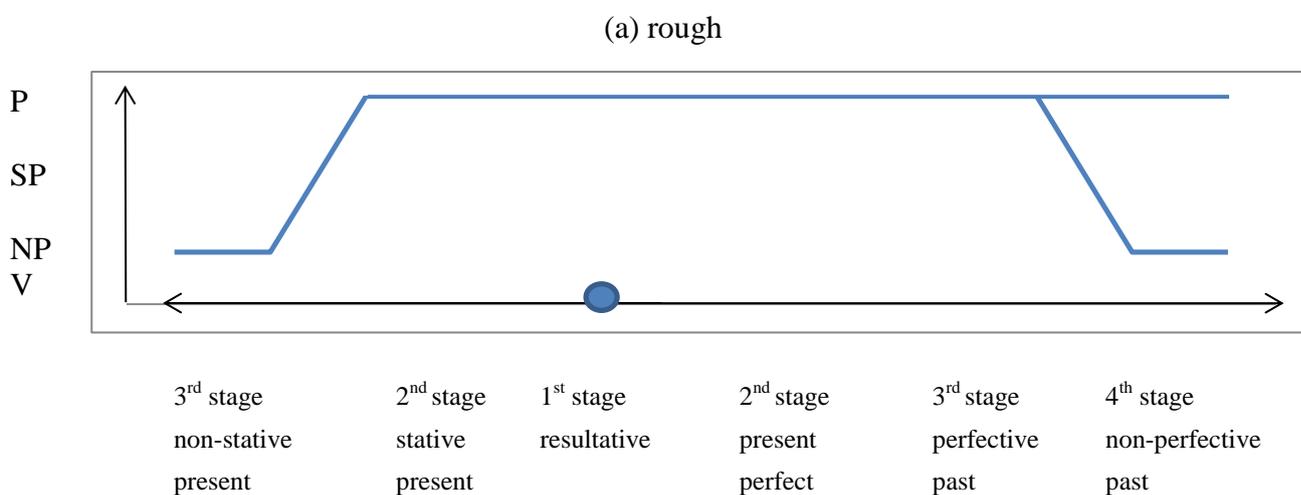


Figure 3.5: Linear model of the semantic space of the TA gram

Accordingly, the representation formulated above can be re-shaped into a bi-dimensional wave model:



<sup>145</sup> These two possible interpretations are indicated by two lines placed in the stage of a non-perfective past in Figure 3.6.

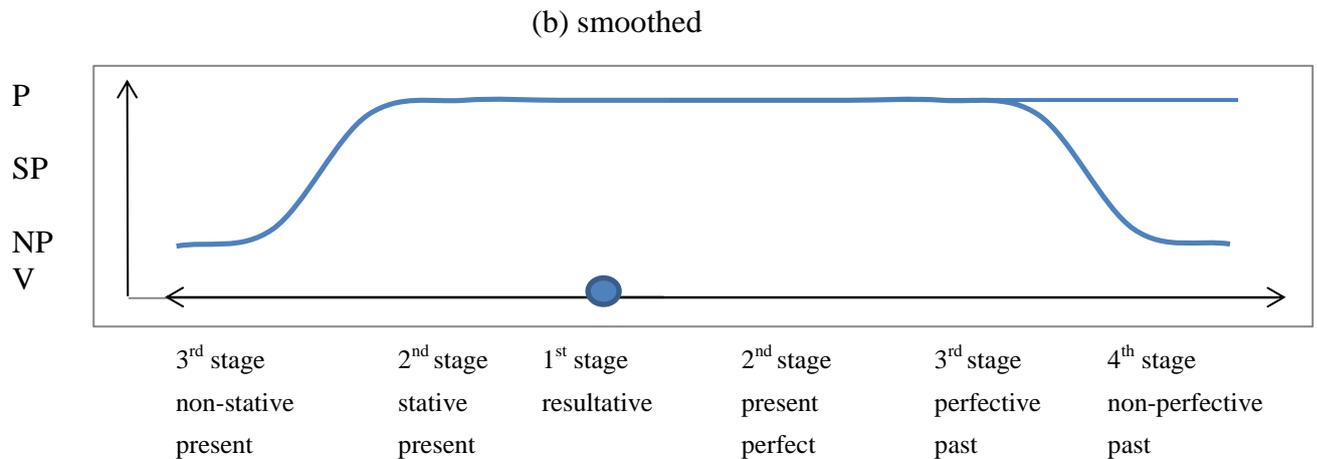


Figure 3.6: Wave model of the semantic space of the TA gram<sup>146</sup>

It is important to note that the TA gram is the only verbal formation that is derived, in Basse Mandinka, by a means of the suffixation of a bound morpheme. This suffixed entity, i.e. *-ta*, cannot be used as an independent free-standing word but is always hosted by a verbal base as a part of the TA construction. This also implies that the structure of the gram is not transparent, such that it is very difficult to relate the form of the TA locution to its meaning, which has been defined in terms of a resultative-path map. In other words, the formal properties of the TA gram do not enable us to relate this construction (in a straightforward way that would be recoverable synchronically) to the resultative input from which it must have developed. Nevertheless, the very lack of transparency exhibited by the TA form and its means of derivation (i.e. through suffixation) suggest an old grammatical age (grammatical maturity), fully consistent with the advancement on the resultative cline.

Some light on the origin of the TA gram may be shed by a nominal/adjectival formation derived by means of the suffix *-ta* (in the definite *-too*) which is homophonous with the *-ta* morpheme in the TA construction. In Basse Mandinka, one finds a few forms in *-ta* that have an adjectival meaning, for example *saasaata* ‘ill’, *kuuranta* ‘sick’ or *ñaaamata* ‘crazy’ derived from verbal-adjectival bases *saasaa* ‘be ill’, *kuuray* ‘be sick’ and *ñaaama* ‘be crazy’, respectively. Most commonly, these forms are substantivised and used as nouns: *saasaatoo* ‘an ill one’ or *kuurantoo* ‘a sick one’. Although in the above-mentioned cases the *-ta* formations are derived from adjectival roots, it is also possible to detect (infrequent) cases where the underlying base is a de-transitive variety of a transitive verb: *a barama* ‘harm’ – *baramata* ‘harmed’, *a danka* ‘condemn’ – *dankata* ‘damned’. In such instances, the nominal *-ta* forms behaves as if, in a way, they were intransitive and/or de-transitive. They never codify an active transitive value, such as ‘the one who harms, a harming one’ but only the intransitive or de-transitive one, namely ‘the one who is harmed, a harmed one’. This

<sup>146</sup> The circle that is placed in the stage of a resultative refers to the conceptual and diachronic centre of the map from which other senses have gradually emerged in two directions.

behaviour (which is also observable in the TA gram itself) is typical of resultative participles, which regularly offer non-agentive intransitive and/or de-transitive (patientive) values (Haspelmath 1994:159 and Nedjalkov 2001:928). Accordingly, the nominal *-ta* formation – which seems to be a closed group of adjectives or nouns, usually derived from bases that express defects or negative properties (Andrason 2013f:70) – may constitute a vestige of an original class of resultative participles, which in turn are one of the most common sources of resultative proper constructions and, thus, grams evolving along the resultative path.

In this context, one should note that in Bambara the equivalent of the Basse Mandinka nominal/adjectival form in *-ta* is the so-called *-ta* participle. Just like in Basse, this formation is principally used as an adjective or noun, and only infrequently appears in an appositive function (Dumestre 1987:226, Vydrin 1999a:86). The *-ta* participle is defined as “débitatif”, i.e. as a form that expresses qualities rather than states. It typically denotes the idea of capacity or potentiality (*fén mɪntá* ‘drink, i.e. something to drink’) or the nuance of predestination (*gèleyá nàtáw* ‘difficulties to come’; Vydrin 1999a:87). In harmony with the situation in Basse, the Bambara *-ta* form is infrequent (Dumestre 1987:228-229).<sup>147</sup>

If there is a historical connection between the TA gram and the noun/adjectives in *-ta*, the TA construction could have descended from a periphrasis in which the subject stood together with a resultative participle in a predicative position without any linking copula or locative element – such as the non-verbal predicator *be/te* – or with a locative copula that has, however, been lost. Consequently, the original expression would be a parallel to the RII gram of Basse Mandinka, a predicative construction comprising a subject, a non-verbal predicator (typological equivalent of copulas and/or locative entities) and a resultative participle in *-riŋ* (cf. section 3.4). Although in Basse Mandinka, the RII gram links the resultative participle to the subject by means of the non-verbal locative predicator *be* (i.e. subject + *be* + *-riŋ*), in some languages an equivalent construction can be formed by a mere juxtaposition of the subject and the participle (i.e. subject + *-riŋ*; see section 3.4.2).

The relation between the TA gram and the adjectives in *-ta* observable nowadays in Basse Mandinka would be analogous to the situation commonly found crosslinguistically, for example in Biblical Hebrew. In Proto-Semitic, and the oldest Semitic languages (e.g. Akkadian), the resultative participle *qatal-* was used to form a periphrastic resultative proper (intransitive and de-transitive) construction. In Hebrew (and in many other languages of the Semitic family), this construction evolved into the perfect/perfective/past *qatal(a)* gram. However, it was also preserved as an independent form in a few instances and exclusively as an adjective with no resultative undertones. Since the original resultative participle was reanalysed as a perfect (this development was typical) or an adjective (this development was limited to a few forms), the Hebrew language developed a new series of resultative participles (cf. Waltke & O’Connor 1990, Kienast 2001, Lipiński 2001, Joosten 2012, Andrason 2013a). This may in fact correspond to the relation between the TA gram, on the

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<sup>147</sup> Observe also that Jeri includes in its verbal repertory a resultative participle in *-ra*, e.g. *sàga-ra* ‘sitting, seated’ which may be used predicatively as in *ní sàgara* ‘they are sitting’ (Tröbs 2013:138). In Jula, the participle in *-tɔ́* functions as a present participle and expresses ongoing and progressive processes (Braconnier 1991:43). One should also note that the verbal form in *-tɔ́* expresses posteriority future or future in the past *á ná-tɔ́* ‘he will come’ (ibid.:29).

one hand, and the participle in *-riŋ*, from which the RID construction (a new wave of the resultative stream) is derived, on the other hand.

In addition, there may be another construction in Basse Mandinka that could be related to the TA gram. Although infrequently (since it is usually limited to adjectival and movement verbs), in Basse Mandinka, one finds a formation in *-too* which is employed in an appositional participial or gerundial function (cf. 3.26.a-c).<sup>148</sup> Creissels & Sambou (2013:133-134) use the term gerund to refer to this construction and suggest a possible etymological relation between it and the locative postposition *to*. One should note that the value of the forms in *-too* seems to be simultaneous rather than resultative in contrast to various cases in which the *-riŋ* participle is used (cf. section 3.4). This phenomenon is the most visible with intransitive verbs of motion and intransitive activity verbs (cf. examples 3.26.a-c, below). However, the compatibility of the gerund in *-too* with an ongoing sense can in fact be viewed as consistent with the values offered by the resultative participle in *-riŋ*. To be exact, as will be demonstrated in section 3.4, apart from typical uses with a resultative proper (typical of de-transitive verbs) and a stative sense (characteristic of adjectival roots), the RID gram may also be employed in order to express ongoing activities (usually found with movement and intransitive activity predicates, e.g. *tamaariŋ* ‘travelling’).

- (3.26) a. A     **tariyaatoo**   taata   saatewo     to  
           he   hurrying   went   town       to  
           ‘He went, hurrying up, to the town’
- b. Kewo **kamfaatoo**   ko     a     ye     ko...  
           man   angry       said   him   to     that...  
           Angry, the man said to him that...
- c. Moo   jamaa   le     ye     ì     **taatoo**     je  
           men   many   EMP   did   them   gone       see  
           ‘Many men saw them leaving/having left’

As was the case with the *-ta* adjective/nouns, the gerund in *-too* has its equivalent in the Bambara *-to* form. This cognate formation is defined as a participle (Dumestre 1987, Bergelson 1990, Vydrin 1999a) and can appear in predicative and attributive (or more correctly appositional) functions (Dumestre 1987:226, Vydrin 1999a:86), usually offering the value of ongoingness (“la valeur processuelle” and “la valeur actuelle”; Idiatov 2000:38-39). In fact, Vydrin classifies this formation as “incomplétif” that expresses “état momentané, synchronisé avec un point de référence” (Vydrin 1999a:87). Although the participle in *-to* can also denote constant or permanent states, this occurs with forms derived from nominal bases (ibid.).

One could again object that the TA gram and possibly a resultative participle from which it derives, on the one hand, and the *-ta* adjective and *-too* gerund, on the other hand, have incompatible meanings: the former indicate resulting states and have been generalised as expressions of a perfect, a perfective and a past tense (TA gram), while the latter are used

<sup>148</sup> It seems that the *-riŋ* participle appears in this function more commonly (on the RID gram and the *-riŋ* participle, see section 3.4).

as adjectives (*-ta* adjectives) and may even exhibit the sense of ongoingness (*-too* gerund). The evolutionary compatibility between resultative participles and adjectives was already mentioned above by means of the analogy of Semitic languages. A dynamic connection between resultative participles and ongoing (imperfective) participles is also typologically widespread. This means that the behaviour of the TA gram, *-ta* adjectives and *-too* gerund, exhibited in Basse Mandinka (and Bambara), does not need to constitute a real problem for the possibility of a participial resultative origin of the TA formation. In general terms, original resultative forms can develop more simultaneous nuances and ultimately evolve into adjectives or categories with a primary sense of ongoingness, apart from being generalised as resultative, perfectal or perfective participles and, if used predicatively, as perfects and perfectives. As explained above, this may be observed in the RII gram (and the *-riij* participle from which this construction is derived), which besides functioning as a typical resultative may also offer uses where it displays a value of ongoingness (*a be taamarij* ‘he is travelling’ and *a be siinoorij* ‘he is sleeping’). Probably, this schizoid nature of resultative participles may be illustrated in the best way by the history of the *\*-no-/-to-* participles (or verbal adjectives) in Indo-European languages. On the one hand, these formations developed resultative and, later, perfectal values and were used in periphrases that posteriorly evolved into perfects, perfectives and past tenses. On the other hand, they also acquired stative, adjectival and ongoing-imperfective values, being sometimes able to be used as present tenses (Meillet 1958:236, Beekes 1995, Tichy 1998:86, Krahe 1994:252, Drinka 2003:107, Sihler 1995:621, Szemerényi 1999:323). This divergence roughly corresponds to the split between the anterior and the simultaneous cline, commonly observed during the grammatical life of resultative proper constructions. I will explain this in more detail.

The Proto-Indo-European (PIE) *\*-no-* verbal adjective is used as a genuine adjective in Greek (*δεινός* ‘terrible’), Sanskrit (*pūr-ṇáh* ‘full’), Old Church Slavonic (*plъnъ* ‘full’; see also Polish *ładny* ‘beautiful’; in fact, Polish exhibits a series of adjectives in *-n-*), Latin (*plenus* ‘full’), Gothic *fulls* ‘full’ (< *\*fulla-* < *\*ful-na-*) and Tocharian (*yäkweññe* ‘pertaining to horses’ or *läksaññe* ‘pertaining to fishes; Krause & Thomas 1960 and Krause 1952; see Meillet 1958:224, Hewson & Bubenik 1997). As a participle, it can have two uses. In most cases, it is employed as a resultative, a perfectal or a past (passive) participle, for instance in Sanskrit (*tīr-ṇá-ḥ* ‘gone’ or *bhin-ṇá-ḥ* ‘cut’), in Slavic languages (e.g. in Old Church Slavonic *bъranъ* ‘taken’ or *vlъč-enъ* ‘carried’, in Macedonian *dojden* ‘come’, or in Polish *napisany* ‘written’; cf. Bartula 2002:96, Hewson & Bubenik 1997:98-99, Długosz-Kurczabowa & Dubisz 2003:320-321, Knjazev 1988:343, Rosenkranz 1955:130) and in Germanic languages (for instance in Gothic *budans*, Old Saxon *gi-bodan*, Proto-Nordic *bodanaR*, and Old Icelandic *boðinn* ‘invited, offered’; cf. Benveniste 1948:167-168, Bammesberger 1986:101-103, 161, Szemerényi 1999:323, Drinka 2003:107). Sometimes, however, it can be used with a durative, imperfective and ongoing value (see for instance the participle *pisany* ‘being written’ in Polish; cf. further below in this section).

The successors of the form in *\*-to-* exhibit a similar behaviour, yielding either adjectives or participles (mostly resultative-perfectal participle but also imperfective participle). As an adjective, the PIE *\*-to-* formation can be found in Greek *adiectiva deverbalia* in *-τός* with an atemporal value: *γνωτός* ‘known’ (Jurewicz, Winniczuk &

Żuławska 1992:238). As a participle, it is extensively used in Vedic (cf. the perfect participle *data*, *-tta* ‘given’, *uktá* ‘spoken’, *gatá* ‘gone’, *bhūtá* ‘been’ and *patitá* ‘fallen’; Whitney 2003:340, Macdonell 2000:183, 329 and Geiger 1909:78-79), in Latin (cf. *participium perfecti* in *-tus*: *amatus* ‘loved’, *datus* ‘given’, *lectus* ‘read’ and *auditus* ‘heard’; Hewson & Bubenik 1997:198), in Slavic (cf. resultative, perfect or retrospective participles in *-tь*, such as Old Church Slavonic *krytь* ‘covered’ or Polish *umyty* ‘washed up’; Bartula 2002:96, Hewson & Bubenik 1997:98-99, Długosz-Kurczabowa & Dubisz 2003:320-321, Knjazev 1988:343, Rosenkranz 1955:130) and in Germanic (cf. the resultative or perfect participle of weak verbs, such as Gothic *domiþs*, Proto-Nordic *dōmidaR* and Old Icelandic *dæmðr* ‘judged’; Bammesberger 1986:101-103).

Polish provides an especially interesting case. The same gram – i.e. the resultative participle in *-n* – delivers two distinct formations: an impersonal perfect and past construction (*pisano* ‘one has been writing, wrote, used to write’) and, as a part of a periphrasis with the verb *być* ‘be’, an imperfective ongoing present (*jest pisany* ‘[it] is being written’) or a gerund (*pogwał pędzony wiatrem* ‘he left, as if (being) pushed by wind’). In the latter uses, any resultative and stative connotations have been lost – nowadays, these locutions function as a dynamic present tense and as a participle with the sense of ongoingness, respectively (Maslov 1988:79, Andrason 2014a; one should also note the use of *-n* formations as adjectives, e.g. *ładny* ‘beautiful’, mentioned previously). The typological similarity with the TA gram, the *-ta* adjectives and the *-too* gerund is unmistakable.

Consequently, from a typological perspective, the origin of the TA gram as a participial resultative proper formation seems to be plausible. Its relation with certain types of adjectives and participles appears to be unproblematic if not, in fact, expected.<sup>149</sup>

Comparative Mande linguistics hypothesises a different origin of the verbal suffix corresponding to *-ta* in (Basse) Mandinka and related languages. It has been proposed that this morpheme (appearing in different languages as *-da*, *-ra* and *-la*) comes from proto-Western-Mande *\*da* (Babaev 2011:20) and derives from a locative noun *\*da* ‘place’ that could follow a topicalised indirect object phrase (Creissels 1997a and 1997b, Babaev 2011:19). This could provide an explanation for the use of the morpheme *da* and its variants not as a post-verbal suffix but rather as a post-subject marker (e.g. Soninke and Kpelle; Babaev 2011; see section 3.2.2) This origin would also explain the use of the predicator *tá/tà* in a preverbal position in transitive constructions in Kagoro (*àlú tá mìsì fàyà* ‘they have killed a cow’; Creissels 1986:12), an equivalent use of the morpheme *dí* in Kita Maninka (*Sékù dí mìsì sà̀n* ‘Sékù bought the cow’ (Keïta 1984:55)<sup>150</sup> and the use of the marker *ré/ré* (also *dé*) in Lele (*Kàa ré kánbirindèe cín* ‘The snake bite the young man’; Vydrin 2009b:43).<sup>151</sup> It could also account for a relatively widespread similarity between associative postpositions and

<sup>149</sup> Certainly, more diachronic research is necessary to verify this hypothesis. It is important to note that phonetic evidence does not support this reconstruction. It seems that there is no etymological connection between the *-ta* morpheme in the TA gram and the *-ta* or *-too* adjectives/gerunds. In Bambara, the former appears as *-ra*, *-la* and *-na*, while the latter forms appear as *-ta* and *-to*.

<sup>150</sup> In these two languages, an identical or very similar dental morpheme is used both in transitive constructions (cf. examples quoted above) and (as in most dialects of Manding) as a suffix in intransitive constructions (e.g. *mùsú bòyidà* ‘The woman fell down’ in Kita Maninka; Keïta 1984:55).

<sup>151</sup> In intransitive constructions, the suffix *-ra* (also *-da*, *-la* or *-ta*) is employed (Vydrin 2009b:42).

predicative markers for perfective and past grams in Manding and Mande (Kastenholz 2003:45-46). A participial origin of this type of construction is unlikely.

While this reconstruction may be true of the post-subject uses of the elements *-da/ta/ra/la*, where the participial source of the morphemes is simply impossible, this explanation also encounters some difficulties, especially as far as the verbal suffix is concerned. To be exact, the posited periphrasis [subject + verb (verbal base) + (locative) postposition] seems to be a rather implausible source of resultative or completive expressions. Bybee, Perkins & Pagliuca (1994:58, 65) do not mention such an input of resultatives or completives in their review. In my own crosslinguistic database that includes more than 200 resultative-path constructions from more than 60 different languages no examples of this kind are found. Locative expressions are typically used to derive imperfective-path grams (cf. chapter 2).

Of course, locative and postpositional origin can be possible and, even, plausible. However to be so, the element that nowadays appears as a part of the TA gram should originally have been a resultative participle or verbal adjective with a resultative sense. Accordingly, if this is true, the TA formation would have emerged from an original periphrasis [subject + participle + locative *\*da*], which is a common source of resultative-path grams. However, the reconstruction of this original participle would be impossible, as no traces of it are currently available in the TA gram, its form being identical to the verbal base. In fact, since the TA formation is an old gram, its morphological and phonological reduction is expected to be profound, similar to the situation found in the simple past of weak verbs in English.

From a synchronic perspective, in English, the weak simple past is marked by the suffix *-ed* (pronounced [t] or [(i)d]) added to the verbal base/infinitive. The origin of this form is analytical, and goes to the periphrasis built from a verbal noun and auxiliary verb, e.g. *\*solpá d<sup>h</sup>éd<sup>h</sup>ōm* (Lühr 1984). The first element (such as *solpá*) is a verbal noun in an instrumental function (Lühr 1984:43-44). The second part of the periphrasis is a successor of the PIE root Aorist *\*dē-* < *\*d<sup>h</sup>eh<sub>1</sub>-* and/or (in the plural) of the reduplicated Imperfect/Injunctive *\*dēḏō-* / *\*dēḏ-* < *\*d<sup>h</sup>e-d<sup>h</sup>oh<sub>1</sub>-* / *\*d<sup>h</sup>e-d<sup>h</sup>h<sub>1</sub>-* (cf. the PIE present *\*d<sup>h</sup>é-d<sup>h</sup>oh<sub>1</sub>-mi*, *\*d<sup>h</sup>e-d<sup>h</sup>h<sub>1</sub>-més*; Grimm 1819-1837, Scherer 1868, Kluge 1879, Loewe 1894, von Friesen 1925, Sverdrup 1929, Krahe 1963, Tops 1974, Lühr 1984, Bammersberger 1986, Ringe 2008). As, in Modern English, the auxiliary verb has been reduced to a suffix (even a single consonant), the access to the original verbal noun has entirely been lost and the underlying form is nowadays identified with a verbal base or an infinitive. An analogous process might have taken place in the history of the TA gram if it was derived from a periphrasis composed of a resultative participle and a postpositional locative element, as hypothesised in the previous paragraph.

At this stage of research, I am unable to definitively specify a lexically transparent input from which the TA gram has emerged. Nevertheless, two hypotheses (namely, a resultative participle cognate to *-ta* adjectives and/or *-too* gerunds or a periphrasis composed of a resultative participle and a locative *\*da*) are consistent with the proposed mapping.

The study of the TA gram may be completed with the observation that the behaviour of cognate formations in related languages harmonises with the semantic potential of the TA

form and its dynamic definition formulated above. It should be noted that cognates of the TA gram are found in dialects of Manding and in various Mande languages. In Manding it appears in all variants except Maukakan (*ye*) and Manyá (*ká*; Tröbs 2009:222-223). To be exact, it is found in Bambara (see below), Maninka (Friedländer 1992), Jula (Sangaré 1984), Worodugukan, Korokan, Bolon, Mɛɛka, (Tröbs 2009:222), Kita Maninka (Keita 1984), Maninka of Niokolo (Creissels 2013b), Kagoro and Xasonka (Tröbs 2009:223). In Mande, it is present in Vai (Heydorn 1971, Kastenholz 2003), Lele (Vydrin 2009b), Jeri (Tröbs 1998, Vydrin 1999b), etc. Depending on the language (and/or the type of root), the suffix appears under the shape of *-da*, *-ra*, *-na*, and *-la*.<sup>152</sup> These forms regularly express the idea of a perfect, a perfective and/or a past.<sup>153</sup> With certain non-dynamic predicates, the sense is similar to a stative present. An example of such behaviour is offered by Bambara.<sup>154</sup>

In Bambara, an equivalent – and genetically related – form is derived by means of the suffix *-ra*, appearing also as *-na* or *-la*. This gram conveys all the values that are characteristic of the TA form in Basse Mandinka: it functions as a resultative proper, as a resultative perfect, a frequentative perfect and an experiential perfect, as a stative and as a perfective past or a non-perfective (durative) past. This construction is also used with the force of a pluperfect and, in temporal subordinate clauses, a future perfect. Additionally, it appears in a performative function and in conditional protases where it conveys real factual and real/unreal counterfactual values (for detail, see Idiatov 2000:25-35, 49-55 and Dumestre 2003). From the system's perspective, the gram is defined as a perfect and/or perfective (*parfait* or *accompli*; see Idiatov 2000, Vydrin 2000 and Dumestre 1981, 1999, 2003). Similar classifications have been proposed by Houis (1981) and Blecke (1988/2004), who view the form as a past tense, either completive or terminative (cf. Houis 1981) or as a general preterite (Blecke 1988/2004:37-42, 58-61).

To conclude, the meaning of the TA gram offered synchronically and the semantic properties of genetically related formations in other Manding and Mande languages suggest that this construction is a resultative-path gram. Accordingly, and with a great degree of probability, it would have emerged from a resultative or a completive input. However, an exact, lexical, cognitively transparent, historical source of the TA gram cannot currently be determined, as the origin of this formation (and of its cognates) is still debatable.

### 3.2 The YE<sub>1</sub> gram

The YE<sub>1</sub> form – another gram of the resultative-path type – is usually derived by means of the auxiliary element *ye* placed before a verbal base (concerning the subscript <sub>1</sub> in the label see below). The morpheme *ye* regularly appears when the subject is nominal – a substantive or a substantivised adjective – or if the subject is a pronoun of the second and third person of

<sup>152</sup> In South-Western Mande, the suffix appears as *a* with the omission of the consonant *l* which is a common feature of this branch in auxiliary morphemes (cf. Babaev 2011:18; cf. section 2.2.2). In Yalunka, the perfect(ive) (“accompli”) is expressed by the suffix *-qi* (Keita 1989; cf. also Lüpke 2005).

<sup>153</sup> The precise value of a past use does not have to only be perfective, but may also allow for more durative readings: *À kìnɔɔ-ra tèle fɛla koro* ‘He slept for two days’ (Lele in Vydrin 2009b:42-43)

<sup>154</sup> An interesting situation, attested in Manding, is found in Soninke, where two verbal stems, one perfective and the other imperfective, are available (Grégoire 1981:25-27; on Soninke, see also Galtier 1971, Diagona 1994 and Girier 1996).

the singular and plural (27.a). However, in the first person, the most common form is *ηa* (singular) and *ηà* (plural; 27.b) although the predicative marker *ye* can also be found if the pronoun is emphatic (27.c).<sup>155</sup>

- (3.27) a. A    **ye**    faloo            **saŋ**  
           he    YE<sub>1</sub>    donkey            buy  
           ‘He bought a donkey’
- b. **Da**    faloo            **saŋ**  
           I-YE<sub>1</sub>    donkey            buy  
           ‘I bought a donkey’
- c. Nte    **ye**    a            **je**  
           I        YE<sub>1</sub>    it            see  
           ‘I saw it’

The YE<sub>1</sub> formation is always transitive. In this manner, it clearly contrasts with the TA form, which is invariably intransitive or de-transitive (compare the examples in 3.28.a and 3.28.b). The negative variant of the YE<sub>1</sub> gram is formed by substituting the entities *ye*, *ηa* or *ηà* with *maŋ* (3.28.c):

- (3.28) a. A    **ye**    a            **ke**    kunuŋ  
           he    YE<sub>1</sub>    it            do        yesterday  
           ‘He did it yesterday’
- b. A    **keta**            kunuŋ  
           it    be.done-TA    yesterday  
           ‘It was done yesterday’
- c. A    maŋ            a            **ke**    kunuŋ  
           he    MAŊ            it            do        yesterday  
           ‘He did not do it yesterday’

The number <sub>1</sub> written by the label YE makes reference to the following phenomenon: In Basse Mandinka (and in Gambian Mandinka in general) the marker *ye* may also be used to derive another verbal expression (the so-called YE<sub>2</sub> gram), which has completely different semantic properties and which – in contrast to the YE<sub>1</sub> gram analysed in this section – can be both transitive and intransitive, being furthermore negated by employing the morpheme *kana* instead of *maŋ* (for a detailed discussion of the YE<sub>2</sub> formation, see section 6.2). In order to distinguish between the two types of the *ye* constructions, the superscripts <sub>1</sub> (the variety discussed in this section) and <sub>2</sub> (the variety discussed in section 6.2) will be used.

One should note that Basse Mandinka admits three alternative variants of the marker employed for the first person singular or plural in the YE<sub>1</sub> gram. Besides *ηa* – which is identical to the standardised form used in published texts in Gambia – one encounters by-forms such as *na* (very frequent), *ηe*, *ne* and *ñe* (these three latter varieties are relatively

<sup>155</sup> All markers of the YE<sub>1</sub> formation – *ye*, *ηa* or *ηà* – will be glossed as YE<sub>1</sub>. The predicate markers *ηa* and *ηà* will also indicate the person, i.e. I- YE<sub>1</sub> and we-YE<sub>1</sub>, respectively.

seldom found). Since the vernacular used in the capital of the Upper River Division and in its surrounding environs is far from being a uniformly consistent system, it is not surprising that the acceptability of the four mentioned lexemes varies from one speaker to another. While some informants accepted all of them, giving the preference to *na*, others regarded the form *ŋa* as the most accurate – yet being aware of the use of the auxiliary words *na*, *ne*, *ŋe* and *ñe*.

### 3.2.1 Semantic potential

#### 3.2.1.1 Grammatical tradition

As far as (Gambian) Mandinka is concerned, the YE<sub>1</sub> gram has been classified in terms that strongly recall the definitions formulated for the TA form. Macbrair (1842:15) classifies the locution as an aorist tense, proposing that it describes past and present actions as well as states which have been existing from a certain instant in the past to the present day, or more accurately, to the moment which is simultaneous to the main reference time. Thus, according to Macbrair (1842:15-16), the formation can approximate a past tense, a present tense, a perfect and a pluperfect. Hamlyn (1935) classifies the locution as a simple past. Creissels (1983a) and Creissels & Sambou (2013:70-74) define the YE<sub>1</sub> construction as a stative or perfective-completive aspect (“accompli-statif”; or “completive positive (transitive)”; see Creissels 2008:77, 2010a:3, 2010b:3, 2012:3; for a similar view, see Rowlands 1959, Spears 1965 and Long 1971). To be exact, according to Creissels (1983a) and Creissels & Sambou (2013), the YE<sub>1</sub> form is an affirmative transitive expression that may apply to both present and past time spheres, with possible uses as a perfect, a resultative, a stative and a narrative past. It introduces completive actions or ongoing states, being furthermore able to convey the meaning of future eventuality. Gamble (1987:17-18), Colley (1995:9, 12 and 15) and Dramé (2003:47 and 50) define the YE<sub>1</sub> form as equivalent to past and present tenses, while Lück & Henderson (1993) and WEC (2002:14-15) propose that the YE<sub>1</sub> construction is an expression of completed actions or current states, corresponding to the simple past, simple present and perfect tenses of the English language. Kastenholz (2003:43-45) defines the YE<sub>1</sub> form as a perfect/perfective.

#### 3.2.1.2 Evidence from Basse<sup>156</sup>

In Basse Mandinka, the YE<sub>1</sub> construction is extensively used in various perfectal functions. It is commonly found with the force of a resultative present perfect, portraying an already accomplished activity as relevant for the current situation. In other words, the gram introduces a formerly completed action that has a patent effect on the present state of affairs:

- (3.29) a.       A       **ye**       bundaa       **soroŋ** ne  
                   he       YE<sub>1</sub>     door           close FOC  
                   ‘He has closed the door (i.e. The door remains closed)’

<sup>156</sup> The evidence provided in this section draws from my study “The meaning of the *YE* constructions in Basse Mandinka” published in *Philologia* 10 (cf. Andrason 2012g).

- b. **Da** a **domo**  
 I-YE<sub>1</sub> it eat  
 ‘I have eaten (i.e. I am done with the food)’

The YE<sub>1</sub> gram appears with the value of an inclusive perfect, indicating that an activity (or a situation) has been occurring without interruption from a certain – explicitly determined – point of time in the past to the present moment:

- (3.30) **Da** a **loŋ** ne kabiriŋ foloodulaa to  
 I-YE<sub>1</sub> it know FOC since beginning at  
 ‘He has known it from the beginning’

Likewise, the YE<sub>1</sub> locution can be used in the function of an iterative frequentative perfect:

- (3.31) Bii **ŋa** wo **ke** siiŋaa keme  
 today I-YE<sub>1</sub> that do time hundred  
 ‘Today, I have done it one hundred times’

The YE<sub>1</sub> form is commonly employed as an experiential perfect, indicating that the subject has performed a given activity – as a minimum – once during his or her life. As explained in section 1.2.3.2, in this sub-value of a present perfect, the undertone of current relevance remains clearly recognisable, but on the contrary, the sense of resultativity is no longer available:

- (3.32) Fo i **ye** nene sitajiyo **miŋ?**  
 QUES you YE<sub>1</sub> ever baobab.jus drink  
 ‘Have you ever drunk baobab-jus?’

In addition, as far as the taxis domain of a perfect is concerned, the YE<sub>1</sub> gram may be used as an indefinite perfect:<sup>157</sup>

- (3.33) **Da** a **je** marisewo to. A **ye** duuta luulu **saŋ**.  
 I-YE<sub>1</sub> him see market at. he YE<sub>1</sub> mango five buy.  
 ‘I saw him at the market. He bought five mangos.  
 A **ye** ì samba suwo kono  
 he YE<sub>1</sub> them bring home in  
 He brought them home’

<sup>157</sup> Once more, it should be noted that in various cases where the Greek New Testament uses the aorist and perfect in the function of an indefinite past, the YE<sub>1</sub> form is employed (e.g. in Matthew 26.56 *ŋa a fo* for *προεΐρηκα*, John 1:41 *a ye a je* and John 1:45 *ŋà a je* – in these two latter cases, the YE<sub>1</sub> gram is used to render the Greek form *εἰρήκαμεν*).

On some occasions, the YE<sub>1</sub> formation approximates the category of a performative perfect. In this function, the gram is employed in order to perform certain acts rather than to describe a situation or an activity. This usage is restricted to predicates that lend themselves to be used in performative acts, such as exercitive, expositive, commissive, behabitive and verdictive verbs, but especially to verbs of speaking or giving:

- (3.34) a. **Da** n **kali!**  
I-YE<sub>1</sub> REFL swear  
'I swear!'
- b. **Da** i **daani**  
I-YE<sub>1</sub> you pray  
'I beg you'

With a high frequency, the YE<sub>1</sub> gram appears in the function of an explicit definite past tense, expressing immediate (e.g. hodiernal, 3.35.a), recent (e.g. hesternal 3.35.b), general (a person's life time 3.35.c) or remote (e.g. ancient 3.35.d) past events. This means that the activity conveyed by the YE<sub>1</sub> construction may be located in a past temporal frame, whatever its distance from the speaker's present temporal sphere is:

- (3.35) a. **Da** a **ke** bii soomandaa  
I-YE<sub>1</sub> it do today morning  
'I did it today in the morning'
- b. Kunuŋ **ŋa** i **je**  
yesterday I-YE<sub>1</sub> you see  
'I saw you yesterday'
- c. **Da** ñiŋ motoo saŋ sanji luulu kooma  
I-YE<sub>1</sub> this car buy year five ago  
'I bought the car five years ago'
- d. Bituŋ Mansa Sulemani **ye** Banisirayila alifaalu **kumandi**  
then king Solomon YE<sub>1</sub> Israel elders call  
'Then Solomon assembled the elders of Israel' (adapted from WEC 1989)

Functioning as a definite past, the YE<sub>1</sub> gram is frequently employed in order to convey actions that are, aspectually, marked as perfective, being presented as unique, punctiliar and bounded:

- (3.36) a. Seruŋ ate **ye** kewo **faa**  
last.year he YE<sub>1</sub> man kill  
'Last year, he killed a man'
- b. Kunuŋ, **ŋa** sayikuloo **saŋ**  
yesterday I-YE<sub>1</sub> bicycle buy  
'Yesterday, I bought a bicycle'

Nevertheless, the YE<sub>1</sub> construction may also function as an aspectually neutral (simple or non-perfective) past, i.e. as a preterite, being able to introduce activities of a wide temporal length or simply durative:

- (3.37) a.      Kunuŋ            **ŋa**    n        **doŋ**    baake  
                  yesterday    I-YE<sub>1</sub> REFL dance very.much  
                  ‘Yesterday I danced a lot’
- b.      A        niŋ    ì        tarata    jee,    aniŋ    a        **ye**    batiseeroo    **ke**  
                  he        with    them    was        there    and    he        YE<sub>1</sub>    baptising    do  
                  ‘He was there with them, and he was baptising’ (adapted from WEC 1988)

The typical value of a perfectal category, i.e. the taxis concept of anteriority – previously discussed within a present time frame (cf. examples 3.29, 3.30, 3.31 and 3.32) – may also be found in past and future temporal spheres. In the former case, the YE<sub>1</sub> formation approximates a pluperfect (it expresses an action which precedes another clearly past activity; cf. example 3.38.a) while in the latter, available only in certain temporal subordinate clauses (especially those introduced by the conjunction *niŋ*), the gram is employed with the force of a future perfect (it expresses events which will take place before other future situations occur; see example 3.38.b):

- (3.38) a.      Mool    bee    naata,    ko    nte    **ye**    a    **fo**    ì    ye    nuŋ    ñaameŋ  
                  People all    came as I    YE<sub>1</sub>    it    say them for    then    as  
                  ‘All the people came as I had told them’
- b.      Saama            niŋ    i    **ye**    bukoo    **karaŋ**,    i    si    n    kili!  
                  tomorrow        when    you    YE<sub>1</sub>    book    read    you    will    me    call  
                  ‘Tomorrow, when you have read the book, you shall call me!’

In cases where the YE<sub>1</sub> gram is derived from certain verbs of receiving (e.g. *a soto* ‘receive, have’ and *a muta* ‘get’), perceiving (e.g. *a moyi* ‘hear, understand’ and *a loŋ* ‘know’) and feeling (e.g. *a kanu* ‘love’ and *a koŋ* ‘hate, detest’), it may denote three additional types of meaning. Namely, it can function as a resultative stative present (it denotes a present static condition, portraying it as acquired due to a previously performed action),<sup>158</sup> a stative present (especially with static verbs expressing feelings) and a durative present with no evident traces of resultative and stative meanings. These three uses are much less common than the various senses of a present perfect and a past.

- (3.39) a.      **Da**    leetaroo            **muta**  
                  I-YE<sub>1</sub>    letter                receive  
                  ‘I have a letter (because I have received it)’
- b.      Nte    **ye**    i        **kanu**    le

<sup>158</sup> This value is similar to that offered by the resultative perfect although the latter displays a reverse arrangement of the two semantic components: namely, the most relevant segment of the meaning reflects a dynamic event which, due to its results, is in some way related to a present state of affairs.

- I YE<sub>1</sub> you love FOC  
 ‘I love you’  
 c. **Da** wo **loŋ**  
 I-YE<sub>1</sub> that know  
 ‘I know that’

If the context locates the reference time in the past, the meaning of the YE<sub>1</sub> construction, formed from the above mentioned predicates, approximates a durative (or imperfective) past (cf. example 3.40 below). The use within a future time frame is once more restricted to subordinate clauses.

- (3.40) Kunuŋ a **ye** kodoo **soto**  
 yesterday he YE<sub>1</sub> money have  
 ‘He had money yesterday’

However, one should observe that static verbs may also receive a dynamic interpretation, analogous to the sense of a present perfect or a perfective past:

- (3.41) Kabiriŋ **ŋa** leetaroo **muta** n naata suwo kono  
 when I-YE<sub>1</sub> letter receive I went house in  
 ‘When I received the letter, I went home’

In addition to the values described above, which can all be grouped under the label of the indicative, the YE<sub>1</sub> construction may likewise appear in conditional protases where it is introduced by the conjunction *nij* ‘if’. In this environment, the gram regularly offers modal readings. First, the YE<sub>1</sub> form may provide the sense of real factuality, expressing hypothetical but yet possible, future events or situations which – if performed – would logically and temporarily precede actions conveyed by the apodosis.

- (3.42) Niŋ i **ye** motoo **saŋ**, ntelu be taa la Banjun  
 if you YE<sub>1</sub> car buy we NVP go to Banjul  
 ‘If you buy a car, we will go to Banjul’

Second, on various occasions, the YE<sub>1</sub> locution is employed with a real counterfactual force. In this function, it introduces states or activities that are actually possible although unlikely, since contrary to the present situation:

- (3.43) Niŋ ali **ye** wo moolu **kanu**, menna ye ali kani,  
 if you YE<sub>1</sub> that people love who YE<sub>1</sub> you love  
 ‘If you loved people who love you (i.e. you do not love them but you still could),  
 wo be ali nafaa la muŋ ne la?  
 that NVP you benefit to what FOC with

how would that benefit you?’

Third, the YE<sub>1</sub> gram can be found in conditional protases denoting unreal counterfactual activities or situations:

- (3.44)      Nij    ite    **ye**    wo    **ke**,  
               if    you    YE<sub>1</sub>    that    do,  
               ‘If you had done it,  
                   tenuj nte    baarinkewo    te                faa    la    nuj  
                   then   my    brother                NEG.NVP    die    to    then  
                   my brother would not have died’

### 3.2.2 Dynamic map

Before designing a kinetic map of the YE<sub>1</sub> gram, the evidence introduced in the previous section will be recapitulated. The YE<sub>1</sub> construction is commonly used as a present perfect offering resultative, inclusive, experiential and indefinite values. In limited instances, it can function with a performative force. It also introduces definite past actions and activities characterised by any degree of temporal remoteness from the speaker or narrator’s present. Such past events can be immediate, recent, general or remote. The aspectual value of the past uses of the YE<sub>1</sub> locution is usually perfective, although examples of a non-perfective reading are not extremely rare. The taxis sense of anteriority – prototypical of the perfectal functions – may also be found in the past and (albeit only in subordinate clauses) future time frames, yielding pluperfect and future perfect uses. When derived from certain verbs of receiving as well as when formed from sensory roots (verbs of perceiving and feeling), the YE<sub>1</sub> construction functions as a resultative stative present, a stative present or a non-stative present. These three senses can again appear with a past and (in subordinate clauses) a future temporal reference. Lastly, in conditional phrases, the gram regularly introduces real factual activities and counterfactual – both real and unreal – situations or events.

The evidence suggests that the total semantic content of the YE<sub>1</sub> formation almost impeccably parallels the meanings displayed by the TA gram, described in section 3.1. The main distinction between the two forms – given the transitive nature of the YE<sub>1</sub> construction and, hence, its incompatibility with adjectival static verbs – is a lesser frequency of resultative stative and simple present meanings and, in particular, the scarcity of a genuine stative value, offered with a great abundance by adjectival roots in the TA formation. Additionally, due to its invariably transitive and active nature, the YE<sub>1</sub> gram seems to be incompatible with the sense of a resultative proper, which is typically found in intransitive (de-transitive) formations.

Since the qualitative semantic potential of the YE<sub>1</sub> form is almost identical to that offered by the TA gram, the kinetic maps of the two constructions should also be highly similar. This means that the indicative components of the semantic potential of the YE<sub>1</sub> gram can be chained and represented in a coherent way by means of a resultative path. All the indicative senses displayed by this formation can be conceptually and diachronically

networked and related by using the resultative path, with its two principal sub-trajectories (i.e. the anterior and simultaneous clines) as a chaining mechanism. Additionally, the modal senses conveyed by the YE<sub>1</sub> construction can be given an internal organisation by means of a modal contamination path applied to a developing resultative-path gram.

All the indicative senses of the YE<sub>1</sub> gram can be networked by means of two main sub-clines of the resultative path. Namely, the taxis values of a present perfect (including its subtypes such as the inclusive, the resultative, the experiential and the indefinite perfect) as well as the senses of a definite past (be they recent, general or remote, on the one hand, and perfective or non-perfective, on the other) may be chained and represented holistically as stages of the anterior path. Since the YE<sub>1</sub> locution fails to offer the sense of a resultative proper, it may be classified as spanning the entire length of the anterior path with the exception of the initial stage. In other words, the meaning of the gram covers the anterior cline from the phase of an inclusive present perfect to the stage of a non-perfective remote past. The zones of a present perfect and perfective past tense are the most prototypical in the kinetic map of the YE<sub>1</sub> construction, while the non-perfective past area is less prototypical. Once more, the anterior path enables us to accommodate the infrequent performative value and link it to the remaining perfectal-perfective-past senses. The entire dynamic map of the semantic potential of the YE<sub>1</sub> gram that includes the senses available on the anterior path (located itself in a present time frame) is designed in Figure 3.7, below.

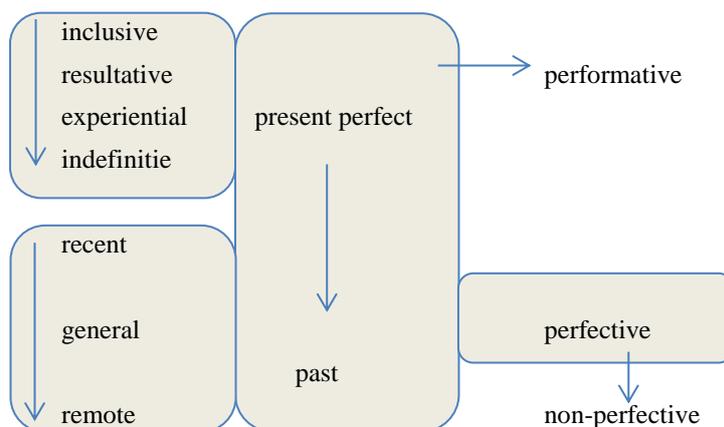


Figure 3.7: The map of the YE<sub>1</sub> gram – senses belonging to the anterior-path

As was the case with the TA formation, the other sub-cline of the resultative path, i.e. the simultaneous cline, enables us to map and explain the senses of a resultative stative, stative present and non-stative present. However, it should be noted that these values have a lesser weight in the semantic potential of YE<sub>1</sub> form than they had in the meaning of the TA gram. As far as the YE<sub>1</sub> construction is concerned, even the stative sense is uncommon and non-prototypical. Once more, one should note that static and sensory verbs – besides being used in the senses located on the simultaneous path – can also offer a dynamic reading in terms of a present perfect or a perfective past, thus following the anterior cline. The mapping of the YE<sub>1</sub> gram based upon the simultaneous cline can be represented as follows:



Figure 3.8: The map of the YE<sub>1</sub> gram – senses belonging to the simultaneous-path

Furthermore, the senses related to the pluperfect and durative past value offered by certain verbs in the YE<sub>1</sub> form can be mapped by using the templates of the anterior and simultaneous clines located in a past time frame. Similarly, the future perfect or stative/non-stative future uses can be networked by employing the anterior and simultaneous clines in a future time frame. Among all these values, only the pluperfect sense is prototypical.

The information provided above implies that the mapping patterns based on the anterior and simultaneous clines account and relate all indicative senses provided by the YE<sub>1</sub> formation. It also indicates that the gram is likely to have developed from a resultative proper source. It is from this diachronic input that the two paths emerged. However, this original sense – if it existed – has been lost, since it is entirely unavailable in the modern Basse Mandinka language.

As far as the modal values of the YE<sub>1</sub> form are concerned, this group of senses can be networked by means of a modal contamination path applied to the original resultative input, itself evolving along the resultative path. Such a chaining procedure stands in harmony with the mapping developed for the TA gram (cf. section 3.1.2). Namely, the modal shades of meaning offered by the YE<sub>1</sub> construction have most likely been developed due to the explicit modal context of conditional protases in which the YE<sub>1</sub> gram has been used. In this environment, the non-past-time YE<sub>1</sub> form (functioning as a present, present perfect or future) has been reinterpreted as an expression of real factual modality. However, in conditional protases, the past-time YE<sub>1</sub> gram has been reanalysed differently. The non-perfective past type of the YE<sub>1</sub> form has given rise to a real counterfactual sense, while the pluperfect type of the YE<sub>1</sub> gram has prompted an unreal counterfactual value. The three types of reanalysis or the three cases of modalisation adjust to the typological rule whereby – if employed in modal contexts – presents and present perfects tend to acquire a real factual character, while pasts and pluperfects usually develop towards counterfactual modality, real or unreal, respectively. It should again be noted that the modal senses of the YE<sub>1</sub> gram are limited to the explicitly modal contexts, viz. the conditional protases. Accordingly, the modal type of the YE<sub>1</sub> form fails to appear in contexts that are not overtly marked for modality. In the modal environment of conditional protases, the YE<sub>1</sub> construction offers modal senses with extreme regularity, whereas non-modal readings are exceptional. This suggests that the process of modal contamination has not concluded yet. Rather, it typically corresponds to its intermediate phase: a form, which usually functions as an indicative, provides a regular modal force in contexts clearly marked for modality. The mapping of the modal block of the semantic potential of the YE<sub>1</sub> form can be designed in the following way:

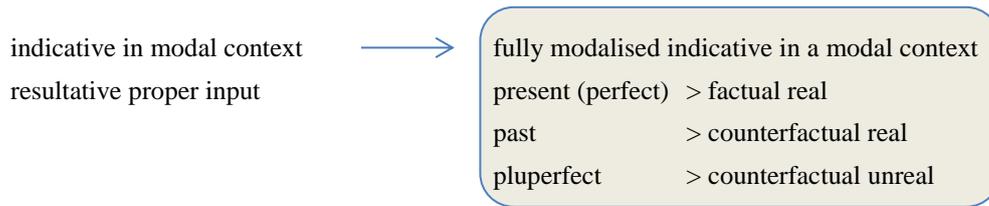


Figure 3.9: The map of the YE<sub>1</sub> gram – modal senses

Consequently, the YE<sub>1</sub> formation may be dynamically classified as a resultative-path gram in an intermediate or relatively advanced stage of its evolution. The gram expresses almost all the senses typical of the anterior and simultaneous clines – with the exception of the resultative proper value – and locates its prototypical zones in central and advanced sections of the anterior cline as well as in the intermediate area of the modal contamination cline. The possibility of the use of static or less dynamic verbs in the functions corresponding to the stages of the simultaneous cline, the infrequent performative usage and the admissibility with a future temporal reference frame, all confirm the definition of the YE<sub>1</sub> formation in terms of an semi-advanced (or, at least, not very old) resultative-path gram. However, certain features indicate that the YE<sub>1</sub> locution has advanced on the cline: the original sense of a resultative proper stage is not available and the meaning of a definite past is one of the most prototypical.

The holistic map, which includes all the three evolutionary scenarios and their prototypicality zones, can be schematically posited in the following manner:

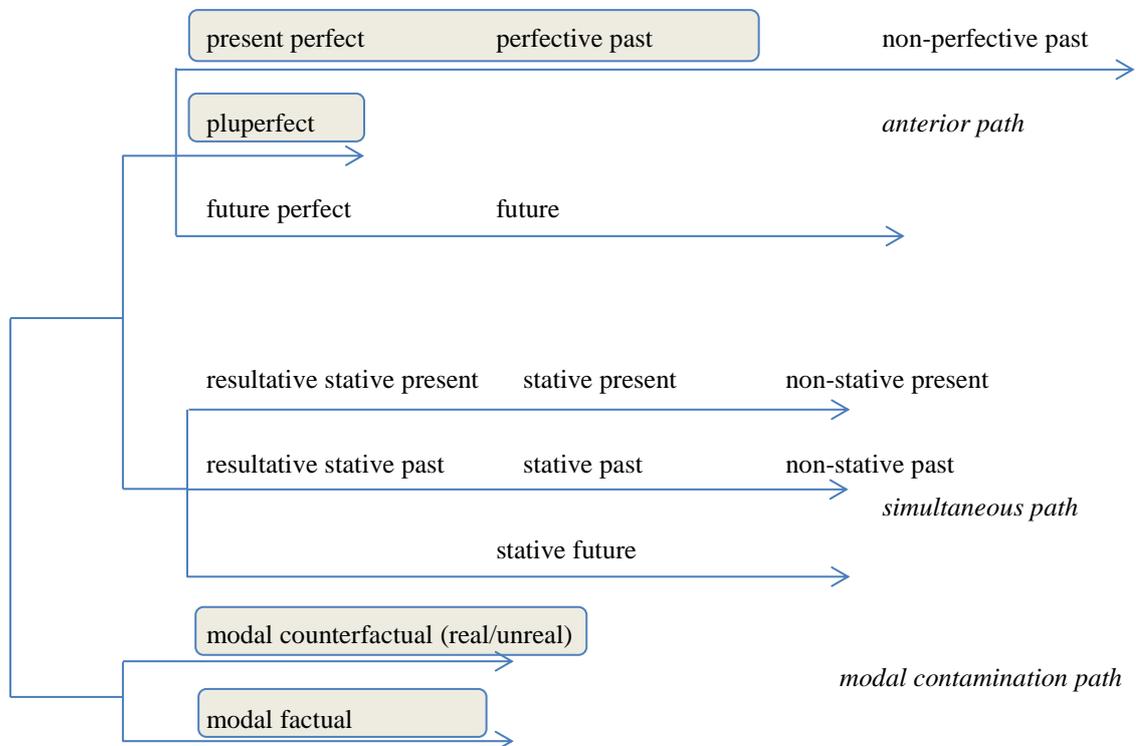


Figure 3.10: The kinetic map of the semantic potential of the YE<sub>1</sub> gram

In order to accommodate the YE<sub>1</sub> form in the stream-representation of all the resultative-path grams of Basse Mandinka, the complex map formulated above must be reformulated into a more linear manner. Once more, one should note that a) the model is limited to the anterior and simultaneous path; b) for the sake of clarity the two paths have been restricted to the development located within a present time frame; and c) some senses have been collapsed into larger categories. If the domain of a non-perfective past includes senses developed along the simultaneous cline located in a past time frame, the non-perfective past value ascends to the degree of semi-prototypicality (see next Figure 3.12).

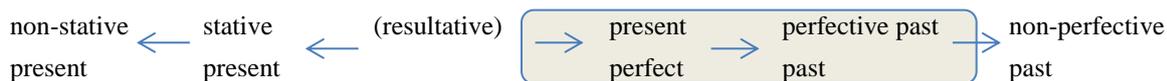


Figure 3.11: Linear model of the semantic space of the YE<sub>1</sub> gram

The above representation can be reshaped into the following bi-dimensional wave model:

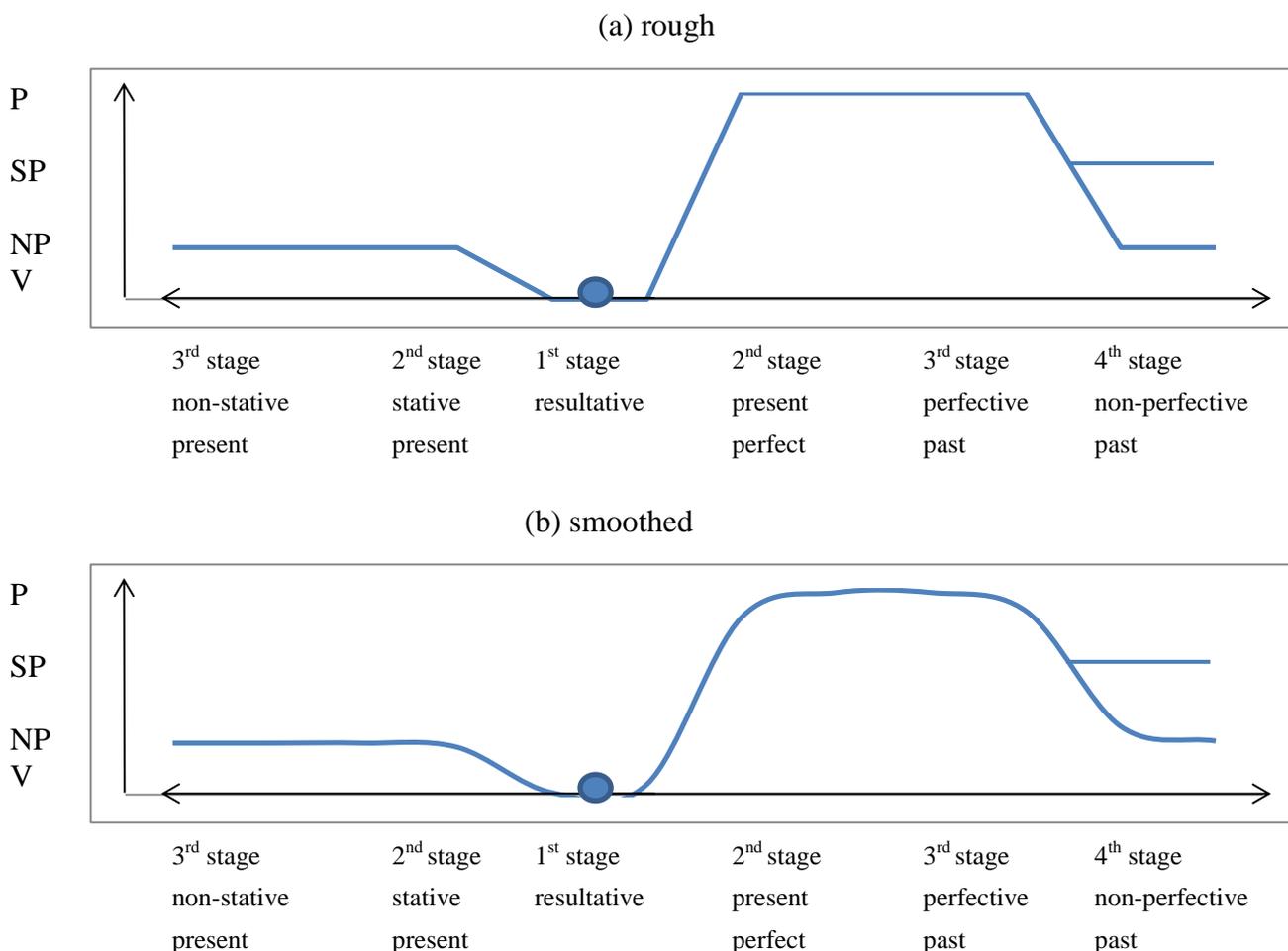


Figure 3.12: Wave model of the semantic space of the YE<sub>1</sub> gram

The form of the YE<sub>1</sub> construction tells very little about its meaning. Nowadays, the entity *ye* is not transparent and functions as a grammatical marker with no independent lexical value.<sup>159</sup> This means that the precise origin of the YE<sub>1</sub> gram – i.e. the lexically explicit periphrasis from which the locution and its path have emerged – cannot be reconstructed only from synchronic evidence, even though the resultative proper (or completive) foundation seems very plausible given the kinetic map posited above. In order to propose the specific origin of the YE<sub>1</sub> gram and verify the hypothesised mapping, a comparative-diachronic study is necessary. However, the mere lack of a cognitive transparency between the shape of the YE<sub>1</sub> construction and its meaning suggests the gram's advanced diachronic age, which stands in harmony with the semantic mapping posited above.<sup>160</sup>

Before discussing a possible origin of the YE<sub>1</sub> construction, some comparative evidence must be introduced. First of all, it should be noted that the use of the morpheme *ye* (or similar) in perfectal, perfective or past functions is only encountered in Mandinka (the variety of Basse included), Bambara (however, not in all dialects), in (Standard) Jula, Worodugu (cf. however, Tröbs 2009:222), Koyaga and Gangaran (Galtier 1980, Bird et al. 1982, Kastenholz 2003) and in Maninka of Niokolo (Tröbs 2009:223). In Bambara, the *yé* form offers senses that are typical of the YE<sub>1</sub> gram in Basse Mandinka. To be precise, it is used as a perfective past, a simple past (preterite), a present perfect (with characteristic resultative, frequentative and experiential values) and as a stative. It can also be employed as a pluperfect and, especially in subordinate clauses, a future perfect as well as a performative. Additionally, the formation appears in conditional protases, be they real factual or (un)real counterfactual (see Idiatov 2000:25-35, 49-55; cf. also Creissels 1983b, Dumestre 2003). It is therefore not surprising that both Idiatov (2000) and Dumestre (2003) classify the construction as a *parfait*, i.e. as a perfect and/or a perfective. In a similar vein, Houis (1981) defines the *yé* gram as a completive-terminative preterite, typologically equivalent to a perfective aspect. Blecke (1988/2004:37-42, 58-61) views the *yé* form as a preterite, i.e. as the expression of a broad past, which with dynamic verbs adopts the nuance of perfectivity. He observes that this construction denotes the value of anteriority or retrospectivity (pluperfect), being additionally found with a modal force in conditional protases. In Kolona Bambara in Southern Mali, the element *yé* is defined as a completive/perfect(ive) marker (*accompli*). However, in this dialect of Manding, the use of *yé* is viewed as an influence of Standard Bambara (Dumestre & Hosaka 2000:17-18). Finally, in Maukakan, the *yé* gram is used as a perfective (*accompli*) remote past that contrasts with the recent past in *wεε* (Creissels 1982:9).<sup>161</sup> It is interesting to note that in Maukakan, the perfect(ive) in *yé* can be used both in transitive and intransitive constructions contrary to the situation in most

<sup>159</sup> Observe, however, that Basse Mandinka includes a postposition *ye* 'for, of'.

<sup>160</sup> The fact that the YE<sub>1</sub> gram is still – in a way – analytical, while the TA form is synthetic, being derived by means of suffixation, does not need to point to their distinct grammatical age. Crosslinguistically, suffixes develop more quickly than prefixes, as may be observed in Spanish (and Romance languages in general) where the same input auxiliary developed into a suffix if it followed a lexical verb (*cantaré* 'I will sing' from *cantare habeo* 'I have to sing' in Latin), but still remains free or unbound if it was used before a lexical verb (*he cantado* 'I have sung' from *habeo cantatum*).

<sup>161</sup> However, according to Derive (1981), *wεε* is used both as a recent and remote past.

Manding dialects /*ŋ ye taa/* > *ní taa* ‘I have gone’ (Creissels 1982:9-10).<sup>162</sup> One also finds the marker *yé* in the southern variety of Lele, as a result of the phonetic change \**r* > *y* (Vydrin 2009b:43; see next paragraph).

In addition, one finds transitive perfect(ive) and/or past forms derived by means of the predicative markers of the shape (C)*á* (where C = *y, l, r, d* or *t*) and *l/r/dÉ* (i.e. *ré/ré/dé*) or *d/tí*. As far as Manding is concerned, the form *dí* is present in Kita Maninka (Keïta 1984:55) and *tá/tà* in Kagoro (Tröbs 2009:222-223). In Mande, these types of morphemes appear in Koranko (*yá*; Kastenholz 1983:63),<sup>163</sup> Vai (*là* or *à*; Tröbs 2014), Soninke (*da*), Kpelle (*á*; Konoshenko 2009, Babaev 2011:19) and in Lele (*ré/ré* or *dé*; see *Kàa ré kánbirindée cín* ‘The snake bit the young man’; Vydrin 2009b:43).

In Manding, the transitive perfect, perfective or past grams can also be formed by means of a *ka*-type marker: *kà* (Worodugukan), *kà* (Jula of Kong and Jula Véhiculaire), *ká* (Manyá), *kà* (Maninka) and *xa* (Xasonka; Tröbs 2009:222-223).<sup>164</sup>

The origin of the entity *ye* in the YE<sub>1</sub> gram – just like the history of other non-transparent markers – is still being debated. It has been proposed that this type of *ye* is related to a beneficiary and associative postposition *ye* found for instance in Mandinka and in Bambara (cf. Bird & Kendall 1986, Creissels 1997a, 1997b, Kastenholz 2003, Tröbs 2004b, 2009, 2010). The original expression would consist of a topicalised noun phrase, accompanied by the postposition (ancestor of the morpheme *ye*), another phrase, which functioned as the subject of a verb denoting an intransitive state. The state conveyed by a verbal slot in the original periphrasis had a resultative meaning, e.g. ‘(is) written’ (Tröbs 2009:227, 2010:65-66). This periphrasis (similar to an expression ‘for him, it is done’) was reinterpreted as a transitive perfect (‘he has done it’), where the topicalised postpositional element has acquired the status of a subject, while the subject of the intransitive verb has been reanalysed as the object of a transitive base (cf. Creissels 1997a, Kastenholz 2003, Tröbs 2004b:285-290, 2009:225-227, 2010:66, 68-71; an equivalent scenario has been proposed for the entity *dí/dá*, cf. Kastenholz 2003:45-46, Tröbs 2004b, 2009 and 2010:65-66). This hypothesis was derived from the fact that the use of *ye* (as well as *dí* in Kita Maninka and *ka* related to the preposition *kan*, in other dialects) as a perfective/past morpheme seems to be correlated with the presence of a similar element in the function of an associative postposition (cf. Tröbs 2004b:291-294, 2009:225-227, 2010:65-71; cf. Bird & Kendall 1986). This is also true for Basse Mandinka where there is a postposition *ye* with a broad range of associative-beneficiary functions *a ye* ‘for him’. As noted by Kastenholz (2003:45-46), the parallel between verbal predicative markers and postpositions is quite common in Manding and Mande (cf. Soninke, Maninka, Vai and Kono; see also Tröbs 2010:67-68). This theory of the origin of the YE<sub>1</sub> gram has an additional advantage, as it also accounts for the split structure found in Manding languages, where this type of a perfect, perfective, past auxiliary typically appears in transitive clauses with overt direct objects. On the contrary, it is usually not found in intransitive constructions (this also holds true for other

<sup>162</sup> According to Tröbs (2009:228), the marker *ní* in Mɛɛka derives from the resultative participle of the verb *na* ‘come’ (cf. Creissels 1997a:11).

<sup>163</sup> As in Mandinka and many other Manding and Mande languages, with certain verbs (e.g. *kàni* ‘love’) the meaning is a permanent present (Kastenholz 1983:64).

<sup>164</sup> There is also a NI-type, which can be illustrated by *ní* in Mɛɛka (Tröbs 2009:222, 228, 230).

affirmative perfect, perfective, past markers such as *dí* in Kita Maninka or *kà* in other varieties of Manding; Kastenholz 2003:43, Tröbs 2004b:291-294, 2009:225-227, 2010:66-71; see also Friedländer 1992 and Keita 1984). The resultative value of the verbal item in the periphrasis, which nowadays appears as a base, is proposed to be related to the unmarked perfective form in Bozo, a language that is regarded as representing an older stage (Tröbs 2010:66). To be exact, in Bozo, the use of a base in unmarked predication generates a perfective value, which may have the case of the original construction reconstructed in this paragraph (Tröbs 2009:226, 2010:65-67). However, it is also possible that the element which presently appears as a base, in its origin, could have been a resultative participle (cf. the development of the Germanic simple past discussed in section 3.1.2).

It has also been proposed that this type of *ye* descends from the verb with the meaning of seeing or finding (cf. Babara *yé* or Mandinka *a je*; Claudi 1994:205 and Blecke 1994:54-55). Blecke (1994:54-55) argues that the value ‘find’ constitutes the cognitive centre from which the perfect and perfective senses have emerged. This origin has especially been hypothesised for the entity *yé* employed in non-verbal equitative clauses – a usage that is very common in Bambara. Creissels (1983b:34 and 1997a:12; see also Blecke 1994, Tröbs 2003:5 and Dumestre 1999:13) derives the sense of this type of *yé* from the imperative of the verb *yé* ‘see’. According to him, the grammaticalisation process has concluded as the concrete lexeme has reached the stage of an untransparent morpheme used in the verbal gram. Although this origin of *yé* in non-verbal clauses in Bambara is plausible, a similar reconstruction seems less likely for the element *ye* in the Basse Mandinka YE<sub>1</sub> gram. To be exact, in their review of lexical sources of grams travelling along the anterior path, Bybee, Perkins & Pagliuca (1994:55-67) do not list any case of the imperative or any lexical verb related to the concept of seeing. In a similar vein, my own typological database containing 200 resultative-path grams from more than 60 languages does not offer any example of an imperative and/or see-type source. Thus, the hypothesis whereby the YE<sub>1</sub> gram derives from a periphrasis built on the imperative of the verb ‘see’ and a verbal base seems to be rather unlikely (for a critical evaluation of this view, see also Kastenholz 2003:42-43).

Another question concerns the origin of the morpheme used for the first person singular and plural, i.e. *ɲa/na* and *ɲà/nà*, respectively.<sup>165</sup> As may be deduced from its form, this marker is characterised by the vowel *a*, while the initial consonant may be related to or reflect the first person pronoun, possibly agglutinated and fused to the original tense-taxis-aspect morpheme (cf. the pronouns *n* ‘I’ and *n̄* ‘we’ in Basse Mandinka). The perfective marker *-a* is found in most South-West Mande languages (Babaev 2011:18). According to Babaev, this *a* type marker can be reconstructed as a Proto-Western-Mande or Proto-South-Western-Mande element, i.e. *\*-a*. This *(\*a)* derives in turn from Proto-Mande *\*da/\*la*. The *\*da/\*la* morpheme can itself be recognised in the TA gram and its cognates across Western Mande and its possible origin was discussed in section 3.1.2. According to one hypothesis, this suffix derives from a locative noun *\*da* ‘place’ used as a topicalisation marker of the original indirect object phrase (cf. Creissels 1997a and 1997b). This origin – which accounts for the use of the successors of the noun *\*da* as post-predicative markers in Western Mande – would also be compatible with the use of its reflexes as post-subject markers in Soninke and

<sup>165</sup> A similar split (*ye/ɲa*) is found in Maninka of Niokolo (Tröbs 2009:223, 228).

Kpelle (Babaev 2011:19), as well as in some dialects of Manding itself (cf. above in this section; see also section 2.1.2). In Soninke, the element *da* constitutes a free perfect-perfective morpheme that follows the subject *a da yinbe lo kurukurun wa* ‘He has buried in the granary’ (Urmanchieva & Plungian 2006). In Kpelle, offering the same perfect or perfective value, it has almost merged with the personal pronoun or person marker: *nà-á Pépèè wò bèlálá káá* ‘I have seen Pepe’s sheep’ (Konoshenko 2009; cf. Babaev 2011:19). Nevertheless, in the dialect of Liberia, the cognate morpheme *â* is still unbounded with no traces of fusion (Babaev 2011).<sup>166</sup> The situation in Mandinka could be viewed as similar, exhibiting however a greater degree of formal grammaticalisation, recognised in the total fusion of the temporal-taxis-aspectual marker and the pronoun. In other words, the pronoun of the first person and the successor of *\*da* merged completely, delivering an inseparable unit *ŋa/na* or *ŋà/nà*. As explained, if the pronoun is to be detached (for instance, in cases where the emphatic variant is used), the marker *ye* must be used (i.e. *nte ye*). In this manner, the situation offered by Kagoro where the marker *tá/tà* is used would not be problematic.<sup>167</sup> Kagoro and (Basse) Mandinka would exhibit the same type of marker, inherited from Proto-Mande. Mandinka would merely present a phonetic assimilation, i.e. *\*-n ta > ŋa*. If this reconstruction is correct, we would witness a convergence of two originally distinct diachronies into a single category or paradigm, i.e. *\*ye* (for all persons) and *\*da* (only for the first person) converge into the YE<sub>1</sub> gram. The *ye* forms constitute a younger layer, probably built around a postposition *ye*. The successors of *\*da* constitute an older (Proto-Mande) layer that survived only residually in Manding.

If the *\*da* element is related to the TA construction and some parts of the transitive perfect(ive) and past grams in Manding, the original periphrasis built by means of the element *\*da* would split into two separated grams: the TA form and, under the shape of *ŋa* or *ŋà*, the YE<sub>1</sub> form. A different morphosyntactic status of the original *\*da* as a suffix *-ta* (in the TA gram) and as a part of the person marker, not fused into the lexical verb, may be typologically similar (albeit not identical) to the difference between the development of the Latin verb *habeo* in the future tense where it followed the lexical verb (cf. Spanish *cantaré* or French *chanterai* ‘I will sing’) and in the perfect/past tense where it preceded it (cf. Spanish *he cantado* or French *j’ai chanté* ‘I have sung’).<sup>168</sup>

Tröbs (2004b:294-296, 2009:228-229) proposes a different – although partially similar – scenario. According to Tröbs, the Maninka morpheme *ŋa* is related to the *ka*-type markers found in Manding. Due to the presence of a nasal consonant (cf. the first person *n* and *ń*) it adopted the form *ŋa* (cf. also Creissels 1980:155). Nevertheless, the relationship between *ŋa* and *ye* would be similar: *ŋa* would be an older grammaticalisation layer, while *ye* would be a younger layer within a single paradigm (Tröbs 2004b:295, 2009:229).

<sup>166</sup> Observe that in the southern variety of Lele, the transitive perfective in *ye* is a result of a phonetic change *\*r > y*. In this way, the older form (still available in Lele) *ré/ré/dé* developed into *ye* (Vydrin 2009b:43). This could suggest a common origin of all preverbal perfect(ive) markers built by means of consonants *d, t, r, l* and *y*, and a vowel (*a, e, i*). In this manner, the unbound preverbal morpheme of the transitive perfects, perfectives and pasts could also be related to phonetically similar suffixes found in intransitive constructions.

<sup>167</sup> According to Tröbs (2009:228), the origin of *tá/tà* in Kagoro is unclear.

<sup>168</sup> Of course, the element *\*da* cannot be fused to the verb because it is separated from it by a direct object.

Finally, the variants *ŋe* and *ñe* (and even *ne*) may go back to the *ye* marker being conditioned phonetically by the nasal consonant of the personal prefix *ŋ/n*, i.e.  $\eta/n + ye > \eta e/\tilde{n}e$  (cf. Creissels 2013b:40). Observe that according to Macbair (1842), the *ŋe* form was typical in the 19<sup>th</sup> century.<sup>169</sup>

To conclude, whatever the exact source of the YE<sub>1</sub> formation could be, with a great degree of probability, the gram derives from a resultative or completive periphrasis. Although, as presented above, this resultative origin cannot be recognised in the contemporaneous form of the gram, the synchronic semantic evidence is strong. Furthermore, the most plausible reconstruction of the origin of the YE<sub>1</sub> gram postulates a resultative proper (resultative intransitive) input (Tröbs 2004b:287-288, 2009:225-227), which would be fully compatible with the mapping posited in this section. It is also possible that the behaviour of another formation built by means of the morpheme *ye*, i.e. YE<sub>2</sub>, may shed some additional light on the prehistory of the YE<sub>1</sub> locution and the origin of the entity *ye*. As will be explained in section 6.2, there is a common typological link between resultative-path grams and expressions of directive modality, such as optatives (and subjunctives).

### 3.3 The NAATA gram

Another construction of the resultative-path type is the NAATA gram. This formation is formed by means of the auxiliary *naa* ‘come’ – employed in the previously analysed TA gram – and the base of a lexical verb:

- (3.44)        A        **naata**        **taa**  
               he        NAATA        go  
               ‘He went’

As demonstrated by the following examples, the NAATA form can appear both in intransitive (and/or de-transitive; cf. 3.45.a) and transitive (active) constructions (cf. 45.b). The negative variant is formed by the negative form of the TA gram of the verb *naa*, i.e. *maŋ naa* (cf. 3.45.c).

- (3.45) a.        A        **naata**        **ke**  
               it        NAATA        be.done  
               ‘It has been done’  
       b.        A        **naata**        a        **ke**  
               he        NAATA        it        do  
               ‘He has done it’  
       c.        A        **maŋ**        **naa**        a        **ke**  
               he        MAŊ        come    it        do  
               ‘He has not done it’

<sup>169</sup> It is, however, not impossible that *ŋe* and *ne* (i.e. forms with the vowel *e*) are also results of an analogical levelling of the original *ŋa* and *na* due to a paradigmatic pressure imposed by the element *ye*.

The NAATA locution should clearly be distinguished from a literal periphrasis composed by the verb *naa* ‘come’ in the TA form (i.e. *naata*) and the infinitive of a lexical verb, i.e. the base accompanied by the infinite marker *la* or *ka*:

- (3.46) a. N     **naata**           bukoo safee la  
           I     NAATA       book write to  
           ‘I came to write the book’
- b. Fo    i     **naata**       le    ka    ñ    kasaara       banj?  
           QUES you NAATA    FOC to    us    destroy       QUES  
           ‘Did you come in order to destroy us?’

### 3.3.1 Sematic potential

#### 3.3.1.1 Grammatical tradition

Despite the fact that the formation is extremely common both in colloquial-discursive situations in Basse and in religious narrative texts written in Standard Gambian Mandinka, most scholars paid little attention to it in their studies of the Mandinka verbal system. *De facto*, grammars, teaching manuals and scientific articles on Gambian Mandinka written thus far (for instance, Macbrair 1843, Hamlyn 1935, Rowlands 1959, Creissels 1983a, Gamble 1987, Colley 1995, Wilson 2000, WEC 2002 and Dramé 2003) usually ignore or marginalise the NAATA locution. Creissels and Sambou (2013:165) discuss this gram and associate it with a dynamic function (with no nuance of motion), particularly common in narration.<sup>170</sup>

#### 3.3.1.2 Evidence from Basse<sup>171</sup>

It must be emphasised that, as mentioned above, the NAATA gram is highly common in Basse Mandinka. Its overall frequency is fully comparable to that offered by the TA and YE<sub>1</sub> constructions.

As far as the semantic potential of the NAATA form is concerned, on various occasions, the locution offers values which correspond to the domain that usually characterises the category of present perfects. In such cases, the reading of the NAATA form is usually dynamic: prominence is given to the prior action, while the resulting state is merely suggested. To begin with, the NAATA gram may convey the sense of an inclusive perfect, suggesting that a certain activity or situation began at an overtly specified time in the past, but has continued into the present moment in an uninterrupted manner:

- (3.47) a. A     **naata**       **kuuraj**       tili    naani  
           he    NAATA       be.sick    day    four

<sup>170</sup> The construction has received some attention from scholars researching cognate languages, such as Bambara (see section 3.3.2, below).

<sup>171</sup> The evidence offered in this section draws from my paper “The meaning of the NAATA + infinitive construction in Basse Mandinka” published in *Lingua Posnanensis* 40 (cf. Andrason 2012m).

- ‘He has been sick for four days (he is still sick)’
- c. Kabiriŋ 1994 ñiŋ ne            **naata**            **ke** n na    dookuwo    ti  
 since 1994 this FOC            NAATA            be I of job            EXIS  
 ‘Since 1994, this has been my job’

Approximating a resultative present perfect of current relevance, the gram expresses previous – already completed – actions whose accomplishment affects the present state of affairs. Put differently, certain effects of a formerly performed activity are currently available, determining the condition of the subject of the sentence.

- (3.48) a. A            **naata**            **faa**  
 he            NAATA            die  
 ‘He has died (and he is dead now)’
- b. Saayiŋ n            **naata**            **mur**u    karambuŋ            to kotenke  
 now I            NAATA            return school            to again  
 ‘Now I have returned to school (and I am at school, i.e. I am a student)’

The construction may likewise indicate that resultative actions have occurred several times or repeatedly, thus approximating the category of an iterative present perfect:

- (3.49) A            **naata**            **ke**    bii    siiña a    naani  
 it            NAATA            occur today time    four  
 ‘It has occurred today four times’

The NAATA form commonly appears with the force of an experiential present perfect. In this function, it indicates that a given activity forms a part of the subject’s experience, having occurred at least once during his or her life time:

- (3.50) a. Fo            a            nene **naata**            a            **ke?**  
 QUES he            ever NAATA            it            do  
 ‘Has he ever done it?’
- b. Haa, a            **naata**            **ke**    siiña a    kiliŋ!  
 yes it            NAATA            occur time    one  
 ‘Yes, it has occurred once!’

The NAATA locution can also function as an indefinite perfect:

- (3.51) N            taata    Basse    aniŋ    n            **naata**            kewo    ñiŋ    **faa**  
 I            went    Basse    and    I            NAATA            man    this    kill  
 ‘I went to Basse and I killed the man’

The perfectal uses of the NAATA construction may also be found with a past and – although only in subordinate temporal clauses – a future temporal reference. In such cases, the gram

functions as a pluperfect and future perfect, respectively. In addition, the NAATA form may be used with a performative force, although this occurs extremely seldom.

Apart from being used with a taxis force as a present perfect, the NAATA form is extensively employed as a definite past tense. In these cases, the past moment is specified by means of adverbs and adverbial locutions or by means of a general context. As for the temporal distance from the speaker or narrator's here-and-now, this may range from recent (e.g. immediate, hodiernal and hesternal; cf. 3.52.a) to general (e.g. during a person's life; cf. 3.52.b) and remote (e.g. ancient or legendary past; cf. 3.52.c). This means that the NAATA gram may introduce activities that refer to any temporal point in the past, either nearby or distant.

- (3.52) a.     A     **naata**       **faa**     bii  
           he     NAATA       die     today  
           'He died today'
- b.     Sanji 1988 n   **naata**       **sawuŋ** Saragosa saatewo     to  
           year 1988 I   NAATA       move Zaragoza city       to  
           'In 1988, I moved to Zaragoza'
- c.     Judasi **naata**       **ke**     Yeesu jamfaalaa     ti  
           Judas NAATA     be     Jesus traitor       EXIS  
           'Judas became Jesus' traitor'

With respect to the aspectual value of the NAATA periphrasis, the construction most commonly denotes perfective – unique, punctiliar, bounded, terminative or ingressive – events:

- (3.53) a.     A **naata**       **ke**     kabiriŋ a     be     saatewo       doo     to  
           it NAATA     happen when he     NVP town       certain at  
           'It happened when he was in a certain town'
- b.     Wo   koolaa, n   **naata**       sunkutu       doo     **futuu**,  
           that after, I   NAATA     girl         another marry  
           'After that, I married another girl'
- c.     Basse la lopitaani   kutoo **naata**   **paree**     sanji taŋ     kooma  
           Basse of hospital   new NAATA be.ready   year ten     ago  
           'The new hospital of Basse became ready ten years ago'

In certain cases, the NAATA formation – employed in the past perfective function – is equivalent to the TA construction, derived from telic verbs. This means that in the following examples, the slots *naata faa* or *naata taa* and the forms *faata* or *taata* display an identical perfective force 'he died' and 'he went', respectively:

- (3.54) a.     Bituŋ ate   **naata**       a     **faa**  
           then he   NAATA     him   kill  
           'Then he killed him'

- b. Bituŋ ate a **faata**  
 then he a kill-TA  
 ‘Then he killed him’
- c. A **naata** **taa** Basse  
 he NAATA go Basse  
 ‘He went to Basse’
- d. A **taata** Basse  
 he go-TA Basse  
 ‘He went to Basse’

However, the perfective value of the NAATA form is significantly more regular and persistent than in the case of the TA and YE<sub>1</sub> formations. This may clearly be observed if we compare the NAATA gram with the use of an analogous verb (with the exception of telic verbs in determined contexts, cf. the previous paragraph) in the TA or YE<sub>1</sub> constructions. As has been explained in section 3.1 and 3.2, when derived from some roots, these forms – besides appearing with a perfective force – may also function as durative (non-perfective) past tenses. On the contrary, the value of the NAATA periphrasis in similar environments is most commonly perfective.

For example, if one compares the use of the verbs *kuuraŋ* ‘be sick’, *saasaa* ‘be ill’ and *koyi* ‘be white, clear’ in the NAATA and TA formations the following can be postulated. While in the former case, the significance is clearly perfective (or ingressive ‘get’; cf. examples 3.55.a, 3.55.c and 3.55.e), in the latter, two readings are equally possible: one perfective (analogous to the previous case) and the other – very frequent and, in fact, dominant – stative or durative (3.55.b, 3.55.d and 3.55.f):

- (3.55) a. Wo waatoo la ate **naata** **kuuraŋ** baake  
 that time at he NAATA be.sick very.much  
 ‘At that time, he became (got) sick’
- b. Wo waatoo la ate **kuuranta** le  
 that time at he be.sick-TA FOC  
 ‘At that time, he was sick’
- c. Tili dantaŋ koolaa, Laamini **naata** **saasaa** bake  
 day few after, Lamin NAATA be.sick very.much  
 ‘Few days later, Lamin got very sick’
- d. Kunuŋ, a **saaaata** bake  
 yesterday he be.sick-TA very.much  
 ‘Yesterday he was very sick’
- e. A la feetoofatoolu **naata** **koyi** bake  
 he of clothes NAATA be.white very.much  
 ‘His clothes turned very white’
- f. Ñiŋ dendinkoo **koyita** nuŋ  
 this shirt be.white-TA then  
 ‘This shirt was white’

This contrast between the NAATA form (a dynamic perfectal and/or perfective expression) and the TA gram (a construction which besides perfectal and perfective uses also admits stative and durative values) may be illustrated by the following example where the two locutions coincide:

- (3.56) N **fankata** le. Nte **naata** fankoo **soto** le  
 I be.rich-TA FOC. I NAATA riches get FOC  
 ‘I am rich. I have become rich (lit: I have acquired riches)’

A similar difference can be observed if one compares the NAATA form of the root *a so* ‘get, obtain’ with the use of the same verb in the YE<sub>1</sub> construction. In the NAATA gram, the sense is dynamic (perfectal ‘has obtained’ or perfective ‘obtained’), whereas in the YE<sub>1</sub> locution, the meaning is usually stative ‘he has’, even though dynamic interpretation is also possible:

- (3.57) a. A **naata** kodoo **soto**  
 he NAATA money get  
 ‘He has gotten money / He got money’  
 b. A **ye** kodoo **soto**  
 he YE money get  
 ‘He has money’

The dynamic (perfectal or perfective) sense of the NAATA form – as contrasted with the non-dynamic (durative or stative) value possible with the YE<sub>1</sub> gram – may finally be observed in the following use of the verb *a loŋ* ‘to know’. In the YE<sub>1</sub> formation, this root most commonly conveys the durative meaning of knowing (*a ye a loŋ* ‘he knows’ or ‘he knew’). However, when employed in the NAATA gram, the value of the entire locution corresponds either to a dynamic perfect or to a perfective past, offering a strong ingressive sense ‘get to know, understand, realise’.

- (3.58) N ka tu kamfaariŋ,  
 I used.to continue being.angry  
 ‘I continued being angry (I was angry / I used to be angry),  
 fo labajo la n **naata** a **loŋ** ko,  
 until last at I NAATA it know that  
 until finally I got to know (I understood) that  
 kamfaa maŋ nafaa soto n ye  
 anger not benefit has I for  
 anger had no benefit for me’

The above discussion demonstrates that the NAATA formation is invariably dynamic in contrast to common non-dynamic (stative, durative) readings offered by various roots in the TA and YE<sub>1</sub> grams. Only on radically infrequent occasions, the sense of the NAATA form

may approximate the category of a non-perfective past. In such cases, the perfective punctiliar (either ingressive or terminative) sense is significantly less patent:

- (3.59) Moolu **naata lafi** ŋa ì maakoyi kaŋo ñiŋ to  
 People NAATA want I.may them help language this in  
 ‘People wanted that I would help them in this language (i.e. people wanted me to help them)’

In addition to the values introduced thus far – which approximately correspond to determined uses of the TA and YE<sub>1</sub> grams discussed in sections 3.1 and 3.2, above – the NAATA formation sometimes provides modal nuances.<sup>172</sup> Namely, the construction can indicate that a given perfectal or past action has occurred spontaneously and accidentally, or due to the fact that the subject has changed his or her original intention:

- (3.60) a. A **naata naa**  
 I NAATA come  
 ‘It happened that he came (first, he was not going to come, but he came)’  
 b. N **naata a ke**  
 I NAATA it do  
 ‘It happened that I did it (first, I was not going to do it, but I did it)’

Lastly, the NAATA gram may appear in protases of the three types of conditional periods: real factual (3.61.a), real counterfactual (3.61.b) and unreal counterfactual (3.61.c). However, one must observe that the use of the TA or YE<sub>1</sub> form in these contexts is much more common. To be exact, although the examples quoted below are accepted by native speakers as fully grammatical, the informants viewed them as “complicated” and tend to replace the NAATA gram by an equivalent form in the TA or YE<sub>1</sub> construction. It is also important to note that all the cases of the conditional use of the NAATA gram were produced on request. This means that my database lacks spontaneously formulated conditional sentences where the NAATA form would be used in protases. Nevertheless, such a use remains possible.

- (3.61) a. Niŋ i **naata** motoo **saŋ**,  
 if you NAATA car buy  
 ‘If you buy the car,  
 ntelu be taa la saama Banjun  
 we NVP go to tomorrow Banjul  
 we will go tomorrow to Banjul’  
 b. Niŋ nte **naata fanka** saayiŋ, nte si wasa nuŋ  
 if I NAATA be.rich now I will be.happy then  
 ‘If I got rich now, I would be happy’  
 c. Niŋ ite **naata** wo **ke** kunuŋ,

<sup>172</sup> The term ‘modal’ is employed because, by using the NAATA construction, the speaker expresses his or her attitude toward the activity conveyed by the main lexical verb.

if	you	NAATA	that	do	yesterday		
‘If you had done it yesterday,							
	n	terimaa	te	faa	la	nun	
	my	friend	NEG.NVP	die	to	then	
my friend would not have died’							

### 3.3.2 Dynamic map

The evidence introduced in the previous section demonstrates that the meaning of the NAATA construction commonly corresponds to a dynamic present perfect (inclusive, resultative, iterative, experiential and indefinite), to a past tense (immediate, recent, general and remote) and to a perfective aspect (punctiliar, terminative or ingressive past). No less frequent are uses where the formation expresses the non-intentionality, accidentality or spontaneity of a corresponding perfectal or perfective past event. In all of the above-mentioned cases, the meaning of the gram is invariably dynamic. This dynamic undertone is clearly related to the sense of the verb *naa* ‘come’ from which the auxiliary entity *naata* is derived. Besides these typical values, the NAATA formation is rarely used in order to convey performative, non-perfective (durative) and modal (protatic) nuances.

It is evident that given the components of the semantic potential of the NAATA form identified above, the gram can be explained in terms of a coherent map by employing the anterior path as a chaining template. The correspondence between the values offered by the NAATA locution and the anterior cline is almost ideal, as all the concrete atomic values conveyed by this gram match consecutive stages of the anterior path. To be exact, the various senses of a perfect, the use as a definite past and in particular as its perfective subtype offered by the NAATA construction as well as rare cases where the formation offers a non-perfective (durative) past nuance harmonise with consecutive stages of the anterior path. The prototypicality zones are located in the sphere of a dynamic present perfect and a perfective past. On the other hand, the function of a non-perfective (durative) past is extremely uncommon, and the resultative proper sense seems to be virtually unavailable because of the inherently dynamic nature of the NAATA form. Moreover, the frequent pluperfect and much less common future perfect functions can also be accounted for by the anterior-path mapping, if one locates this evolutionary template in a past and future time frame, respectively. It is important to note that the simultaneous cline seems not to operate for the semantic potential of the NAATA formation, as the gram has been specialised in dynamic senses available on the anterior cline only. The kinetic map of the senses offered by the NAATA construction which are related to the anterior path can be formulated in the following manner:

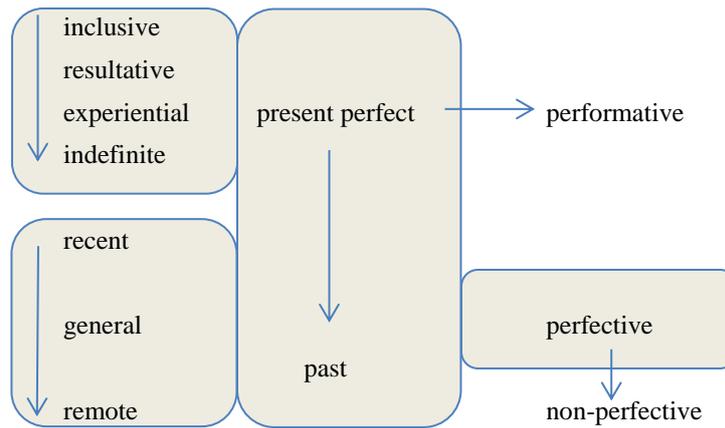


Figure 3.13: The map of the NAATA gram – senses belonging to the anterior-path

As has been demonstrated in section 3.3.1, the NAATA form also expresses the concepts of non-intentionality, accidentality and spontaneity of a certain perfectal or past activity. Such modally tinted values are not posited by the anterior-path model. However, linguistic typology does conceive an evolutionary possibility which links the grammatical life of anterior-path grams with determined modal domains, referred to as the ‘evidential trajectory’. As explained in detail in section 1.2.3.2, in accordance with this cline, resultatives develop into modal grams by passing through the following stages: a) the evidential gram (the inference is based upon resulting visible traces; b) the inferential gram (the inference is based upon general assumptions and hearsay); c) the referential gram (the event is reported and non-witnessed); and d) the epistemic mood (cf. Lindstedt 2000, Johanson 2000 and 2003 and Aikhenvald 2004:112-117, 279-281). Although the connection between the values located on the evidential cline and the senses of non-intentionality, accidentality and spontaneity is not straightforward and needs further studies, it is possible that the nuance of a cognitive distance of the subject or his or her lack of conscious involvement in the activity may be one of meanings related to and underlying certain extensions towards evidentiality. In this manner, this group of senses offered by the NAATA form could be viewed as the initial – almost a pre-step – of the evidential path.

Additionally, the modal values offered in conditional protases (real factuality, real counterfactuality and unreal counterfactuality) may all be explained and chained to the resultative input by means of a modal contamination path. In this manner, this class of modal senses conveyed by the NAATA gram would be networked in a manner analogous to that developed for the TA and YE<sub>1</sub> constructions. To be exact, the present perfect use of the NAATA form has been reanalysed in a conditional context as a real factual mood, while the past and pluperfect as a real counterfactual mood and an unreal counterfactual mood, respectively.

Keeping in mind the three chaining templates, the holistic kinetic map of the NAATA form may be formulated in the following way:

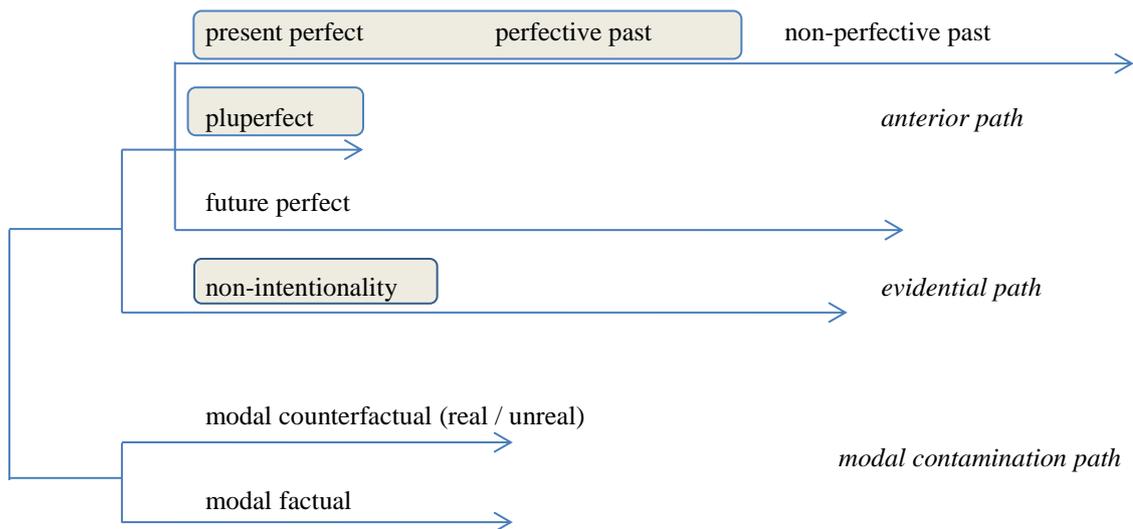


Figure 3.14: The kinetic map of the semantic potential of the NAATA gram

As a result, the formation may be classified in its totality as a manifestation of the anterior trajectory, covering the phases of this path that range from the inclusive perfect to the non-perfective past, with the prototypicality area located in the stages of the present perfect and perfective past. The linear representation of the NAATA form – limited to the anterior cline located in a present time sphere and with a considerable simplification of the granularity of distinguished stages – can be designed as follows:

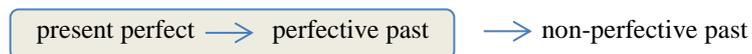
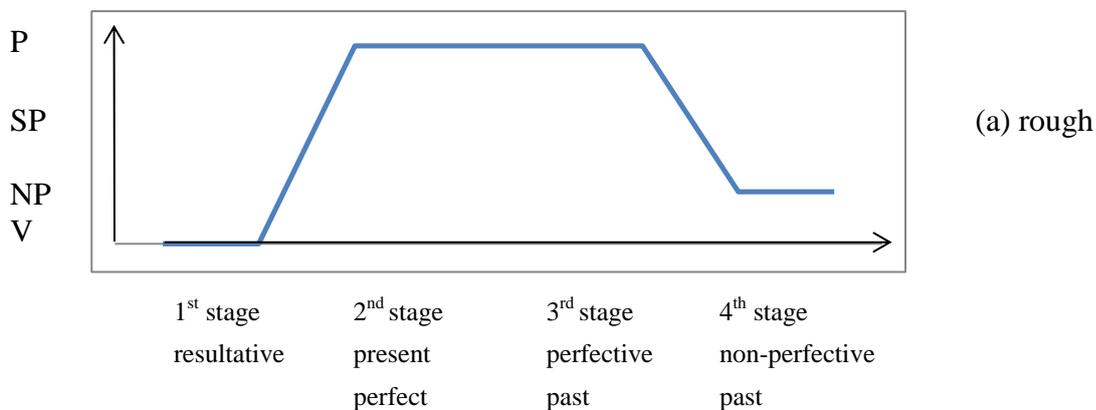


Figure 3.15: Linear model of the semantic space of the NAATA gram

Accordingly, the wave-model of the NAATA gram – with the prototypicality zones raised vertically – takes the following form:



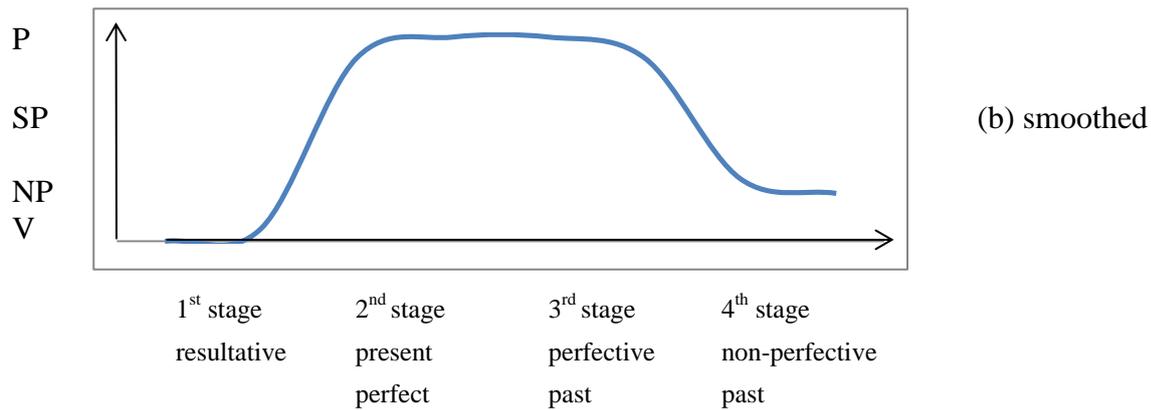


Figure 3.16: Wave model of the semantic space of the NAATA gram

The definition of the NAATA construction as an anterior-path gram is corroborated by the form of this gram. As mentioned at the beginning of section 2.3, the central element in the NAATA expression is the predicate *naa* whose lexical meaning is ‘come’. It is important to observe that from a crosslinguistic perspective verbs with the meaning of coming (just like the said root *naa*) constitute one of the main sources of perfects, perfectives and past tenses (Bybee, Perkins & Pagliuca 1994:63-64, 67). Two exemplary cases of this phenomenon can be identified in the Romance family of Indo-European languages. In French, a periphrasis composed of the verb *venir* ‘come’, the preposition *de* and the infinitive of a lexical verb is currently used as a resultative present perfect (Juge 2007:34), as it is so – although in a lesser degree – a similar locution in Spanish: *vengo de hablar con él* ‘I have just talked to him’. Another example can be found in Lingala where one of the perfects consists of the verb *kouta* ‘come’ and the infinitive of a lexical verb: *Nauti kosomba elanga moko* ‘I have bought a field’.<sup>173</sup> The Basse Mandinka language conforms to this typologically common device and derives one of its anterior-path grams by means of the auxiliary with the sense of coming.

Comparative evidence harmonises with the analysis of the NAATA form in Basse Mandinka presented above. Namely, Bambara possesses a common periphrastic construction built of the auxiliary *nã* ‘come’ in the perfective *ra* gram (the cognate of the Basse Mandinka TA form), which in this case takes the ending *-ná*, and the lexical verb (i.e. *nàná* + base). The meaning of this locution approximates the expression ‘it happened that’. The gram functions as a perfect and/or perfective, moreover emphasising either the lack of the subject’s control or the non-intentionality of the action conveyed by the verbal base (*Bàná` nàna Sékù fàga* ‘The sickness has killed Seiku’; Idiatov 2000:43). Although this locution can appear in transitive and intransitive constructions, intransitive and reflexive verbs are particularly common. In the case of a de-transitive use, the formation tends to be employed with the complement expressing the agent, thus giving rise to passive constructions (*Fòlódá` nàna kári dò`fè* ‘It happened that someone (by accident) broke the window’; Idiatov 2000:44). The same formation – i.e. *nàná* + base – can also be employed in order to convey a perfective or

<sup>173</sup> Bybee, Perkins & Pagliuca (1994:64, 67) quote the examples of ‘come’ perfects or resultatives in Margi (three formations: *era*, *çivar* and *savar*), Yagaria and Kanuri.

terminative sense (*Dén` nàna kòrɔbaya* ‘The child has finally grown up’; Idiatov 2000:44; for a detailed discussion of this construction see Idiatov 2000:43-45).

Bambara of Kolona provides a further example of the use of the verb ‘come’ as an auxiliary of perfect(ive) and/or past constructions. To be exact, in this dialect, one of the perfective formations (“accompli”) is a periphrasis built around the auxiliary *na/naa* which probably goes back to the lexical verb *nà* ‘come’ (Dumestre & Hosaka 2000:17). Even though this construction is less common than the other perfectal or perfective morphemes, it has comparable force, which – as observed by Dumestre & Hosaka (ibid.) – derives from its original lexical venitive meaning.<sup>174</sup>

A typologically similar pattern is also found in Kita Maninka, where the expression composed of the element *nà-nin* (an original resultative participle of the verb *nà* ‘come’, cognate to the *-riŋ* participle in Basse Mandinka; cf section 3.4 below) and the infinitive in *-la* or the bare infinitive of a lexical verb is used as a perfect: *à nàniŋ mùsùjógù hùdù* ‘he married a bad woman’ (this construction is however only used in the affirmative; Creissels 1997b:15-16, Creissels 2009, Vydrin 2008/2009).<sup>175</sup>

### 3.4 The RII gram

The next verbal gram of the resultative-path type found in Basse Mandinka is a formation composed of the non-verbal predicator *be* (in the negative *te*) and the participle derived by means of the suffix *-riŋ* (62.a-b). Given its most salient structural characteristic, i.e. the participial suffix, this construction will be referred to as the ‘RII gram’. Although the participle used in the RII construction is usually derived by adding the suffix *-riŋ* to the base (for instance *bataa* ‘be tired’ > *bataariŋ* ‘[being] tired’ or *siinoo* ‘sleep’ > *siinooriŋ* ‘sleeping, asleep’), when a given verb ends in the consonant *ŋ*, the participle employs an alternative shape, i.e. *-diŋ* (*kuuraŋ* ‘be sick’ > *kuurandiŋ* ‘[being] sick’ or *bambaŋ* ‘be strong’ > *bambandiŋ* ‘[being] strong’; cf. 3.62.c).

- (3.62) a.     A     **be**            **katiriŋ**  
          It     NVP            be.cut-PART  
          ‘It is cut’
- b.     A     **te**            **siinooriŋ**  
          he    NEG.NVP    sleep-PART  
          ‘He is not asleep / he is not sleeping’

<sup>174</sup> It is also possible that this morpheme derives from a verbal connector *nà* (Dumestre & Hosaka 2000:17). A similar formation is found in Jula. In this variety of Manding, the ideas of anteriority (pluperfect) and past are expressed by a periphrasis *nàà* + lexical verb + *rà*. The gram is admissible in both transitive and intransitive constructions and typically expresses punctiliar processes with no relation with the moment of speech. It is never used as a habitual or progressive (Braconnier 1991:7). However, according to Braconnier (1991:11), the element *nàà* derives from *nɔ* + *yè* where *nɔ* means (or is related to the meaning of) ‘trace’. One should also note that in some cases, an *N* type element in perfects, perfectives or pasts is not related to the verb ‘come’. For instance, in the South varieties of Lele, there is a past morpheme *nɔ/no* that derives from an adverb and/or proto-Mande form of retrospectivity, cognate to *nuy* ‘then’ in Basse Mandinka (Vydrin 2009b:46-47).

<sup>175</sup> Regarding the use of the cognates of the entity *naa* in prospective (future) functions see section 5.2. Concerning the origin of this type of the *naa* [*<\*nà*] marker, see Kastenholz (2003:49) and Babaev (2011:13-14). On the possible origin of the suffix *ta* (*<\*da*) in *naata* see sections 3.1.2 and 3.2.2.

- c.     **A**     **be**           **kuurandiŋ**  
           he     NVP           be.sick-PART  
           ‘He is sick’

It shall be acknowledged that the *-riŋ* participle regularly offers an intransitive meaning, which implies that the RII gram, itself, exclusively appears in intransitive constructions:

- (3.63) a.     **M**     **be**     **sabatiriŋ**     **Basse**  
           I     NVP   live-PART     Basse  
           ‘I am living in Basse’  
       b.     **M**     **be**     **siiriŋ**  
           I     NVP   sit.(down)-PART  
           ‘I am sitting / I am seated’

This invariably intransitive character signifies that roots which may be employed transitively (e.g. *a safee* ‘write (it)’ or *a tiŋaa* ‘spoil (it)’) make a regular use of their de-transitive varieties (cf. 3.64.a-b; see however reflexive verbs below in this section). Alternatively, one may state that the participles in examples 3.64.a-b are derived from de-transitive predicates *safe* ‘be written’ and *tiŋaa* ‘be spoiled’. As a result, the entity which, in the function of a direct object, would precede the verbal stem cannot appear in the RII locution (cf. 3.64.c).

- (3.64) a.     **A**     **be**     **safeeriŋ**  
           it     NVP   be.written-PART  
           ‘It is written’  
       b.     **A**     **be**     **tiŋaariŋ**  
           it     NVP   be.spoiled-PART  
           ‘It is spoiled’  
       c.     \*\***A**   **be**     **a**     **safeeriŋ**  
           he     NVP   it     write-PART

The intransitive nature of the gram does not imply that the construction may be formed with all intransitive predicates. The RII form is regularly used with adjectival verbs (e.g. *koyi* ‘be white’, *bataa* ‘be tired’ or *kuuray* ‘be sick’) and with de-transitive verbs (i.e. intransitive verbs that possess a transitive equivalent; cf. *safe* ‘be written’ vs. *a safe* ‘write (it)’ and *tiŋaa* ‘be spoiled’ vs. *a tiŋaa* ‘spoil (it)'). It is also quite commonly employed with intransitive roots that express less dynamic activities, situations or postures, such as *siinoo* ‘sleep’, *loo* ‘stand’ or *sabati* ‘stay at, live’. However, intransitive predicates of motion display a certain reluctance to appear in the RII gram. While some movement verbs are regularly found in this formation (e.g. *naa* ‘come’ and *boyi* ‘fall’ in 65.a and 65.b) others, such as the highly common verb *taa* ‘go’, cannot be used in the RII gram (66.c) in Basse Mandinka:

- (3.65) a.     **A**     **be**     **naariŋ**  
           he     NVP   come-PART

- ‘He is coming’
- b.    **A**    **be**    **boyiriŋ**  
       he    NVP   fall.down-PART  
       ‘He is on the floor / He is fallen down’
- c.    \*\***A**   **be**    **taariŋ**  
       he    NVP   go-PART  
       Intended meaning: ‘He is going / gone’

In various cases, the informants disagreed in the admissibility of certain intransitive verbs (especially, movement or activity verbs) in the RII locution. While some considered such uses as entirely acceptable, others regarded them as ungrammatical.<sup>176</sup> As examples of the predicates that had not been admitted by all the speakers in the RII gram one may quote *A be sayiriŋ* ‘He is back’, *A be boririŋ* ‘He has left / He is absent’, *A be taamariŋ* ‘He is travelling / He has left for travelling’, *A be jeleriŋ* ‘He is smiling’ or *A be faaniyaariŋ* ‘He is lying’.

Additionally, it should be noted that certain reflexive verbs, such as *i kuu* ‘wash oneself’ or *i doŋ* ‘dance’, may also be employed in the RII gram. In such cases, the typical object-place is exceptionally occupied by the pronominal reflexive entity, e.g. *n* ‘myself’ or *i* ‘yourself, him/her/itself’. Again, not all the informants considered this usage as grammatical (3.66.a-b). Finally, several reflexive verbs are used intransitively in the RII form. See, for instance, the predicate *i laa* ‘to lie down (oneself) which in the RII locution “loses” its reflexive pronoun (3.66.c):

- (3.66) a.    **M**    **be**    **n**            **dondiŋ**  
           I    NVP   REFL        dance-PART  
           ‘I am dancing’
- b.    **M**    **be**    **n**    **kuuriŋ**  
       I    NVP   REFL   wash-PART  
       ‘I am clean / I am washing myself’
- c.    **A**    **be**    **laariŋ**  
       he    NVP   lie.down-PART  
       ‘He is lying’

### 3.4.1 Semantic potential<sup>177</sup>

#### 3.4.1.1 Grammatical tradition

As far as (Standard) Gambian Mandinka is concerned, the RII gram has received quite an extensive treatment and has been defined in the following ways. Macbrair (1842:7) proposes that the RII locution expresses “the state of the object at the time of its being spoken of”, e.g.

<sup>176</sup> The informants who are originally from the area outside the Basse region (Darselameh or Fulla Bantang) regarded these forms as incorrect. Speakers from Basse (as well as from Manneh Kunda, Bassending and Kaba Kama), especially the young ones, judged these examples as admissible.

<sup>177</sup> This section draws on my article “Mapping the meaning of the *be riŋ*” formation in Basse Mandinka” published in *Journal of West African Languages* 40/2 (cf. Andrason 2013h).

*Kewo be konkoriŋ* ‘The man is hungry’ or *Kewo be laariŋ* ‘The man is lying’. He maintains that the formation – in his view, built on a “participial noun” (ibid.:22) – denotes present conditions or qualities. In this function, the gram clearly diverges from other verbal tenses and aspects that indicate properly dynamic actions and fientive<sup>178</sup> ideas.

Hamlyn (1935:14, 43) explains the construction derived from the participial *-riŋ* form as a present and continuous “tense” of intransitive and adjectival verbs, e.g. *A be siiriŋ satewo* ‘He is staying in the town’, *M be boyiriŋ* ‘I am falling’ and *A be jaariŋ* ‘It is dry’. However, in a way contradicting his own definition, this grammarian quotes one interesting example where the locution shows a habitual or durative value rather than a continuous sense: *A be jaariŋ nuŋ* ‘It used to be dry’.

According to Creissels (1983a), the entity in *-riŋ* is a “stative participle” that may be employed with non-verbal predicators *be* and *te* in order to describe the subject’s circumstance: *A be siiriŋ* ‘He is seated’. Creissels also maintains that when the gram is derived from lexically stative predicates, it is synonymous with the TA formation. The phrases *A be kuurandiŋ* and *A kuuranta* are claimed to be semantically equivalent and mean ‘He is ill’. On the contrary, in cases where the locution is formed with dynamic verbs, the RII and TA expressions are not fully synonymous. The former denotes a state or a condition while the latter conveys the idea of a dynamic activity that has led to the ongoing state: *A be teeriŋ* ‘It is broken’ versus *A teeta* ‘It got broken’. In Creissels’ recent book, co-authored with Sambou (Creissels & Sambou 2013:133, 155), the RII gram is understood as a predicative analytical locution composed of the non-verbal predicator *be* and the “resultative participle”. Both the participle and the verbal construction which is built around it express the result of a process.

Gamble (1987:29) classifies the *-riŋ* participle as a “present participle”. Therefore, he defines that the RII formation as a continuous present, being common with so-called descriptive verbs: *A be deerŋ* ‘He is silent’, *A be looriŋ* ‘He is standing’, *Moolu bee be hawujiriŋ* ‘All the people are hurrying’ or *A be sinandiŋ* ‘He is wet’ (Gamble 1987:15). When a dynamic action is to be conveyed, other continuous grams should be used, for instance, the nominal LA construction. Gamble observes that a continuous action expressed by the RII form may also be located in the past: *Mansa be siiriŋ* ‘The king was sitting’ (Gamble 1987:15). Gamble provides a remarkable example where the RII gram (although, in his view, a continuous past) approximates the category of a durative past: *Kari fula a be laariŋ* ‘He was lying (ill) for two months’.

Similarly, Lück & Henderson (1993:42), Colley (1995:15, 18) and WEC (2002) classify the RII form as an expression of continuous states and activities. Namely, on the one hand, they detect a static or circumstantial sense, common with adjectival bases: *A be koyiriŋ* ‘It is white’, *A be findiŋ* ‘It is black’, *A be sutuyaariŋ* ‘He is short’, *A be nunkuriŋ* ‘He is fat’ and *Ñiŋ bukoo be beteyaariŋ* ‘This book is good’. On the other hand, they identify certain readings which seem to be slightly more dynamic: *Faatu be looriŋ* ‘Fatu is standing’ or *Baagoo be dendiŋ* ‘The bag is hanging’ (Colley 1995:18).

<sup>178</sup> The term ‘fientive’ makes reference to a dynamic action performed by the subject. Fientive verbs are typically dynamic and/or action (and thus, non-static and non-adjectival) predicates (cf. Waltke & O’Connor 1990:371 and Williams 2007:57).

Consequently, the meaning of the RII formation has usually been classified either as a stative (it expresses a state, a condition or a circumstance; Macbrair 1842, Creissels 1983a, Lück & Henderson 1993, Colley 1995 and WEC 2002) or a continuous aspect (Hamlyn 1935, Gamble 1987, Lück & Henderson 1992, Colley 1995 and WEC 2002). These two main values – usually viewed as exclusive<sup>179</sup> – seem to be found in present and past time frames. On the contrary, no clear statement with respect to a possible future temporal reference of the RII form has been formulated. Additionally, either implicitly or explicitly, the RII gram is regarded as void of any resultative undertone (see especially Creissels 1983a; compare, however, Creissels & Sambou 2013). Finally, albeit “involuntarily” (i.e. due to provided examples), certain scholars suggest other possible senses, e.g. the durative past, the habitual past and even the inclusive perfect.

### 3.4.1.2 Evidence from Basse

One of the most regular functions of the RII gram in Basse Mandinka is to convey a stative meaning. The locution denotes a state or a condition in which the subject of the RII clause remains. Although this non-dynamic sense persists in a broad variety of contexts and with an immense majority of roots – being found alone or as a semantic component that accompanies the total, more complex, information conveyed by the RII form on a concrete occasion (cf. below in this section) – it is the adjectival verbs that convey it in the most regular manner. To be exact, adjectival predicates in the RII gram typically denotes stative qualities of the subject:

- (3.67) a        A        **be**        **saasaariŋ**  
                   he        NVP    be.sick-PART  
                   ‘He is sick’
- b.        I        la        dendikoo        **be**        **findiŋ**  
                   you    of        shirt            NVP    be.black-PART  
                   ‘Your shirt is black’

In this way, adjectival verbs in the RII form seem to interact with their TA forms. In the RII gram, adjective roots regularly offer a non-dynamic stative sense comparable to predicatively used adjectives in Indo-European languages.<sup>180</sup> In order to express a dynamic resultative value in a more explicit manner, one employs adjectival verbs in the TA formation. To illustrate this fact, two uses of the verb *koyi* ‘be white’ can be compared in the sentence below (cf. example 3.68). While the expression *be koyiriŋ* indicates a general persistent quality of the shirt (its colour is white), the locution *maŋ koyi* (the negative variant of the TA gram *koyita* ‘is white, clean’) denotes a transitory recently acquired condition (it is not white right now, i.e. it is not clean):<sup>181</sup>

<sup>179</sup> This means that linguists have frequently classified the gram either as a stative or a continuous.

<sup>180</sup> One should note that *-riŋ* participles derived from adjectival verbs can also be used as attributive adjectives, again fully comparable to Indo-European adjectives which typically express non-dynamic qualities.

<sup>181</sup> However, for many verbs there is no such difference. For example, the expressions *a be bataariŋ* and *bataata* in a particular context can mean the same, i.e. that someone is tired. If there is a difference between them in this

- (3.68) I la dendikoo **be koyiriŋ** bari saayiŋ a maŋ koyi  
 you of shirt NVP be.white-PART but now it MAID be.white  
 ‘You shirt is white but now it is not white (clean)’

Various intransitive activity verbs likewise quite regularly provide a stative reading, alongside a non-stative present value, akin to a continuous sense (cf. below in this section):

- (3.69) a. M **be silariŋ** ñiŋ na  
 I NVP fear-PART this of  
 ‘I am scared of this / I fear this’  
 b. M **be suulariŋ** ñiŋ na  
 I NVP need-PART this of  
 ‘I am in need of this / I need this’

On certain occasions, however, even though the RID form is derived from adjectival or static verbs, the present (current) quality of the subject may be understood as resulting from a previously performed action. In such cases, the reading seems to be slightly more fientive or actional. Namely, the semantic component of a current state suggests that this present condition has emerged due to the prior performance of a dynamic activity. In this manner, the gram approximates a resultative stative category:

- (3.70) a. Samaa naata. M **be sinandiŋ** saayiŋ!  
 rain has.come I NVP be.wet-PART now  
 ‘It has rained. I am wet/soaked now! (because I have become / got wet)’  
 b. Ða a fita. Bari a **be nooriŋ** saayiŋ!  
 I.did it sweep but it NVP be.dirty-PART now  
 ‘I (has) swept it. But it is dirty now! (because it has become / got dirty)’

Apart from its common stative uses, the RID gram likewise frequently introduces the sense of a resultative proper. This usage is typical of intransitive predicates that possess a transitive counterpart. To be exact, such verbs – which can be viewed in the RID formation as de-transitive counterparts of the underlying transitive roots – most typically convey a resultative proper meaning in the RID gram, thus expressing that a certain state results from a previously performed action. In such cases, both components of the semantics of the gram – i.e. a prior event (a dynamic activity) and a posterior result (a stative quality or condition) – are equally relevant (cf.3.71.a-b). Similarly, the verbs of motion, i.e. predicates that express the idea of movement towards or from a place, when employed in the RID construction, commonly indicate the condition of the subject, understood as acquired due to the accomplishment of the action denoted by the underlying verb. In other words, they may provide a resultative proper value, where both the resultant state and the action from which that state has emerged are

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concrete context, it stems from the total semantic potential and, especially, from the prototypical meanings associated with these forms (cf. chapter 7).

equally important in the information conveyed by the utterance (3.71.c-d). In this function, the RII gram should not be confounded with the category of a dynamic resultative perfect, a sense that is typically conveyed in Basse Mandinka by the TA and YE<sub>1</sub> constructions: *a naata* ‘he has come’ and *a ye a ke* ‘he has done it’. While the resultative proper contains two evenly relevant semantic components (i.e. a prior action and an ensuing state), the resultative perfect highlights the dynamic event whose effects are still available and relevant to the current situation.

- (3.71) a. Motoo **be** **katiriŋ**  
 car NVP be.broken-PART (vs. **a kati** ‘break (it)’)  
 ‘The car is broken (because someone has broken it)’
- b. Bundaa **be** **sorondiŋ**  
 door NVP be.closed-PART (vs. **a soronŋ** ‘close (it)’)  
 ‘The door is closed (because someone has closed it)’
- c. Dindiŋo **be** **boyiriŋ**  
 child NVP fall.down-PART  
 ‘The child in on the floor (because he or she has fallen down)’
- d. A **be** **sayiriŋ**  
 he NVP return-PART  
 ‘He is back (because he has returned)’

In addition, the resultant state may be interpreted as a currently ongoing (progressive or continuous) activity. In such cases, resultative connotations and undertones are weakened, failing to be pertinent for the entire situation. This usage is relatively common with motion verbs such as *naa* ‘come’ and *taama* ‘travel’, where the gram offers a progressive reading, indicating an ongoing dynamic process rather than a static situation or non-dynamic activity:

- (3.72) a. A **be** **naariŋ**  
 he NVP come-PART  
 ‘He is coming’
- b. I **be** **taamariŋ** minto?  
 you NVP travel-PART where  
 ‘Where are you traveling to?’

The non-stative present senses – either more dynamic (3.73.a-c) or less dynamic (3.73.d-f), depending on the lexical nature of the verb – are quite common with intransitive activity verbs. In such instances, the stative reading and, in particular, resultative connotations are significantly weakened or simply absent:

- (3.73) a. M **be** **bibiriŋ**  
 he NVP stammer-PART  
 ‘He is stammering’
- b. A **be** **faniyaariŋ**

- he NVP lie-PART  
'He is lying'
- c. Saayin, a **be** **sabatiriŋ** Basse  
now he NVP living-PART Basse  
'Now, he is living in Basse'
- d. M **be** **lafiriŋ** ki taa Banjunu  
I NVP want-PART to go Banjul  
'I want to go to Banjul'
- e. Wo tumoo m **be** **looriŋ** hoteloo daala  
that time I NVP stand-PART hotel close.to  
'At that time, I was standing by the hotel'
- f. Ì bee **be** **hameriŋ** ne ka a ke  
they all NVP desire-PART FOC to it do  
'All are eager to do it / want to do it'

The non-stative present value is especially palpable in the case of the verb *ke* 'happen, occur', which provides a dynamic progressive sense (3.74.a-b). However, even with this predicate, less dynamic readings are also possible (3.74.c-d). In addition, certain reflexive verbs that may be found in the RII formation also select a dynamic, progressive present interpretation rather than the value of a state (observe the use of the reflexive pronoun in 3.74.d which shows that the interpretation cannot be genuinely stative):

- (3.74) a. Muŋ ne **be** **keriŋ**?  
what FOC NVP happen-PART  
'What is happening?'
- b. Tabiroo **be** **keriŋ**  
cooking NVP happen-PART  
'Cooking is going on'
- c. Wo tumoo konkoo **be** **keriŋ**  
that time hunger NVP happen-PART  
'At that time, people suffered hunger'
- d. Kendoo **be** **keriŋ** saayin  
heat NVP happen-PART  
'It is hot now'
- e. M **be** n **dondiŋ**  
I NVP REFL dance-PART  
'I am dancing'

Quite commonly, the condition of the subject or the activity that is being performed is portrayed as actual at a given reference time, i.e. as restricted to or pertinent for the current state of affairs. This nuance of actuality or ongoingness especially holds true for cases where the resultative proper and resultative stative senses are patent (3.75.a). However, it is also

common with stative (3.75.b) and non-stative (especially, progressive) readings (see 3.74.a-b, above).

- (3.75) a. Daalu **be** **sorondiŋ** saayinŋ  
 doors NVP be.locked-PART then  
 ‘The doors are locked now’
- b. Kewo ñinŋ **be** **kamfaariŋ** saayinŋ  
 man that NVP be.angry-PART now  
 ‘The man is angry now’
- c. Kendoo **be** **keriŋ** saayinŋ  
 heat NVP happen-PART now  
 ‘It is hot now’

Nevertheless, on determined occasions – and especially where no resultative value is evident – a given situation or activity may be portrayed not as actual but rather as temporarily extended, i.e. as not limited to or relevant only for the current state of affairs. In such cases, the depicted event or condition can be durative (spanning larger periods of time; 3.76.a-c) or persistent (referring to the subject’s general and constant characteristics or conditions; 3.76.d). One should, for instance, observe that in example 3.76.e, the RID formation is found in the company of the KA construction, which commonly expresses habitual, constant and perpetual facts.

- (3.76) a. Seruŋ m **be** **kuurandiŋ** kari fula  
 last.year I NVP be.sick-PART month two  
 ‘Last year, I was sick for two months’
- b. Ñinaŋ Maalik **be** **taamariŋ** baake  
 This.year Maalik NVP travel-PART a.lot  
 ‘Malik travels a lot this year’
- c. Ñinaŋ a **be** **sabatiriŋ** Basse  
 this.year he NVP live-PART Basse  
 ‘This year, he lives is Basse’
- d. Tubaabulu bee **be** **jawuyaaŋ**  
 white.people all NVP be.wicked-PART  
 ‘All whites are wicked’
- e. M̂ **be** **baluuriŋ** ne aniŋ ñ ka taama  
 we NVP live-PART FOC and we do walk  
 ‘We live and move’

Additionally, all the roots in the RID gram may be used with the force of an inclusive perfect, denoting that a given situation or activity began in the past but has been continuing into the present. In this manner, the formation once more expresses durative activities, whose time spans from a moment in the past to the enunciator’s present. One should, however, note that the dynamic value of a genuine inclusive perfect is found only in the case of motion verbs

and intransitive activity verbs (3.77.a-b). De-transitive verbs usually convey the value of an inclusive resultant state (i.e. a state, which results from a previous action, has been holding from a moment in the past to the present; 3.77.c), while adjectival roots denote an inclusive simple (non-resultative) state (3.77.d).

- (3.77) a. A **be laariŋ** jaŋ kari fula  
 he NVP lie.down-PART here month two  
 ‘He has been lying here for three months’
- b. Kabiriŋ Diisemba m **be jiyaariŋ** Basse  
 since December I NVP lodge-PART Basse  
 ‘I have been lodging in Basse since December’
- c. A **be londiiŋ** kabiriŋ duniyaa foloodulaa  
 it NVP be.known-PART since world beginning  
 ‘It has been known from the beginning of the world’
- d. A **be kuurandiŋ** kabiriŋ dimaasoo  
 he NVP be.sick-PART since Sunday  
 ‘He has been sick since Sunday’

Lastly, the temporal reference of a given state, condition or activity may be either the present (3.78.a) or the past (3.78.b). In contrast, it is usually not possible to use the RID gram within a future time frame (3.78.c). In order to employ participles in *-riŋ* in a future temporal sphere and, thus, in order to provide resultative, stative or non-stative future meanings, the verb *tara* ‘be, remain’ (instead of the predicator *be*) in the so-called LA construction or in other “future-like” expressions must be employed (3.78.d; concerning the LA gram, see section 4.1):

- (3.78) a. A **be siinooriŋ** saayiŋ  
 he NVP sleep-PART now  
 ‘He is sleeping now’
- b. Kunuŋ talaŋ 8:30 a **be siinooriŋ**  
 yesterday hour 8:30 he NVP sleep-PART  
 ‘Yesterday at 8:30, he was sleeping’
- c. \*Kana naa saama! Saama, talaŋ 8:30 m **be siinooriŋ**  
 do.not come tomorrow! Tomorrow, hour 8:30 I NVP sleep-PART  
 ‘Do not come tomorrow! Tomorrow at 8:30, I will be asleep’
- d. A **be tara la siinooriŋ**  
 he NVP remain to sleep-PART  
 ‘He will be asleep’

### 3.4.2 Dynamic map

The evidence shows that the semantic potential of the RID formation consists of the following specific components: the resultative proper, the resultative stative, the stative, the

non-stative (including more dynamic senses such as the continuous or the progressive), and the inclusive perfect. The stative (and less so resultative stative) sense seems to be highly frequent. It is typical of adjectival verbs, which are almost invariably employed in the stative function, introducing qualities of the subject. The resultative proper sense is likewise common, being characteristic of motion verbs and especially of de-transitive verbs, i.e. intransitive verbs that possess transitive equivalents. The non-stative senses (e.g. continuous and progressive) are mostly found with verbs of motion and intransitive activity verbs. All of the mentioned values can be located in the present and past temporal spheres. Furthermore, the situation or activity expressed by the RIO gram can be actual (ongoing), extended (durative) or permanent (persistent). Additionally, all types of verbs may be used with the sense of an inclusive perfect in which, once more, the duration is profiled.

Having determined the range of the semantic potential of the RIO gram, the following question arises: how can we design a coherent model of the meaning of this construction in the form of an interconnected network? The evidence shows that the stative and resultative-proper values are of key importance in the semantic potential of the RIO formation. As explained in section 1.2.3.2, these two senses are typical of grams developing along the resultative cline – the resultative proper sense is the diachronic and conceptual nucleus of the entire resultative trajectory, while the stative value corresponds to one of the stages that are characteristic of the simultaneous cline. This suggests that the RIO construction may be a type of an original resultative locution constituting an example of a gram that travels along the resultative path. Before offering the mapping of the RIO form, the structure of the resultative cline and, in particular, of the simultaneous cline will be recalled. In this manner, it will be evident that this is the path that should be used in order to network and unify the semantic potential of the RIO formation.

According to the resultative path, resultative inputs may undergo a complex development into two distinct directions, being gradually converted into past or present tenses. The former value emerges as a consequence of the anterior path, whereas the latter is a product of the simultaneous trajectory. The anterior path states that resultative proper grams first develop into perfects (of which the inclusive perfect stage is the first one) and, next, into perfectives, and finally non-perfective past tenses. The simultaneous path states that certain resultative proper grams develop into a resultative stative present, then into a stative present and finally into a non-stative (general or simple) present tense. The transformation of resultatives into present tenses and, thus, the evolution along the simultaneous cline typically affects static predicates or verbs whose resultative uses can logically trigger stative readings (e.g. sensory, emotion, perception verbs). This evolutionary scenario, moreover, shows a concurrent semantic extension from an actual situation (either currently resultant or simply available) to more persistent and permanent (and, hence, towards simple present tenses). The value of actuality is included in the original resultative proper locution which indicates results that are currently available (i.e. at a given reference time) and cognitively pertinent to the speaker's here-and-now. Afterwards, the actuality gives way either to duration and/or persistence (for details, see section 1.2.3.2).

Bearing in mind the diachronic model of the two trajectories that determine the grammatical life of resultative proper inputs, it is possible to propose an order in the semantic

network of the RII gram by connecting all the senses and indicating its input (historically more original) and output (historically posterior) values.

To begin with, the actual resultative proper could be regarded as the proto-meaning, i.e. as the original value of the RII gram from which other values located on the resultative path have emerged. As mentioned previously, the resultative proper value is still highly common among the senses offered by the RII form, being characteristic of de-transitive predicates and motion verbs. Nevertheless, the fact that the RII construction is compatible – at least to a certain degree – with the value of an inclusive perfect indicates the gram has advanced on its developmental cline, acquiring the first subsequent stage of the anterior cline. As explained, the inclusive perfect sense is the first phase – located immediately after the stage of a resultative proper – on the anterior trajectory, which typically applies to underlying dynamic verbs. However, one should remember that, in Basse Mandinka, the genuine inclusive dynamic value is available only in the case of motion and intransitive activity verbs, while the underlying transitive bases are regularly employed in a de-transitive non-dynamic manner, characteristic of resultative proper grams. In other words, with de-transitive verbs, it is the resultative proper value that receives an inclusive interpretation: a resultant state continues from a moment in the past to the present.<sup>182</sup> Accordingly, the anterior cline enables us to account for and connect three senses conveyed by the RII form: the resultative proper (highly common), the inclusive resultative proper (relatively common) and the inclusive perfect (with a few types of verbs)

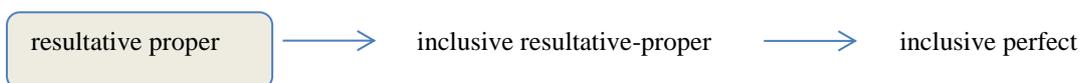


Figure 3.17: The map of the RII gram – senses belonging to the anterior path

As has been explained previously, while dynamic roots in resultative expressions tend to develop by following the anterior cline, in comparable constructions, static and adjectival predicates usually acquire senses located along the simultaneous path. It is therefore not surprising that the RII gram formed from adjectival bases regularly offers a stative sense and – although less commonly so – its diachronic and conceptual predecessor, viz. a resultative stative value. Less frequently, the RII formation offers a value of the non-stative (durative, continuous, permanent or even progressive) present, which constitutes the final stage of the simultaneous cline. However, rather than being non-prototypical, this sense seems to ascend to the degree of semi-prototypicality. Consequently, the three senses can be mapped in the following way:

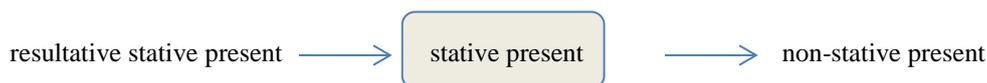


Figure 3.18: The map of the RII gram – senses belonging to the simultaneous-path

The fact that adjectival and static verbs develop along the simultaneous path, while de-transitive verbs (or intransitive counterparts of the transitive verbs) resist this developmental

<sup>182</sup> As mentioned previously, in the case of adjectival roots, it is the non-resultative state that is inclusive.

trajectory and, by providing the resultative proper sense (and the inclusive perfect value), are being attracted to the anterior cline, confirms the dynamic definition of the RII construction in terms of a resultative-path gram. Such a split constitutes a strong typological tendency: crosslinguistically, transitive dynamic verbs follow the anterior path (observe again that in the resultative proper function such predicates are typically used in a de-transitive manner), whereas adjectival verbs select the simultaneous cline. However, it should be emphasised that in the case of the RII, certain more dynamic verbs, such as *ke* ‘occur, happen’, *tamaa* ‘travel’ or *naa* ‘come’ (some of them motion verbs), can offer senses available on the simultaneous cline, especially the value of a non-stative present (continuous, progressive, durative, etc.).

*Summa summarum*, all the senses of RII form can be networked as stages of the anterior or simultaneous clines, which are the two main sub-trajectories of the resultative path. The prototypicality zones are located in the initial areas of the two trajectories, i.e. in the stage of a resultative proper and stative (as well as in the stage of a stative past if the cline is located in a past time frame). From a dynamic perspective, the RII construction can be classified as a young or non-advanced resultative-path gram.

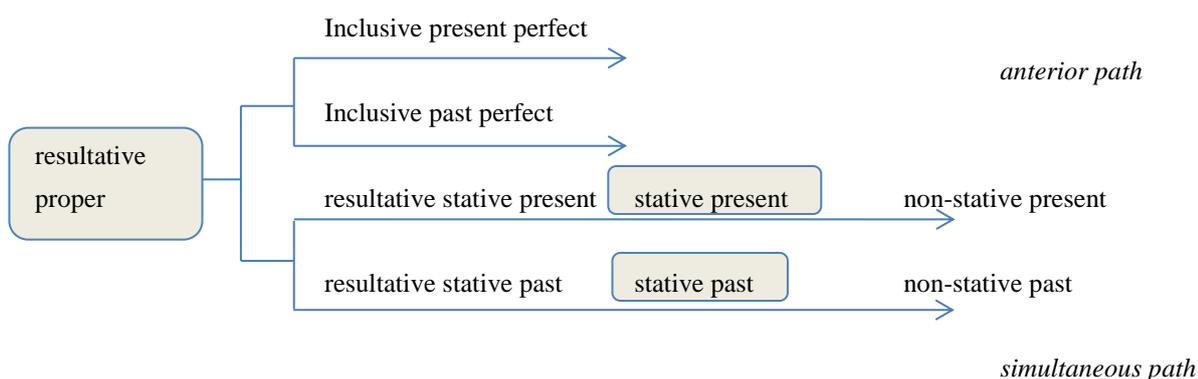


Figure 3.19: The kinetic map of the semantic potential of the RII gram

The model presented above offers a consistent and unifying explanation for the entire semantic potential of the RII form. Within this representation, the issue of whether the RII locution is a stative, a resultative proper or a continuous (non-stative) present disappears. The formation cannot be limited to any of these categories because its semantic potential covers various semantic domains which are all interconnected reflecting stages on the resultative path.

The map of the RII formation may be given the following linear representation, which is more suitable for the wave representation and the comparison of this gram with the remaining constructions evolving along the resultative path. Once more, this model has been simplified so that the linearisation and subsequent comparison of grams could be less convoluted.



Figure 3.20: Linear model of the semantic space of the RII gram

To conclude, the two-dimensional wave model of the RII gram can be designed in the following way:

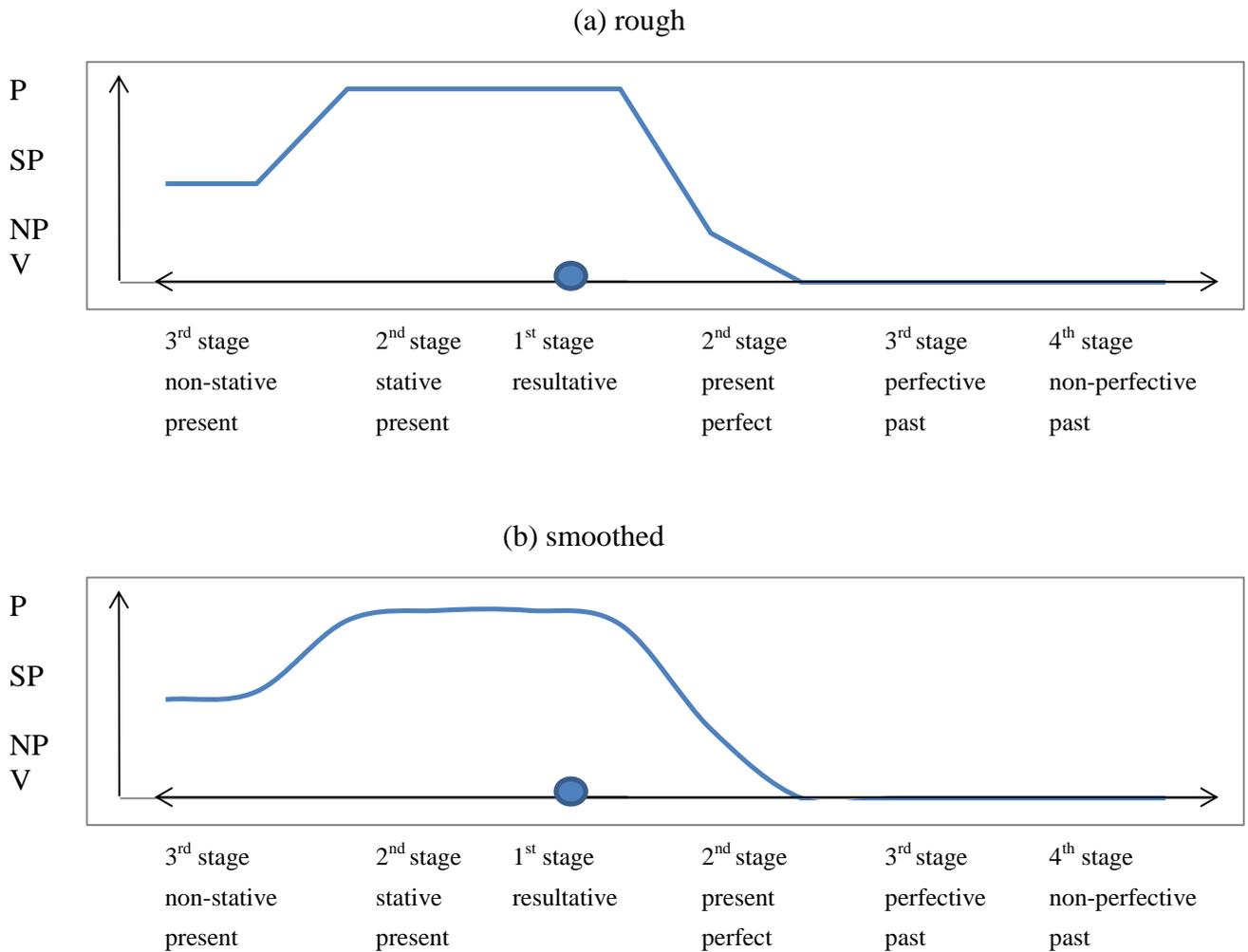


Figure 3.21: Wave model of the semantic space of the RII gram<sup>183</sup>

The definition of the RII form in dynamic terms as a non-advanced resultative-path gram can additionally be corroborated by its formal and/or morphosyntactic properties. As indicated at the beginning of section 2.4, the RII formation is a predicative periphrasis built around the participle in *-riŋ* that is linked by means of the non-verbal predicator *be* to the

<sup>183</sup> The allocation of the non-stative present sense to a precise degree of prototypicality is quite difficult. This value is not frequent, but it is not particularly infrequent either, especially given that it may appear with a variety of predicates, i.e. dynamic, motion or activity verbs. In this respect, more statistically driven research is needed. The only statistical data which I have concern the resultative proper and inclusive perfect uses of the RII gram (cf. Andrason forthcoming (d)).

subject. The participle itself offers an exemplary intransitive and/or de-transitive value (cf. Creissels & Sambou 2013:133). With intransitive roots it indicates the quality of the subject of the verb while with underlying transitive bases it regularly exerts a de-transitive effect, indicating the condition of the underlying object (i.e. the object of the transitive verb from which the participle is derived). Inversely, it is impossible to form *-riŋ* participles that would be transitive. Such behaviour is typical of resultative participles or, under a wider definition, resultative verbal adjectives. According to typological studies, resultative participles or resultative verbal adjectives and thus, resultative proper grams built around them, commonly display a non-agentive character, exerting a de-transitive effect on the underlying verbs (Haspelmath 1994:159 and Nedjalkov 2001:928). Put differently, when resultative participles/adjectives are derived from underlying transitive verbs, they indicate the state of the object (the patient of the action) of that transitive verb. Thus, resultative constructions derived from such participles exhibit the change in the argument structure: the subject of the transitive verb is removed and its object placed in the subject position in the resultative expression. As explained in section 1.2.3.2, such a de-transitive force is what links resultatives to present passives.<sup>184</sup> This fact can clearly be observed in Basse Mandinka where the RII gram (and its participle) – as an exemplary resultative proper form – cannot derive transitive uses. Quite the reverse is typical: in cases where active transitive verbs are available, the locution exclusively employs their intransitive and/or de-transitive counterparts, displaying a patientive force.

Moreover, one should note that the use of a resultative (intransitive, de-transitive or patientive) participle in predicative sequences constitutes one of the most common lexical sources of resultative constructions that later develop into perfects, perfectives and pasts, or statives and presents (cf. Bybee, Perkins & Pagliuca 1994:63-67). In this manner, the RII gram would constitute an exemplary case of such a predicative resultative formation built on a resultative participle. Additionally, a different treatment of dynamic and static verbs in the RII construction also confirms the classification of the formation as an evolving resultative-path gram in the early stages of its development. As exemplary resultatives and young perfects, static roots offer senses located along the simultaneous cline, while dynamic roots are less propitious to do so, rather conveying the value of a resultative proper (compare with the analogous behaviour of the TA and YE<sub>1</sub> grams discussed in section 3.1 and 3.2).

Lastly, the definition of the RII gram in terms of an initial portion of the resultative path is corroborated by the properties of cognate forms in related languages. In general terms, the value(s) of the cognates of the Basse Mandinka *-riŋ* participle and their use in predicative constructions akin to the RII gram are highly similar.

For example, Bambara includes in its verbal inventory a construction formed by the participle in *-len* (corresponding to the Basse Mandinka participle in *-riŋ*)<sup>185</sup> and non-verbal predicator *bé*. One should observe that the predicator usually follows the participle contrary to the word order in Basse Mandinka. This periphrasis is defined as a resultative formation

<sup>184</sup> This relation may also be perceived in the fact that in certain languages, resultatives and passives of transitive verbs display the same form or that the passive is employed to express the resultative meaning (so-called ‘statal passive’; Maslov 1988 and Nedjalkov 2001:937).

<sup>185</sup> Compare a similar resultative suffix *-lé* in Vai (Tröbs 2014:121-122).

with two principal senses: resultative proper (*É bolo` fallen bé belekísew lá* ‘Ta main est remplie (est pleine) de graviers’; Idiatov 2000:36) and stative (*Kùnkólo` fálen bé kùnkoloséme` lá* ‘Le crâne est rempli de cervelle’; *ibid.*; see also Dumestre 1979, 1987, Blecke 1988/2004:69-70, Idiatov 2000:29, 35-38 and Dumestre 2003). The participle in *-len* itself is viewed as a resultative participle (Blecke 1988/2004:70), completive participle (Idiatov 2000:29, 35) or “accompli” participle with two possible readings: resulting state and simple (i.e. non-resulting) state (Vydrin 1999a:87).

A similar construction is found in Kita Maninka. This language has a fairly well grammaticalised resultative expression composed of the nominal or pronominal subject and the resultative participle in *-niŋ*, cognate of the Basse Mandinka *-riŋ* form. This construction is equivalent to the formation found in Basse with the exception that the subject and the participle are simply juxtaposed without the use of any copulative element similar to the Basse Mandinka *be*: *Sékù nàniŋ* ‘Seku has come’, *À bòyiniŋ* ‘It is/has fallen’ or *Yìrì tégèniŋ* ‘The tree has been cut’ (cf. Keïta 1984:60). According to Creissels (2009), Kita Maninka also possesses a formation composed of the element *nà-nin* (an original participial form – a possible cognate of the Basse Mandinka participle in *-riŋ* of the verb ‘come’) and *la*-infinitive or bare infinitive. This gram is used as a perfect, thus exhibiting a further grammaticalisation status than the RII construction (Creissels 2009, Vydrin 2008/2009). Of course, although this locution is derived from a participle – and, hence, coincides with the RII form – it additionally uses the motion verb ‘come’ as its auxiliary (cf. section 3.4.2 concerning the NAATA gram).

A participle that is cognate to the Basse Mandinka form is also found in Maninka of Niokolo. In this dialect, the participle in *-riŋ*, *-liŋ* or *-diŋ* typically offers a resultative value and it is used in predicative constructions with the non-verbal predicators *be/te* in order to denote a resulting state in which the subject remains (Creissels 2013b:62, 70). However, in contrast to Basse Mandinka and many other dialects, in Maninka of Niokolo, this formation also admits transitive constructions: *Á te á lon-diŋ* ‘He does not know (it)’ or *Á be ŋ kón-diŋ née* ‘He hates me’ (Creissels 2013b:71), which may indicate a greater degree of grammaticalisation. Sometimes, the construction can be used with an ongoing force *Álu be múŋ múta-riŋ jáŋ?* ‘What are you doing here?’ in agreement with a similar meaning offered by some predicates in the RII gram in Basse. In addition, the Niokolo Maninka formation can be employed with the verb *náa* ‘come’ to express the idea of future imminence: *Jìy-o be náa-riŋ née saañiŋ* ‘It is going to rain now’ (*ibid.*).

Bambara of Kolona provides further cases of the development of perfect(ive) and/or past constructions from resultative participles. To be exact, in this dialect, the resultative participle in *-(l)en* was used as the basis for the “Accompli I” (transitive *nyó(n)* and intransitive *-nyé*) and “Accompli II” (only intransitive) grams, which are principal forms of conveying the ideas of a present perfect, a perfective past and a simple past, e.g. *\*à nàlen yé > à nàanye* (Dumestre & Hosaka 2000:16, 19).

Similar formations may be found in Jula and Koranko. In Jula, the form in *-nin* expresses anterior and punctiliar processes, and functions as a perfect, a past and/or a pluperfect: *á ná-nin* ‘he came’ (Braconnier 1991:29).<sup>186</sup> In Koranko, the participle in *-ne/ni*

<sup>186</sup> In Jula, there is also a “past participle” in *-niŋ* (Braconnier 1991:41; on Jula, see also Kastenholz 1979).

can be used with no introductory predicator as a perfect (Kastenholz 1983, 1987).<sup>187</sup> Yet other cases of the cognate participial forms – once more used with a resultative, a stative and/or a perfective sense – may be found in Jeri and in Maninka of Guinea (Tröbs 1998, Vydrin 1999b:95, Kastenholz 2001:71).

To conclude, the semantic and formal properties of the RII gram in Basse Mandinka, as well as the characteristics exhibited by its cognates in related languages strongly suggest that this formation is a resultative-path gram in an initial stage of its development.

### 3.5 The BANTA gram<sup>188</sup>

The last formation analysed in this chapter, is the BANTA gram. This construction, exemplified in 3.79 below, consists of the auxiliary *banta* – originally the verb *baŋ* ‘be finished, end’, employed in the TA form – and the base of a lexical verb:

- (3.79)           A       **banta**           a       **ke**  
                   he     BANTA           it     do  
                   ‘He may have done it’

The BANTA gram can appear in intransitive (including de-transitive ones; 3.80.a) and transitive (3.80.b) constructions:

- (3.80) a.       Jiyo   **banta**           **miŋ**  
                   water BANTA           be.drunk  
                   ‘The water may have been drunk’  
           b.       A       **banta**           jiyo           **miŋ**  
                   he     BANTA           water         drink  
                   ‘He may have drunk water’

As outlined in the previous examples, the primordial component of the BANTA locution is the verb *baŋ* that when used as a non-auxiliary main verb conveys the idea of being finished or ending. In cases where it stands in the TA formation, it provides – as expected – intransitive resultative proper (‘it is finished’; 3.81.a), present perfect (‘has been finished’; 3.81.b) and past senses (‘got finished/ran out of’; 3.81.c):

- (3.81) a.       Kinoo           **banta**           feren           saayin  
                   food           be.finish-TA   completely   now  
                   ‘Now, the food is completely finished’  
           b.       Sigareetoolu **banta**           m     bulu   siiña   fula   bii  
                   cigarettes   be.finish-TA   me   at     time   two   today

<sup>187</sup> In negative, *má* comes after the participle contrary to the situation found with adjectives where it is placed before (Kastenholz 1983:60-61).

<sup>188</sup> This section reproduces parts of my article “Semantic network of the Basse Mandinka BANTA form” published in *Jezikoslovlje (Linguistics)* 14/1 (cf. Andrason 2013e).

- ‘I have run out of cigarettes twice today!’
- c. Sigareetoolu **banta** m bulu kunuŋ  
cigarettes be.finish-TA me at yesterday  
‘I ran out of cigarettes yesterday’

It is also possible to employ the predicate *baŋ* in the TA form with the force of a pluperfect (‘had been finished’) or a resultative past (‘was finished’; cf. 3.82.a) and – exclusively in determined subordinate clauses – as a future perfect (‘will have been finished’; cf. 3.82.b):

- (3.82) a. Kabiriŋ n naata jee kinoo **banta** nuŋ  
when I came there food be.finished-TA then  
‘When I came, the food had been finished / was finished’
- b. Ì te a domo la foniŋ m **banta**  
you NEG.NVP it eat to unless I be.finished-TA  
‘You will not eat until I have finished / until I am finished’<sup>189</sup>

The root *baŋ* ‘be finished, end’ may also appear in a periphrasis with a verbal noun, derived from another lexical verb and introduced by the postposition *la* ‘to, at’. This locution – schematised as [*baŋ* + verbal noun + *la*] – indicates that the subject is done with doing something. When the predicate *baŋ*, itself, is employed in the TA formation, the taxis, aspectual and temporal values of this entire analytic locution stand in harmony with the senses provided by the TA gram and the *banta* verb that have been discussed above. This means that the construction mainly expresses resultative proper (3.83.a), present perfect (3.83.b), past (3.83.c) and pluperfect (3.83.d) nuances.<sup>190</sup> It should, however, be noted that the resultative value is the one that is most commonly encountered.

- (3.83) a. M **banta** domoroo la!  
I be.finished-TA eating with  
‘I am done with eating!’
- b. M **banta** tabiroo la kabiriŋ talaŋ saba  
I be.finished-TA cooking with since hour three  
‘I’ve been done with cooking since three o’clock’
- c. A **banta** saferoo la talaŋ seyi  
he be.finished-TA writing with hour seven  
‘He finished writing at seven o’clock’
- d. Kunuŋ kabiriŋ m **banta** diyaamoo la,  
yesterday when I be.finished-TA talking with,  
‘Yesterday, when I had finished talking,  
a ko n ye ko:

<sup>189</sup> The English language employs here a present perfect form (or a simple present form) although the expressed action makes reference to a future event that precedes another future action. It is, thus, a typical future perfect sense and context.

<sup>190</sup> It is likewise possible to construct a context where the expression conveys past stative and – very infrequently – future perfect values.

he said me to saying:  
he said to me:...'

## 2.5.1 Semantic potential

### 2.5.1.1 Grammatical tradition

Traditional scholarship has almost entirely ignored the study of the semantics of the BANTA formation. Only WEC (1995:11) superficially mentions the *banta* entity and classifies it as an auxiliary verb employed in speculations about past actions. Other works unfortunately pay no attention to this gram, which – as will be evident from the subsequent discussion – is a common and important component of the Basse Mandinka verbal system (see however, Creissels 1997b).

### 2.5.1.2 Evidence form Basse

Generally speaking, the BANTA locution introduces assumptions, speculations or suppositions with respect to present and past activities or states of affairs. Within this broad modal domain, it is possible to distinguish three main sub-groups of senses: evidential, inferential and epistemic. To begin with, the evidential class of meanings will be discussed.<sup>191</sup>

On certain occasions, the BANTA gram is used with an evidential force, approximating the category of a “guessing” gram. In this function, the speaker deduces from available physical and tangible facts that a given action, personally non-witnessed, must have occurred or that a present situation is occurring. This means that although the enunciator has not witnessed a particular activity or state, he assumes that it has taken place or currently takes place because certain results, still palpable, suggest it.

With respect to the domains of taxis and time, the evidential value of the BANTA form may refer to a previous activity whose effects are still currently relevant. Accordingly, the BANTA construction constitutes an evidential variant of the TA and YE<sub>1</sub> forms in the function of a present perfect.

- (3.84) a.     A     **banta**     **taa**     suwo   kono  
          he     BANTA     go     house in  
          ‘He must have gone home / I guess they have gone (I guess they are not here)’  
      b.     A     **banta**     **bo**     saayinj

<sup>191</sup> Even though evidentiality is sometimes regarded as a distinct category, it will be treated as a subset of modality. The relation between modality and evidentiality has widely been recognised: evidentials quite frequently give rise to various modal extensions and, inversely, various modal expressions acquire evidential readings (cf. Givón 1994, Bybee, Perkins & Pagliuca 1994, Aikhenvald 2004 and Mortelmans 2007:870-871). Furthermore, given the cognitive, grammaticalisation and typological orientation of this dissertation, the labels ‘evidential’, ‘inferential’ and ‘epistemic’ are preferred instead of ‘inferentive’, ‘presumptive’ and ‘probabilitive’, respectively, because the former – and not the latter – have extensively been employed in modern cognitive, grammaticalisation and typological studies (cf. Bybee, Perkins & Pagliuca 1994, Wierzbicka 1994, Floyd 1999, Dahl 2000b, Nurse 2008, Aikhenvald 2004, Haspelmath et al. 2001, Mortelmans 2007, Bybee 2010, Dixon 2010 and De Haan 2011).

he BANTA leave now  
 ‘He must have left now / I guess he has left (I guess he is not here)’

However, the evidential sense may likewise make reference to a present situation, portrayed either as a resultative stative or as a pure stative. This typically occurs when the locution is derived from adjectival and static roots (3.85.a-b). In this manner, the BANTA gram constitutes an evidential counterpart of the stative (both resultative and non-resultative) value of the TA formation (and less so of the YE<sub>1</sub> construction). An evidential non-stative present sense is also possible; for instance, if the verb *lafi* ‘to want’ is employed in the BANTA gram (3.85.c).

- (3.85) a. A maŋ naa! A **banta** **saasaa**  
 he has.not.come he BANTA be.sick  
 ‘He has not come. He must be sick / I guess he is sick’
- b. A maŋ naa! A **banta** **bataa**  
 he has.not.come he BANTA be.tired  
 ‘He has not come. He must be sick / I guess he is tired’
- c. A **banta** **lafi** a la  
 he BANTA want it at  
 ‘He must like it’

Closely related to the above-mentioned resultative stative usage are instances where the BANTA gram displays an evidential resultative proper sense. In this case, however, the predicate used in the BANTA expression, instead of being static or adjectival, tends to constitute a de-transitive counterpart of an active dynamic verb (cf. *soo* ‘be punctured’ vs. *a soo* ‘to puncture something’):

- (3.86) Ponoŋjo be feeteeriŋ. A **banta** **soo**  
 tire NVP flat it BANTA be.punctured  
 ‘The tire is flat. It must be punctured / I guess it is punctured’

Probably less common are evidential examples where the BANTA gram is employed with reference to explicit past events (either perfective or non-perfective) or past situations (especially, stative):

- (3.87) a. A fele! A be bataariŋ bii  
 him look.at he NVP being.tired today  
 ‘Here is he! He is tired today.  
 A **banta** duloo **miŋ** kunuŋ  
 he BANTA alcohol drink yesterday  
 He must have drunk [alcohol] yesterday / I guess he got drunk yesterday’
- b. Kunuŋ a maŋ naa. A **banta** **kuuraŋ**

yesterday he did.not come he BANTA be.sick  
 ‘He did not come yesterday. He must have been sick / I guess he was sick’

Even less frequent are uses where the deduction refers to an event that preceded another past action, corresponding to a pluperfect sense of the TA and YE<sub>1</sub> grams:

- (3.88) Kunuŋ soomandaa n taata Laamini yaa.  
 yesterday morning I went Lamin to  
 ‘Yesterday morning I went to see Lamin.  
 A te suwo kono. A la motoo te jee fanan  
 he NEG.NVP house in he of car NEG.NVP there also  
 He was not at home. His car was not there either.  
 A **banta** **taa** nuŋ marisewo to  
 he BANTA go then market to  
 He must have gone to the market / I guessed he had gone to the market’

The second class of modal meanings includes cases where an inferred prior action or current state is not derived from perceptible or tangible phenomena, but is rather deduced from general assumptions, obvious for the speaker and evident in his cognitive world. In this use, the locution approximates the category of an inferential gram (cf. section 1.2.3.2).

As far as the taxis and temporal properties are involved, when the BANTA construction is derived from dynamic verbs, it has a similar force to a present perfect or to a resultative proper (3.89.a). In the case of non-dynamic predicates, the inference concerns resultative stative (3.89.b) or stative present situations (3.89.c). In the former cases, the BANTA locution constitutes an inferential variant of the TA and YE<sub>1</sub> grams in the present perfect and resultative proper functions, while in the later cases, it may be understood as an inferential equivalent of the resultative stative and stative uses of the TA form:

- (3.89) a. A la dimmusoo **banta** **futuu**  
 he of daughter BANTA get.married  
 ‘His daughter must have gotten married / I suppose, she has been married (and she is still married)’
- b. A keebaayaata bake sanji tan kooma  
 she was.old very.much year ten ago  
 ‘She was old ten years ago  
 Saayinj a **banta** **faa**  
 now she BANTA be.dead  
 She must be dead now / I suppose she is dead now’
- c. Angaliteeri mansakunda **banta** **kummaayaa** bake  
 England government BANTA be.important much  
 ‘The English government must be very important / I suppose, it is important’

Such generally inferred events or situations may also concern overtly past events and, albeit very infrequently, activities that occurred before other past actions. In these uses, the BANTA formation is an inferential equivalent of the past (perfective, non-perfective, stative and non-stative varieties) and pluperfect functions of the TA and YE<sub>1</sub> grams.

- (3.90) Laamini aniŋ Maaliki be keloo ke la kunuŋ  
 Lamin and Malik NVP fighting do to yesterday  
 ‘Lamin and Malik were going to fight yesterday  
 Doo fuloolu **banta** **faa** nuŋ  
 another the.two BANTA be.dead then  
 One of them must have been killed / I suppose one of them got killed  
 then [i.e. yesterday]’

Although evidential and inferential uses of the BANTA gram are possible, much more commonly, any connotation of the speaker’s deductive cognitive processes – whether based upon physical facts or general knowledge – is absent or, at least, irrelevant. In such instances, the BANTA construction expresses the sole idea of probability or likelihood, corresponding to epistemic periphrases with the verb *may* or *might* in the English language or to locutions with the adverb *probably*.

This epistemic value may concern previously accomplished activities that belong to the present cognitive sphere of the enunciator. In this usage, the locution behaves as an epistemic counterpart of the TA or YE<sub>1</sub> gram when these are employed with the sense of a present perfect.

- (3.91) a. Maalik **banta** **taa** Basse  
 Malik BANTA go Basse  
 ‘Malik may have gone to Basse / Malik has probably gone to Basse (i.e. he is probably there)’  
 b. Laamini **banta** dalasi 10,000 **gañee**  
 Lamin BANTA dalasi 10,000 win  
 ‘Lamin may have won 10,000 dalasi (i.e. he is probably rich now)’

However, with an equal frequency, a given hypothetical situation refers to a definite past event (perfective or non-perfective; 3.92.a) or situation (usually viewed as stative; cf. 3.92.b) with no direct link to the enunciator’s here-and-now. In this usage, the gram constitutes a modal (epistemic) variant of the definite past TA and YE<sub>1</sub> forms.

- (3.92) a. A **banta** motoo **saŋ** kunuŋ  
 he BANTA car buy yesterday  
 ‘He might have bought the car yesterday / He probably bought the car  
 yesterday (but he may have sold it back)’  
 b. Dindiŋolu **banta** **kuuraŋ** kabiriŋ a taata Banjulu  
 children BANTA be.ill when he went Banjul

‘The children might have been ill when he went to Banjul / The children were probably ill when he went to Banjul (but they may have recovered)’

This past epistemic value may be indicated overtly by means of the particle *nun* ‘then’:

- (3.93) a. A     **banta**        **naa**    Basse nun  
           he     BANTA        come   Basse then  
           ‘He might have come to Basse / He probably came to Basse’
- b.    Dindiṅolu    **banta**        **saasaa** nun  
       children     BANTA        be.sick then  
       ‘The children might have been sick / they were probably sick’

With an equal regularity, the formation expresses probability of present conditions and activities. Thus, it functions as an epistemic homologue of the TA or YE<sub>1</sub> grams in cases where these forms are employed with a resultative proper sense (typical of dynamic verbs; 3.94.a) or when they approximate resultative stative (3.94.b), stative present (3.94.c) and non-stative present categories (3.94.d; in all such cases, static or non-dynamic predicates are usually employed):

- (3.94) a. A     **banta**        **tiña**  
           it     BANTA        be.destroyed  
           ‘It may be destroyed / It is probably destroyed’
- b.    Ìtolu   **banta**        **bataa**        saayinj  
       they   BANTA        be.tired       now  
       ‘They may be tired / They are (have gotten) probably tired now’
- c.    Laamini   **banta**        **kuuraṅ**  
       Lamin     BANTA        be.sick  
       ‘Lamin may be sick / Lamin is probably sick’
- d.    A     **banta**                    a     **loṅ**  
       he   be.finished-TA        it    know  
       ‘He may know it / He probably knows it’

Finally, the idea of probability may also refer to a past event or situation that precedes another past activity, thus corresponding to the TA and YE<sub>1</sub> forms in their pluperfect usage:

- (3.95)    A     maṅ                naa    kunuṅ  
           he    did.not        come   yestreday  
           ‘He did not come yesterday
- kaatuṅ        a     **banta**        **taa**    Tubaabuduu  
           because    he    BANTA        go    Europe  
           because he had probably gone to Europe’

It should be observed that non-evidential, non-inferential and non-epistemic readings are impossible in cases where the BANTA gram is employed. This means that the locution may not be understood as a present, perfect or past category that may sometimes display certain modal extensions – there are no non-modal uses of the BANTA gram.

### 3.5.2 Dynamic map

The evidence provided in the previous section indicates that the BANTA locution offers uses that regularly employ two semantic spaces. On the one hand, as far as the modal component is concerned, the formation conveys deductive and speculative meanings, functioning as an evidential and inferential gram. Even more commonly, it expresses general suppositions, introducing the idea of probability or likelihood. In this function, it indicates that a fact might have occurred or may currently be taking place. On the other hand, with respect to the taxis, the aspectual and the temporal sphere, the locution covers domains of a present perfect, a definite past (perfective and non-perfective), a resultative proper, a resultative stative present, a stative present and a non-stative present. The resultative, perfectal and stative senses can also appear within a past time frame, yielding the uses of the form as a pluperfect, a stative past and a non-stative (durative) past. The stative and durative (both present and past) senses are normally encountered if non-dynamic (especially adjectival) verbs are employed in the BANTA gram (cf. *kuuraj* ‘be sick’, *saasaa* ‘be sick’, *lafi* ‘want’ or *a loj* ‘know’). Thus, the data demonstrate that the taxis, the aspectual and the temporal meanings conveyed by the BANTA construction are analogous to the semantic properties offered by the TA form (the verbal form in which the original auxiliary *bay* is employed) and the YE<sub>1</sub> gram. Given that – and bearing in mind the modal properties of the BANTA locution – we may affirm that the BANTA gram constitutes a regular evidential, inferential and, especially, epistemic variant of the TA (in the case of intransitive roots) and YE<sub>1</sub> (in the case of transitive roots) formations. One should note that in all concrete instances, the BANTA form combines one atomic semantic component of the modal domain (evidential, inferential and epistemic) with one atomic element of the temporal-taxis-aspectual semantic sphere (present perfect, perfective past, non-perfective past, resultative stative, stative present, non-stative present and their past equivalents). In other words, the two sets of values are always mingled, in any given empirical case.

It is possible to determine a typologically plausible path that connects the components of the meaning of the BANTA gram and that successfully unites the entire polysemy of the BANTA locution. In order to introduce coherence to the semantic potential of the BANTA form, the use of the resultative path and, more precisely, its three formative sub-clines is necessary. Two of these trajectories – i.e. the anterior and simultaneous clines – have been used before for the mapping of the TA, YE<sub>1</sub>, NAATA and RID grams. As previously explained, these two tracks constitute the pillars of the resultative path, an evolutionary scenario that governs the grammatical life of resultative proper inputs and schematises their conversion into past and present tenses. The third trajectory – viz. the evidential path used in the mapping of the NAATA gram – also belongs to the resultative path, as it codifies a developmental process during which originally resultative constructions acquire certain non-

first-hand values and modal extensions (cf. sections 1.2.3.2 and 3.3). I will explain the three, interrelated mappings of the BANTA form in more detail.

The taxis, the aspectual and the temporal values offered by the BANTA gram match the stages of the two major evolutionary trajectories established for resultative inputs, viz. the anterior and the simultaneous paths. First, the semantic components such as a present perfect, perfective past and non-perfective past correspond to consecutive phases of the anterior cline. The resultative proper sense corresponds to the conceptual and historical centre of the path from which the anterior cline and the simultaneous trajectory (cf. next paragraph) have emerged. The value of a dynamic pluperfect matches a stage of the anterior cline situated in a past time context. The zones of prototypicality are located in the areas of a resultative proper, perfect and perfective past. One should note that in contrast to the TA and YE<sub>1</sub> formations, the performative value is missing in the semantic potential of the BANTA gram. If the networking is limited to the anterior trajectory, itself, being located within a present time frame (thus, the pluperfect value is omitted), one may design the following map of the resultative, perfectal, perfective and past senses:

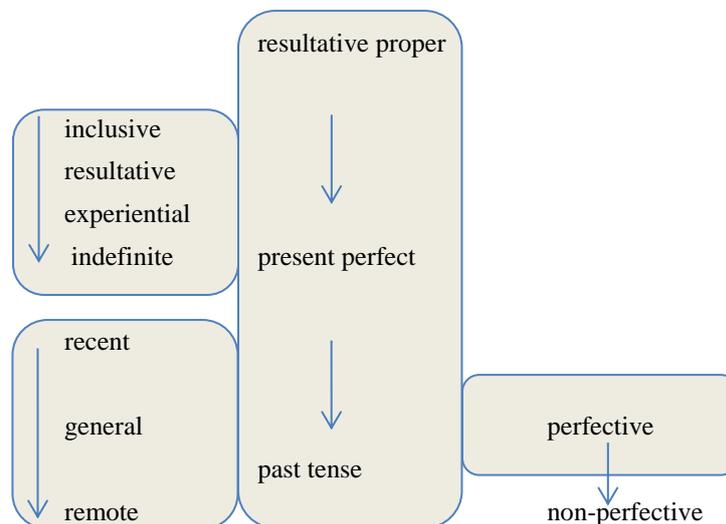


Figure 3.22: The map of the BANTA gram – senses belonging to the anterior-path

Second, the values of a resultative stative present, a stative present and a non-stative present can be mapped by means of the simultaneous cline, similarly located in a present time frame (cf. Figure 3.23). Additionally, senses such as a resultative stative past, a stative past and a non-stative (durative) past reflect stages of the simultaneous cline in the past temporal sphere. The prototypicality sphere is located in the stage of a stative (present or past).

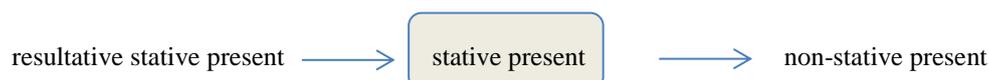


Figure 3.23: The map of the BANTA gram – senses belonging to the simultaneous-path

As the temporal-taxis-aspectual properties of the BANTA form are almost identical to those offered by the TA and YE<sub>1</sub> grams, their maps – as far as the non-modal semantic domains are

concerned – are also highly similar. *De facto*, the maps of the BANTA and TA/YE<sub>1</sub> constructions are identical with the distinction that the BANTA form seems to be incompatible with the performative use. More exactly, the map of the (abstractly separated) indicative component of the BANTA gram is a summation of the indicative maps of the TA (for intransitive verbs) and YE<sub>1</sub> (for transitive verbs) formations.

Third, values belonging to the modal set – evidential, inferential and epistemic modality – may be ordered so that they concord with the third developmental principle that quite commonly affects original resultative proper grams, viz. the evidential path. As explained in section 1.2.3.2, the evidential path states that a resultative proper sense triggers an evidential value that, in turn, generates inferential nuances. At the end, the “deductive” or non-first-hand mood gives rise to epistemic extensions. Consequently, the evidential cline can be treated as a conceptual connector of modal senses displayed by the BANTA locution, imposing their conceptual order and likely historical relation. As has been illustrated by the examples in section 3.5.1.2, the BANTA gram offers values that correspond to three stages of the evidential cline: the evidential, the inferential and the epistemic. It is, however, the epistemic meaning that can be viewed as the most prototypical. Consequently, although the BANTA form is compatible with the three segments of the evidential cline, its prototypicality zone is located in the advanced sections of this path:<sup>192</sup>

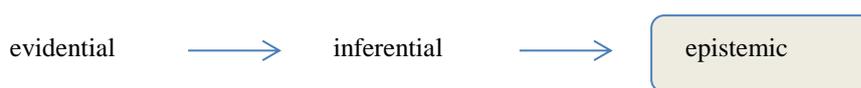


Figure 3.24: The map of the BANTA gram – senses belonging to the evidential path

As a result, all the senses – activated in concrete uses of the BANTA construction – may be networked and chained by employing three evolutionary scenarios, crosslinguistically typical of resultative formations: anterior, simultaneous and evidential clines. In this way, the gram’s entire polysemy can be represented coherently as a grid of connected values. This connection – both conceptual and diachronic – is granted by the correspondence between the values offered by the BANTA locution and stages of these three developmental processes. More specifically, the abstractly isolated non-modal values correspond to stages on the resultative path, either on the anterior sub-cline (present perfect, perfective past, non-perfective past and pluperfect) or the simultaneous sub-cline (resultative stative present and past, stative present and past, non-stative present and past). The resultative proper sense belongs to this set of values as well. Modal senses (evidential, inferential and epistemic), on the other hand, mirror the evidential track. The entire map where the three evolutionary scenarios are coordinated and where all the zones of prototypicality are specified can schematically be represented in the following manner:

<sup>192</sup> The BANTA form does not provide any palpable referential value. It seems that the conceptual and diachronic extension directly leads from the stage of an inferential sense to the stage of epistemic modality. As the evolutionary segment corresponding to the referential value may in fact be optional in the evidential trajectory, it will be omitted in the dynamic representation of the BANTA gram.

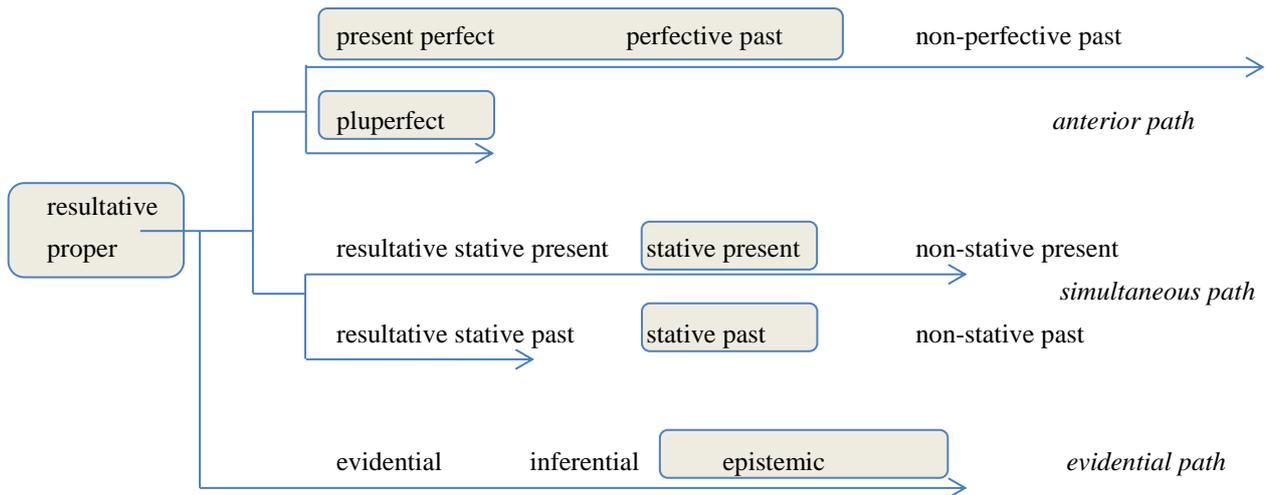


Figure 3.25: The kinetic map of the semantic potential of the BANTA gram

It is important to note that the mapping developed above represents the semantic potential of the BANTA form as organised separately by two types of clines. On the one hand, the taxis-aspect-tense senses are mapped by means of the anterior and simultaneous clines, while, on the other, the modal senses are networked by means of the evidential cline. However, as has been explained, the two groups of senses – temporal-taxis-aspectual and modal – are always combined: on concrete occasions, a particular piece of information conveyed by the BANTA gram regularly draws from the two domains. Thus, the network of realistic senses – i.e. sense that are found in empirical cases – can be represented in a more accurate manner such that the two domains interact. This mixed-network model (with prototypicality zones explicitly marked) can be schematically represented by the following – certainly simplified – grid:

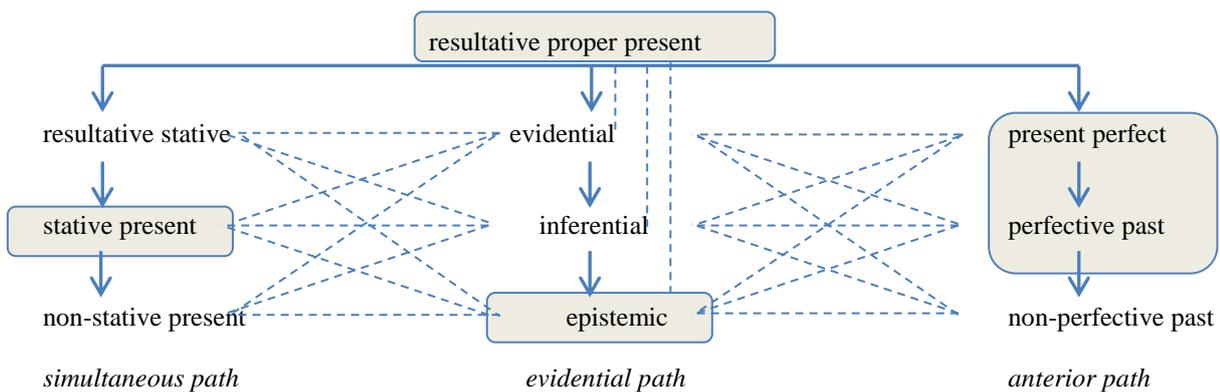
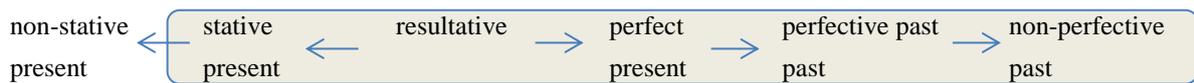


Figure 3.26: The meaning of the BANTA gram – network of realistic senses (anterior and simultaneous cline in a present time only)<sup>193</sup>

<sup>193</sup> The dashed lines relate components of the three sequences of values, leading to complete meanings that may be encountered in empirical cases. These three sequences match three evolutionary scenarios: anterior cline, simultaneous cline (a taxis-aspect-tense set of senses) and evidential cline (a modal set of senses). Consequently, each concrete occurrence of the BANTA gram regularly makes use of two components: taxis-aspectual-

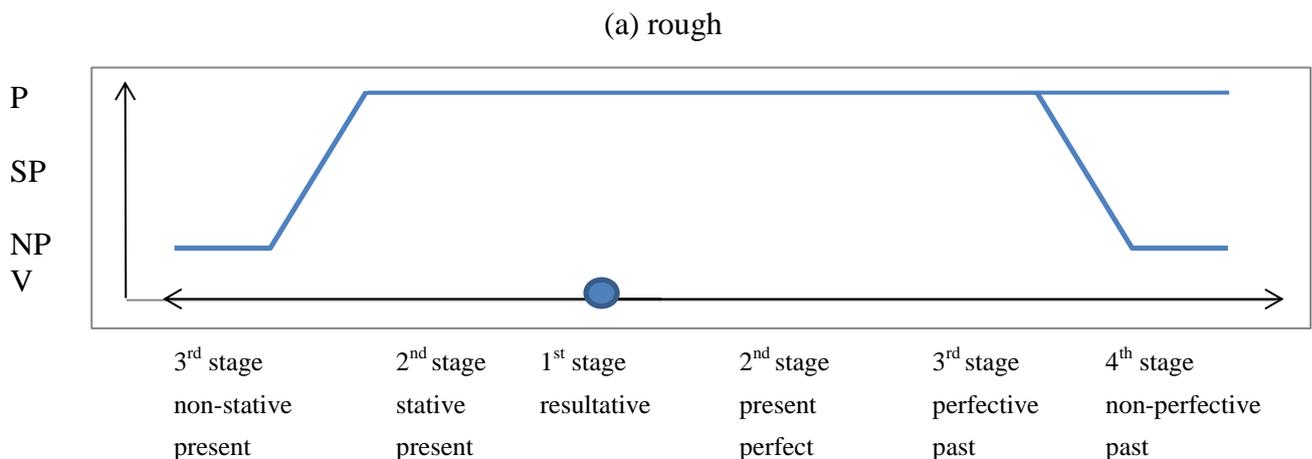
In order to accommodate the BANTA form in the stream representation of all the resultative-path grams of Basse Mandinka, the complex maps plotted in Figures 3.25 and 3.26 must be reformulated into a simpler, linear manner. As usual, the model is limited to the anterior and simultaneous path developing within a present time frame and some values have been grouped into larger categories. One should also observe that if the sense of a non-perfective past is not restricted to the anterior cline but also reflects a highly similar value (stative and non-stative past), acquired, however, by following the simultaneous path in a past time frame, the nuance of a non-perfective past can be understood as one of the prototypicality areas. If, however, the path to the right reflects only the anterior cline located in a present time frame, the non-perfective past value would not be prototypical (see the same phenomenon discussed in the case of the TA and YE<sub>1</sub> grams in sections 3.1.2 and 3.1.3). Once more, this representation only indicates the temporal-taxis-aspectual semantic area of the BANTA gram. Therefore, this linear cline should be viewed as being immersed in the evidential cline and its three senses: evidential, inferential and epistemic. This immersion is what differentiates the BANTA gram's linear kinetic map from similar models developed for the TA and YE<sub>1</sub> forms (cf. section 3.6 and 7.1.1).



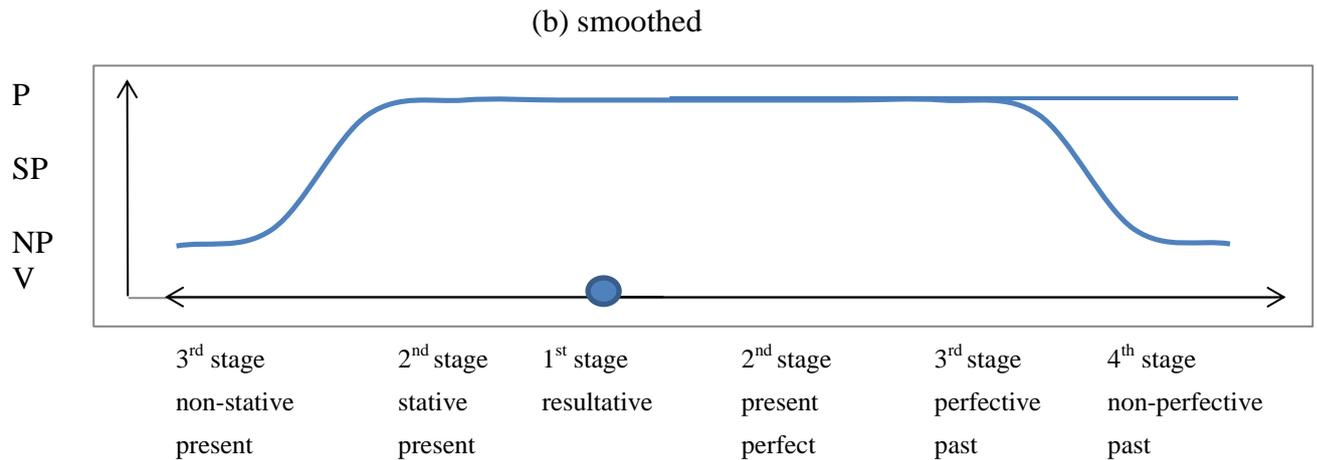
*immersed in the evidential cline and its three values (evidentiality, inferentiality and epistemic modality)*

Figure 3.27: Linear model of the semantic space of the BANTA gram

If the information concerning the prototypicality is represented by the vertical y-axis, the model of the semantics of the BANTA gram adopts the following form:



temporal properties (values that mirror the anterior path or the simultaneous path) and modal properties (values that mirror the evidential path).



*immersed in the evidential cline and its three values (evidentiality, inferentiality, epistemic modality)*

Figure 3.28: Wave model of the semantic space of the BANTA gram

Alternatively – and for a more accurate comparison with the NAATA gram, which also seems to travel along the evidential cline – one could propose that the linear evidential cline is immersed in the context of the anterior and simultaneous paths with their respective values (cf. section 3.6, below).

The dynamic definition of the BANTA gram in terms of an originally resultative formation developing along the resultative path is evident not only due to the semantic potential offered synchronically, but can also be corroborated by formal properties of this construction. First, the structure of the BANTA locution – a periphrasis built on the verb *baj* ‘be finished’ – corresponds to a typologically common mechanism of deriving broadly understood resultative formations and perfects. As observed by Bybee, Perkins & Pagliuca (1994:54-67), the verbs offering the meaning ‘finish’ constitute a highly common source of resultatives, completives and perfects (see, for instance, the Spanish completive expression *acabo de volver* ‘I have just come back’ or the Icelandic resultative *ég er búinn að gera þetta* ‘I have just done it’). Second, the form of the morpheme *banta*, itself, is based upon the TA gram. As explained in section 3.1, this formation should be defined as an expression of the resultative path, having most probably originated from a resultative proper locution. And third, a highly similar formation built around the entity *banta* (the construction that employs a verbal noun instead of a verbal base) is regularly used with a resultative proper or completive meaning (see again the example *M banta domoroo la!* ‘I am finished with eating’ discussed at the beginning of section 3.5). These three facts corroborate the resultative origin of the BANTA gram. Lastly, it should be recalled that the BANTA construction still provides a resultative proper value (even though it is always impregnated by modal nuances). As has been explained various times, such a resultative proper sense corresponds to the initial stage of the resultative path and constitutes the starting point of other values located on this trajectory, thus being a central component of the network. From it, other meanings and extensions have arisen in accordance with human general cognitive capacities and following the evolutionary scenarios that govern the grammatical life of resultative proper inputs.

Lastly, certain comparative facts provide a further corroboration of the dynamic definition developed for the BANTA gram. Various Manding and Mande languages include in their verbal systems resultative-path grams composed of the cognate of the verb *ban* (used in a form that is equivalent to the TA form) and a verbal base (Babaev 2011:18). The meaning of such locutions is typicality resultative, perfectal or perfective.

In Manding, the *banta*-type or the *BARA*-type in Tröbs' terminology is fairly well represented (Tröbs 2009:229-230). For instance, in Jula, one finds a formation that uses the auxiliary *bàrà* (a possible cognate of *banta*, i.e. the verb *bán* 'finish' in the equivalent of the TA gram) together with the base of a lexical verb to express perfectal and past senses: *Mùsà à wòri'bàrà bán* 'Musa's money has finished' (Braconnier 1989:52, 1991:18-19). As in Basse Mandinka, this gram is used in both transitive and intransitive constructions. Similar formations appear in Maninka (*bára/bánta*; Creissels 1997b, Dumestre 1999:13), Niokolo Maninka (*bata*; Tröbs 2009:223) and Kagoro. In Kagoro, the periphrasis with the auxiliary *báa* is employed with the same perfect(ive) function as the gram derived by means of the morpheme *-la / -na* (a cognate of the TA form) – the difference between the two constructions being that the former (*báa*) is both transitive and intransitive, whereas the latter is only intransitive (Creissels 1986:19-20).

Similar constructions appear in other Mande languages. For example, in Koranko, one uses a gram built around the auxiliary *wára* or its variants *ára* and *bára* (Kastenholz 1983, 1987). This locution expresses actions that are completed and perceived from the point of view of the present (Kastenholz 1983:65), approximating the category of a present perfect, a (resultative) stative or a past tense. A construction that is fully equivalent to the BANTA gram may also be encountered in Yalunka, where the auxiliary *bánt(à)* – the verb *ban* '(be) finish(ed)' employed in the TA form – is used to convey perfectal nuances: *Xiixɔlla bant'ee suxu* 'Are they sleepy?' (Lüpke 2005:124; see also a similar expression in Sosso, which is formed with *bàrà*; Creissels 1997b:15; Tröbs 2009:229).

According to Vydrin (1999a:59) and Babaev (2011:18-19), it is possible to reconstruct the proto-Western-Mande form as *\*ban-da* (or *\*ban-Da*). However, in contrast to the constructions found in other languages of the family, the Basse Mandinka BANTA gram seems to be the only one that has evolved along the evidential cline, besides having travelled along the anterior and simultaneous trajectories. That is, although the resultative, perfectal, perfective and past senses of the BANTA gram are consistent with the evidence from other dialects and related languages, the evidential, inferential and (especially) epistemic values constitute a unique feature of Basse Mandinka. As explained in this section, the BANTA form always combines a given sense available on the anterior and simultaneous paths with the values found along the evidential path. It is regularly modally marked.

### 3.6 The resultative stream

In this chapter, I have discussed the semantics of five grams that can be mapped by means of the resultative path, and in particular by using, at least, one of its three sub-clines: the anterior cline, the simultaneous cline and/or the evidential cline. Additionally, some of such constructions – especially those that are more advanced on the resultative cline – offer

meanings that can be networked with the help of a modal contamination cline applied to a resultative-path gram.

As far as the qualitative topology of the maps is concerned, the following has been observed: The TA gram has been defined as spanning the entire length of the anterior and simultaneous paths, as well as covering two sections of the modal contamination path. To be exact, the gram covers the stages of a resultative proper, a present perfect, an indefinite perfect, a perfective past and a non-perfective past, on the one hand; and of a resultative stative, a stative present and a non-stative present, on the other. This means that even though the TA form has reached advanced sections of the resultative path (both on the anterior and the simultaneous cline), it has not abandoned stages located at the beginning of this trajectory. Consequently, from an evolutionary perspective, it can be viewed as a relatively advanced construction, a type of an old resultative and/or perfect. With respect to the modal contamination cline, the TA formation occupies an intermediate stage (more precisely, the second one) of this trajectory: appearing in an explicit modal context, the gram regularly provides modal readings.

The behaviour of the  $YE_1$  gram is highly similar. The construction spans almost the entire length of the anterior and simultaneous cline, as it expresses the vast majority of the senses typical to these two developmental scenarios with a noticeable exception of the resultative proper value. Therefore, its qualitative map is comparable to the network designed for the TA gram. Likewise, the grid developed for the modal values of the  $YE_1$  locution is analogous to the TA form and matches the second stage on the modal contamination cline. The main distinction between the TA and  $YE_1$  formations – given the invariably intransitive nature of the former and the regularly transitive character of the latter – is that the  $YE_1$  construction may not be derived from adjectival roots. As a result, it is much less favourable for the stative nuances. This structural property has yet another implication on the semantics of the  $YE_1$  form: since the  $YE_1$  gram cannot be employed intransitively, it fails to offer de-transitive uses. By doing so, it is incompatible with the resultative proper value. Consequently, the  $YE_1$  locution can be regarded as a resultative-path gram equally advanced as the TA formation, with the exclusion of the original resultative proper stage which does not belong to the semantic potential and, hence, the map of the  $YE_1$  gram.

In contrast to the TA and  $YE_1$  formations, the NAATA gram has only been classified as a manifestation of the anterior cline. To be exact, it covers the phases of the anterior path from the stage of an inclusive perfect to the phase of a non-perfective past tense. It is important to note that the simultaneous cline does not seem to operate for the semantic potential of the NAATA formation, which inversely means that the gram has been specialised in dynamic senses available on the anterior cline. As a result, the NAATA gram can be defined as a semi-advanced resultative-path gram confined to the anterior cline and with the section of a resultative proper unavailable. As far as the anterior path mapping is concerned, the qualitative map of the NAATA construction is similar to the semantic grid proposed for the  $YE_1$  locution. The modal senses of the NAATA form cover the second stage of the modal contamination cline, which harmonises with a similar behaviour exhibited by the TA and  $YE_1$  expressions. Additionally, a portion of the semantics of the NAATA form can be mapped by

means of the evidential cline, matching the very initial stage of this evolutionary trajectory, where the subject lacks intentionality and control over the event, activity or situation.

The RIIJ form has been defined in dynamic terms as a non-advanced resultative-path gram. With respect to the anterior cline, this construction ranges from the stage of a resultative proper to the phase of an inclusive perfect – the first section on the anterior trajectory, located immediately after the stage of a resultative proper. One should, however, recall that the genuine inclusive dynamic value is available only in the case of motion and intransitive activity verbs, while the underlying transitive bases are regularly employed in a de-transitive and non-dynamic manner. As far as the simultaneous cline is concerned, the RIIJ gram covers the entire path, matching the stages of a resultative stative, stative and non-stative (even dynamic) present.

Lastly, the meaning of the BANTA form makes regular use of two semantic domains: one is organised along the anterior and simultaneous clines, whereas the other includes values developed along the evidential path. The first class of senses (temporal-taxis-aspectual values) is analogous to those offered by the TA and YE<sub>1</sub> grams. This means that the map of the BANTA form parallels the maps of the TA and YE<sub>1</sub> grams with the distinction that the BANTA construction seems to be incompatible with the performative function. More exactly, the map of the “indicative” component of the BANTA gram is a summation of the indicative maps of the TA form (for intransitive verbs) and the YE<sub>1</sub> form (for transitive verbs). Thus, the BANTA gram spans the entire length of the anterior and simultaneous clines: it ranges from the stage of a resultative proper to the phase of a non-perfective past (the anterior track) on the one hand, and to the phase of a non-stative present (the simultaneous track), on the other. However, on concrete occasions, these temporal-taxis-aspectual properties are always combined with modal values that are mapped by means of the evidential path. To be precise, the BANTA formation offers values that correspond to three stages of the evidential cline: the evidential, the inferential and the epistemic. Accordingly, it can be defined as an advanced evidential-cline gram.

Almost all the constructions analysed in this chapter exhibit a typologically common behaviour of resultative-path grams. As explained in section 1.2.3.2, forms travelling along the resultative cline display an evolutionary split whereby adjectival and static verbs tend to develop along the simultaneous path, while dynamic verbs resist this developmental trajectory and are usually attracted by the anterior cline. In agreement with this crosslinguistic tendency, in Basse Mandinka, dynamic verbs follow the anterior path, whereas adjectival and static verbs usually select the simultaneous cline. Nevertheless, in the case of the RIIJ gram, certain dynamic predicates may also travel along the simultaneous cline (e.g. *ke* ‘happen, occur’). The NAATA form behaves differently and only participates in the anterior cline.

All the five grams are regularly mapped by means of the resultative path located in a present and past time frame, but only exceptionally when this evolutionary scenario applies to a future temporal sphere.

To recapitulate, the qualitative maps developed for the five grams reveal the following dissimilarities that exist among them. First, the topologies of the said formations differ in exploring different sub-trajectories of the resultative path. Namely, the TA, YE<sub>1</sub>, BANTA and RIIJ forms develop along the anterior and simultaneous clines, while the

NAATA gram only evolves along the anterior cline. Additionally, while the TA, YE<sub>1</sub> and RII locutions progress on the anterior and simultaneous trajectories, the NAATA and BANTA forms also travel along the evidential path. Second, the maps suggest a different range of advancement on the three paths. By doing so, they enable us to posit an internal order between the five locutions. To be exact, given the extent of the semantic spaces covered by the discussed grams, one can hypothesise that the TA, YE<sub>1</sub>, NAATA and BANTA constructions are more advanced than the RII form, which is the least developed.

Although the qualitative maps shed some light on the correlation of the grams, in most cases, such qualitatively-focused networks overlap. For instance, the maps of the TA form, the YE<sub>1</sub> form and – if one only considers the anterior path – the NAATA form are almost identical. Likewise, the semantic space designed for the BANTA gram is analogous to the maps developed for the TA and YE<sub>1</sub> if modal senses of the former are kept separately. Even though qualitative maps are informative, they do not exhaust all the information related to the meaning of a form: they say nothing concerning the prototypicality of senses offered by a given locution. Therefore, in order to develop a more adequate model of verbal semantics, qualitative maps have been expanded into quantitative maps. These quantitative networks subsequently gave rise to dynamic curved models or waves.

As far as the quantitative evidence is concerned, the following has been concluded: The TA gram locates its peak of prototypicality in the initial, intermediate and more advanced sections of the anterior cline (i.e. the stages of a resultative proper, a present perfect and a perfective past), in the middle zone of a simultaneous cline (the stage of a stative present) and in the second stage the modal contamination cline (the stage of a fully modalised indicative in an explicit modal environment).<sup>194</sup> In addition, if the sense of a non-perfective past is not restricted to the anterior cline, but also reflects the same (or similar) value, albeit acquired by following the simultaneous path in a past time frame, the nuance of a non-perfective past can be viewed prototypical. Accordingly, this confirms the definition of the TA form as a relatively advanced resultative-path gram with significant retention of more initial meanings.

The YE<sub>1</sub> formation situates its prototypical zones in central and advanced sections of the anterior cline, i.e. in the sections reserved for a present perfect and perfective past. As far as the simultaneous cline is concerned, no stage can be viewed as prototypical. In addition, as far as the modal values are concerned, the gram's prototypicality is located in the intermediate area of the modal contamination cline, i.e. in the stage of an indicative input being fully modalised in an explicit modal milieu. Consequently, the qualitative data agree with the classification of the YE<sub>1</sub> locution as a relatively advanced resultative-path gram – a type of an old perfect. One should note that the YE<sub>1</sub> gram is more specialised in the anterior cline than the TA form. In addition, the YE<sub>1</sub> locution is more advanced and, at the same time, less advanced on the anterior path. It is more advanced because it seems to be incompatible with the sense of a resultative proper – the gram has abandoned this original stage. However,

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<sup>194</sup> It should be emphasised that although the second stage of modal contamination is the most prototypical in the conditional type of the TA gram, the modal senses as such do not play a crucial role in the total semantics of the TA form. They are not prototypical in this broader sense. This observation also holds true for the YE<sub>1</sub> and NAATA constructions.

it is less developed because the non-perfective past value does not enter into the gram's zones of prototypicality – thus, the construction has progressed less than the TA form.<sup>195</sup> One could propose that from the dynamic perspective of an anterior cline, the YE<sub>1</sub> construction is slightly more “central”.

The NAATA gram offers its prototypicality sphere ranging from the stage of a present perfect to the phase of a perfective past. Thus, its prototypicality zone covers the intermediate and semi-advanced stages of the anterior cline. It is extremely uncommon in the sense of a non-perfective past. In fact, the compatibility of the NAATA gram with the sense of a non-perfective past (the last stage of the anterior cline) is so reduced that it barely enters into the semantic potential of the gram. The performative use seems to be even more infrequent. All of this suggests that the NAATA form is less advanced than the TA and YE<sub>1</sub> formations. Topologically, it could be viewed as significantly more central than these two constructions.

The RIIJ formation offers its peaks of prototypicality in the initial areas of the anterior cline and in the intermediate sections of the simultaneous cline, more specifically in the stage of a resultative proper and a stative. This indicates a considerable lack of advancement of the RIIJ gram.

Lastly, the BANTA form locates its zones of prototypicality in the areas of a resultative proper, perfect and perfective past (anterior cline) as well as in the area of a stative (simultaneous cline). If the non-perfective past value is envisaged in its totality – as acquired by travelling along any cline – it can also be regarded as prototypical. With respect to the evidential cline, the BANTA gram situates its peak of prototypicality in the stage of epistemic modality – an advanced section of this evolutionary scenario.

To conclude, the quantitative maps suggest that the TA, YE<sub>1</sub> and BANTA forms are the most advanced. The NAATA gram is less advanced. The RIIJ locution is the least advanced. Accordingly, it is possible to model the five grams as consecutive waves on the stream traced by the resultative path and, in particular, its three formative clines: the anterior, the simultaneous and the evidential trajectories. This consecutive arrangement will be discussed in detail further below and separately for each cline.

The TA, YE<sub>1</sub> and BANTA forms are the most advanced on the anterior stream, constituting the first wave of the locutions travelling this trajectory. They have reached the furthest sections of the path. In the case of the TA and BANTA grams, the last stage is even one of the prototypical ones. The advancement of the YE<sub>1</sub> may be recognised in the fact that the original stage of a resultative proper has been abandoned. The NAATA form constitutes the second wave. It has reached the last stage of the anterior path in a minimal way, being mainly confined to the previous sections of the stream. Nevertheless, the gram has also advanced, as it has moved away from the phase of a resultative proper. Lastly, the RIIJ locution corresponds to the third wave. It is the least advanced form of the anterior stream, principally matching its initial sections. This correlation between the waves of the five grams is represented schematically in Figure 3.29, below.

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<sup>195</sup> It should be recalled that this advancement of the TA gram and the inclusion of the stage of a non-perfective past into its prototypicality area stem from adding similar values developed separately on the anterior (located in a present time frame) and simultaneous cline (located in a past time frame).

Given its structure – i.e. being formed by means of the TA gram – the BANTA locution must logically be posterior to the TA gram itself. However, from a topological perspective, as far as the temporal-taxis-aspectual properties are concerned, the BANTA form “has caught up” with its predecessor, i.e. the TA gram. The analysis of the semantic properties of the TA and YE<sub>1</sub> expressions does not enable us to conclude which one of them was diachronically first. It is possible that the two formations date from the same – or very similar – period.

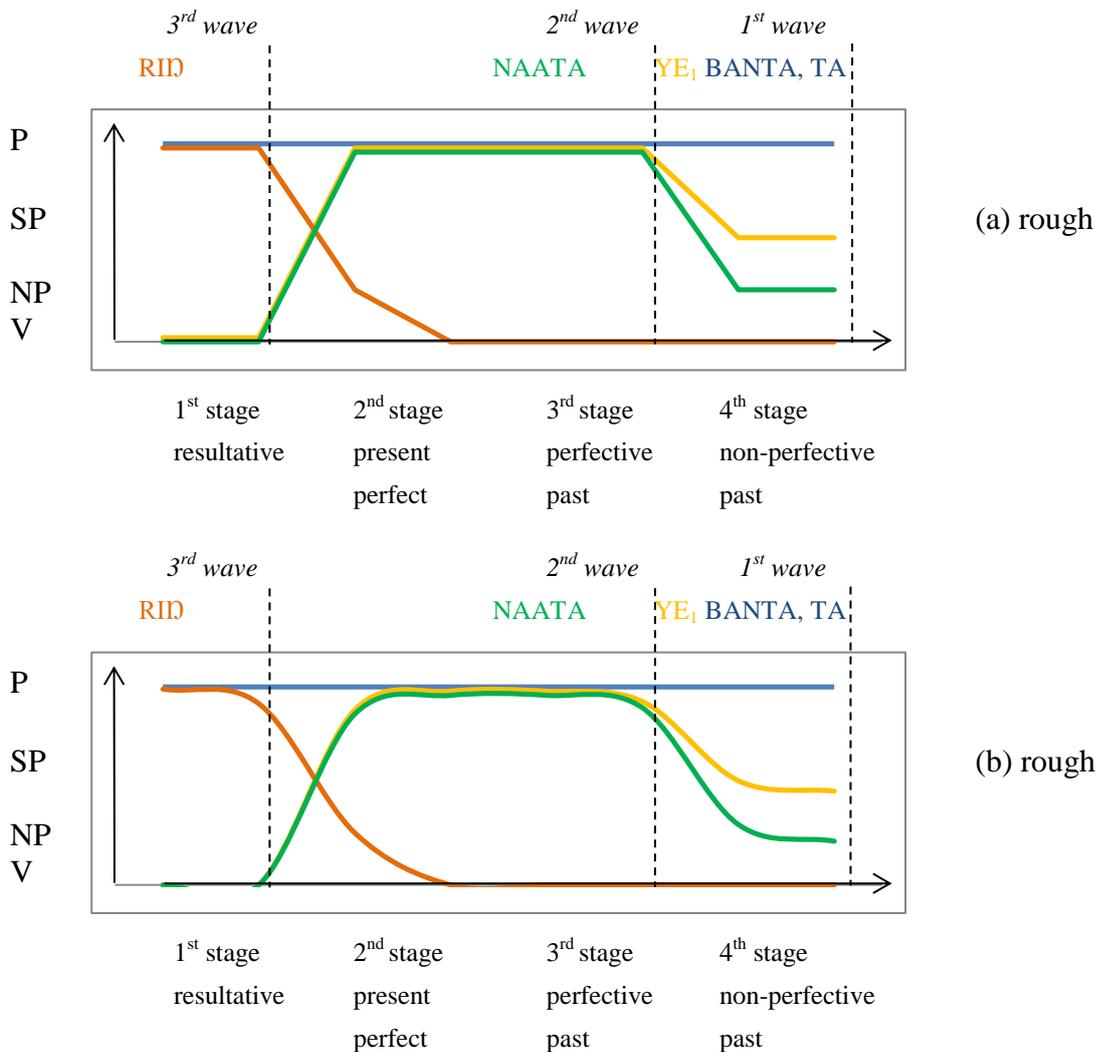


Figure 3.29: The travel-ness of the anterior cline

The model presented above indicates that the NAATA form is the most perfective in its nature. On the contrary, the YE<sub>1</sub> gram is less perfective (it is more preterital), the TA and BANTA constructions are even less so (these forms are the most preterital), and the RII formation is entirely a non-perfective category (it typically functions as a resultative proper).

As far as the travel-ness of the simultaneous stream is concerned the following can be concluded: The YE<sub>1</sub> form shows the greatest advancement, as it is not compatible with the resultative proper stage. However, it also displays a less marked wave shape along the entire

simultaneous cline (i.e. at the stages of a stative present and a non-stative present). The other three grams (TA, BANTA and RID) exhibit similar topological properties. In this manner, the TA, BANTA and RID are more stative, while the YE<sub>1</sub> construction is less so. Thus, the topology of the simultaneous path is rather inconclusive for the determination of the consecutive waves, probably except for the fact that the YE<sub>1</sub> gram seems to be the most advanced (or less conservative).

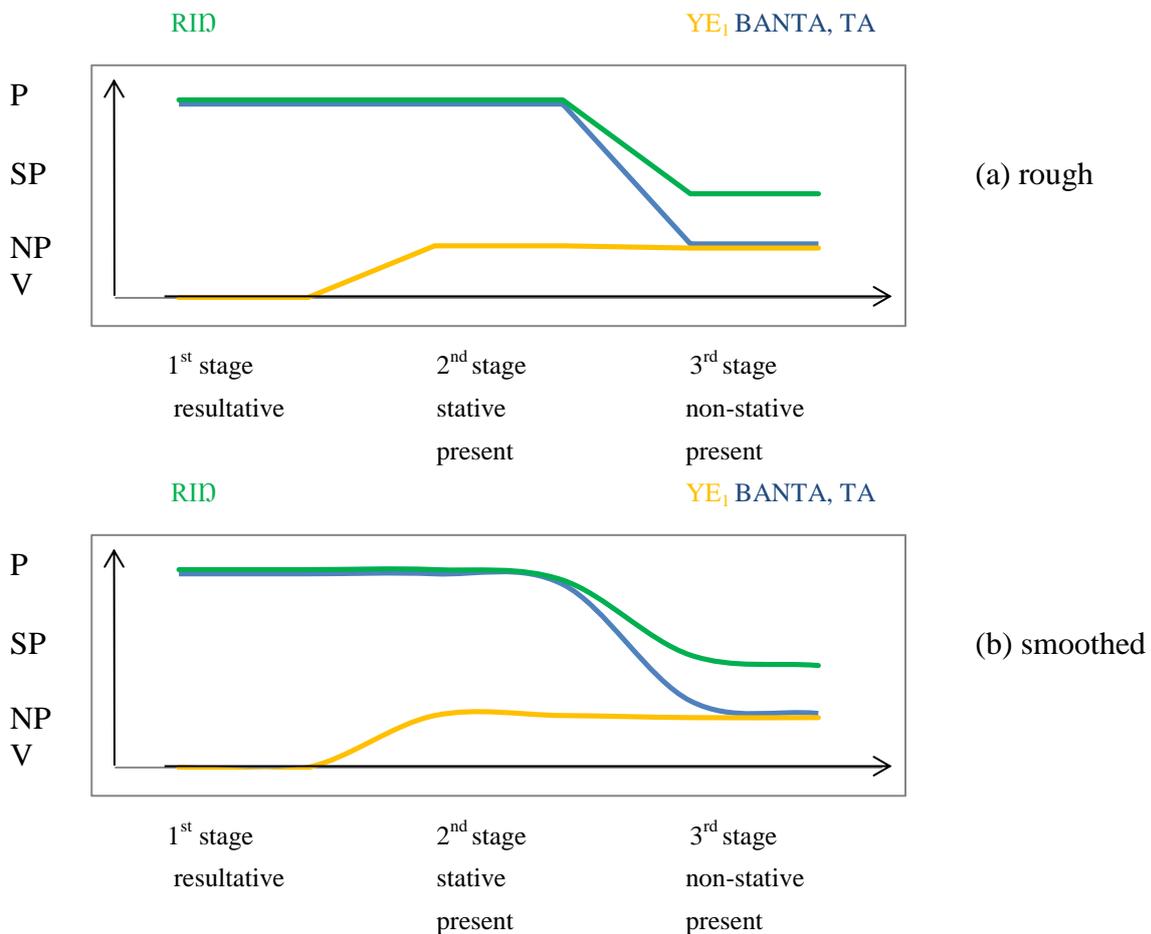


Figure 3.30: Travel-ness of the simultaneous cline

The evidence included in the simultaneous-cline mapping and, thus, the topologies on the simultaneous stream can, however, provide important information if this track is re-connected to the anterior cline and the two evolutionary scenarios envisaged together. This inclusive, complex, bi-directional stream composed of the anterior and simultaneous clines can graphically be represented in the following way:

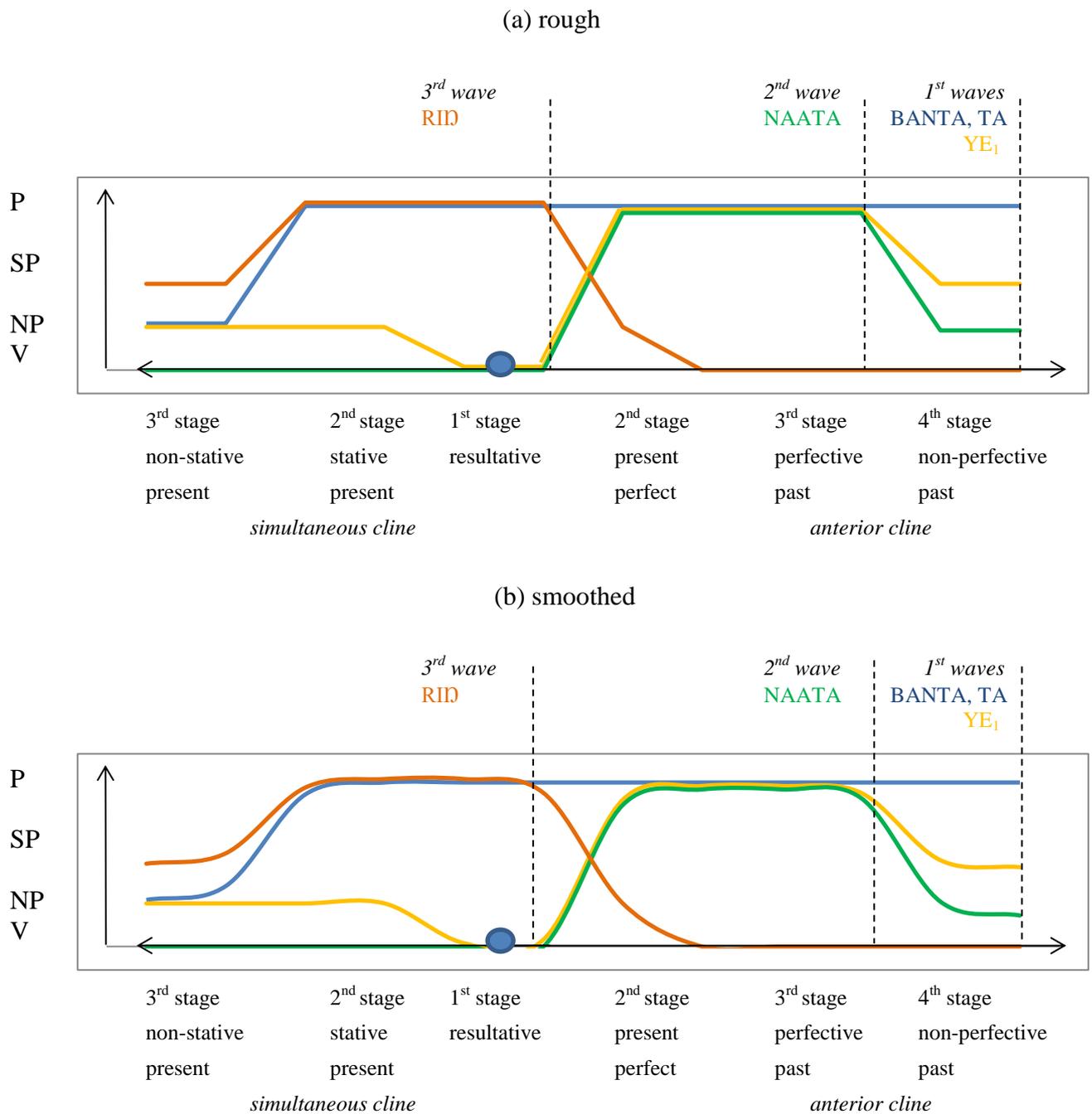


Figure 3.31: Travel-ness of the anterior and simultaneous clines

To analyse the chart designed above more carefully: The TA and BANTA formations exhibit the widest prototypicality zones. These grams are prototypical in the areas traced both by the anterior and the simultaneous clines. Given that their prototypicalities include the stages of a non-perfective past and a stative – and, hence, by being compatible with the ideas of duration and stativity – these grams are less marked for perfectivity. On the other hand, the YE<sub>1</sub> formation has moved away from the initial stage of a resultative proper and, furthermore, locates its prototypicality zone in the anterior path only. As far as this gram is concerned, on the anterior cline, the stage of a non-perfective past is less prototypical than the phases of a

perfect and perfective past. Accordingly, the YE<sub>1</sub> formation is more perfective and less durative-stative than the TA and BANTA locutions. In addition, since it has lost the value of the initial stage on the stream before other grams of the first wave have done so, the YE<sub>1</sub> construction can be viewed as less conservative, as far as the retention of original values is concerned. This implies that the form should be regarded as a relatively old diachrony, whose age is comparable to the TA formation. The NAATA gram is entirely restricted to the anterior cline, with its prototypicality located in the zones of a perfect and a perfective past. It is the most perfective and non-stative category in the language. Lastly, the RID form is the least perfective and, inversely, the most stative. Its prototypicality peak is located in the conceptual input of the two clines (a resultative proper sense) and in the stative stage of the simultaneous cline. As a result, the TA, BANTA and YE<sub>1</sub> grams are the oldest, constituting the first wave. The NAATA gram is posterior, being the second wave. Finally, the RID gram is the youngest, corresponding to the most recent, third wave.<sup>196</sup> Since, this sequentiality applies to the two directions of the resultative path, the TA, BANTA and YE<sub>1</sub> grams should be regarded as the first wave of the simultaneous stream while the RID gram as its second wave.

It is possible that the three grams of the first wave – TA, BANTA and YE<sub>1</sub> – are topologically similar because there is no semantic competition between them. They can cover comparable semantic domains and, thus, sections of the anterior and simultaneous clines because they have specialised in different subtypes of the shared meanings. The TA form is always intransitive, the YE<sub>1</sub> form is transitive and the BANTA form is modal. Thus, although their semantic topologies are almost identical, the three constructions do not collide. Together they constitute the first wave: the TA sub-wave carries the intransitive roots, the YE<sub>1</sub> sub-wave transports transitive roots and the BANTA sub-wave has, in fact, diverged following the trajectory dictated by the evidential path.

There is, however, a “fight” ongoing on the resultative stream and, in particular, on the anterior stream. The rivalry on the anterior stream involves the grams of the first wave (especially the TA and YE<sub>1</sub> formations) and the constructions that compete with them in the use of the semantic domains available along this evolutionary stream, i.e. the NAATA form (which is the second wave) and the RID form (which is third wave). The TA and YE<sub>1</sub> constructions are the broadest: “counted” together, their prototypicality zones span the whole length of the cline. The NAATA gram has reached the stage of a perfect and a perfective past. As it has abandoned the first stage (resultative proper), it specialises in dynamic (perfectal and/or perfective) senses. Its peak is located behind the TA/YE<sub>1</sub> wave’s front (or their first, attacking peak). Lastly, the wave of the RID gram has almost reached the first perfectal stage of the anterior section (inclusive perfect) although its crest is still located in the initial phase of a resultative proper. Accordingly, it stands right behind the topology and the peak of the NAATA wave (cf. Figure 3.32).

The competition between the three waves leads to the situation that the TA/YE<sub>1</sub> grams are the only ones that admit non-perfective past uses, giving rise to a preterital perception of

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<sup>196</sup> The evidence suggests that resultative-path grams evolve more rapidly along the simultaneous cline. The RID locution, which is the third wave of resultative formations in Basse Mandinka, has already caught up with two members of the first wave (TA and BANTA).

these locutions by the speakers (i.e. as simple past tense). The NAATA form, limited to perfect and perfective zones, is commonly associated with a perfective aspectual force, in which it is more explicit than the all-inclusive TA/YE<sub>1</sub> grams. Finally, as the RIO locution is mostly restricted to a resultative proper value, being an overt means of the expression of this sense. Once more, even though the TA/YE<sub>1</sub> forms are admissible with the resultative proper sense, they are often ambiguous since they can also provide dynamic readings. Out of the twenty persons interviewed for this purpose, all related the RIO form with a resultative proper domain. Likewise, all the informants associated the NAATA construction with a present perfect or a perfective past. Lastly, 90% of the speakers (18 out of 20) defined the TA formation as a general past tense (two others viewed it as a present perfect).

Thus, the joint coexistence of all the grams on the stream seems to have a significant effect on their semantics, especially on their perception by speakers. A gram's meaning is not only conditioned by its internal topology and prototypicality, but also depends on the relation to the topologies and prototypicalities of the remaining formations that travel along the stream. This is particularly evident in the case of the TA gram (as well as, to a degree of the YE<sub>1</sub> form) whose wave is monotonous, with a relatively uniform peak of prototypicality – it spans the entire anterior cline. Since the wave of the TA construction is evenly distributed along the *x*-axis, its realistic prototypicality (which could be referred to as product prototypicality in order to be differentiated from the gram's internal prototypicality) is not only inferable from this form's own prototypicality, but also derives from the interaction of its wave with the waves traced by the other grams (and their internal prototypicalities). Consequently, the meaning of the TA gram is conditioned by the structure of the stream in which it is embedded (cf. Figure 3.32).<sup>197</sup>

Given the internal topology of each wave and its relation to the other waves (and, thus, to the global structure of the stream), the specialisation of the three waves can be modelled in the following manner:

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<sup>197</sup> This chapter shows that the question of whether a gram is a tense, aspect or mood – and thus, whether a language is an aspectual, temporal or modal system – so commonly discussed and disputed in studies devoted to various linguistic families (Indo-European, Semitic, Bantu, etc.) is no longer problematic. In fact, it almost ceases to be a problem worthy of scholarly attention, as trans-categorical forms can be defined without artificially fitting them into neat, static and crisp boxes. As far as the cognates of the TA and YE<sub>1</sub> grams are concerned, Idiatov (2000) and Vydrin (2000) regard the *yé* and *-ra* grams of Bambara as a perfective category that can be interpreted as a preterite, contrary to Blecke (1988/2004:48), who classifies these forms as a preterite marked in a supplementary manner as perfective. In addition, as “on trouve dans les langues des oppositions « perfectif : imperfectif » ou « prétérit : présent », mais non des systèmes « mixtes »” (Vydrin 2000:62), according to Idiatov (2000) and Vydrin (2000), Bambara is an aspectual language and not a tense language. Vydrin (2000:62) concludes that “l’argumentation concernant le caractère du système (aspectuel vs. temporel) est épuisée”. Given the advances in cognitive linguistics and complex system theory, this view can be contested. As has been explained in sections 1.2.1 and 1.2.2, binary oppositions and discrete categorisation are unrealistic and inadequate. It is fuzziness (and, thus, the degree of prototypicality), on the one hand, and variation (polysemy) necessitated by dynamics underlying language, on the other hand, that shape a linguistic system (cf. Dahl 2000a, Munné 2013, Massip-Bonet 2013). A single form (such as the TA or YE<sub>1</sub> grams) covers various semantic domains and a language (such as Basse Mandinka) makes use of multiple semantic spheres (for details, see section 7.2 and 7.3.1).

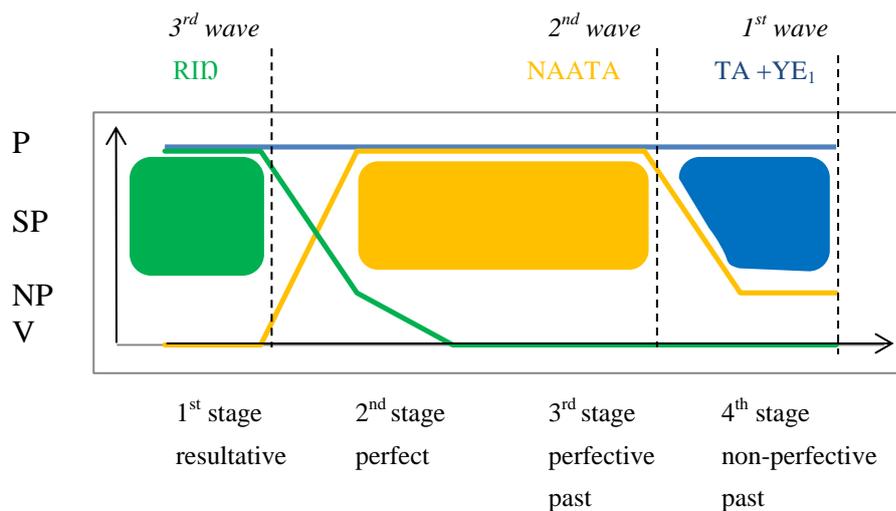
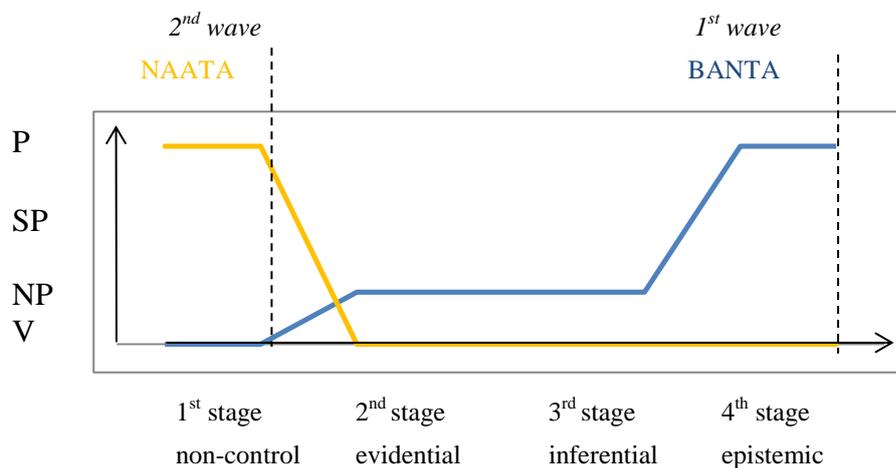


Figure 3.32: Competition on the anterior cline

The evidential stream can relate two grams: the BANTA and NAATA constructions. As explained, the BANTA form is highly advanced having reached the final section of the evidential path, i.e. the stage of epistemic modality. This phase also corresponds to the region of the path where the prototypicality of the BANTA gram is located. On the other hand, the NAATA formation exclusively covers a pre-formative stage of the evidential cline, i.e. the section where the sense of non-control is profiled. This difference in the advancement on the evidential trajectory indicates that the BANTA gram is the first wave on the evidential stream, while the NAATA form constitutes the second wave.



(a) rough

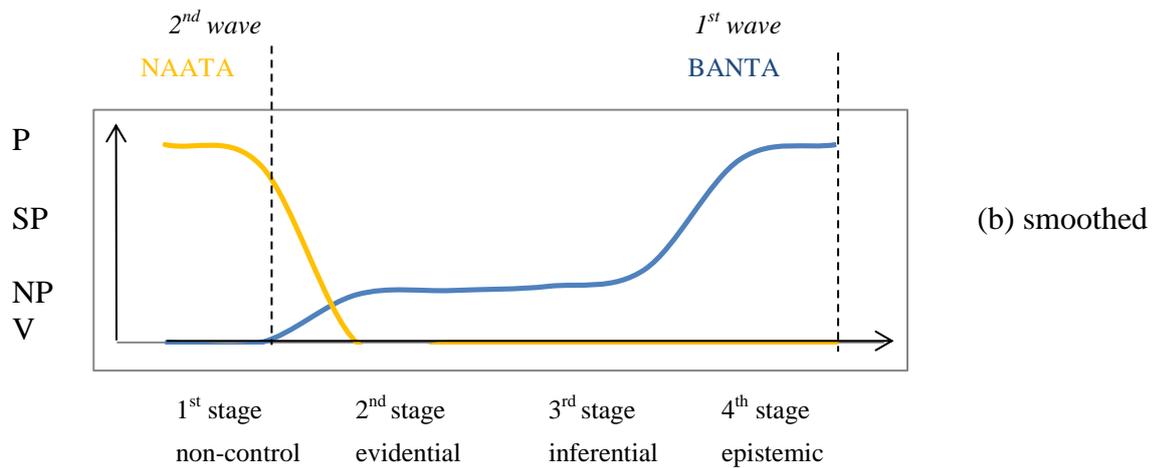


Figure 3.33: Travel-ness of the evidential cline

The two constructions divide the semantic space available on the evidential stream in the following way: the BANTA form covers the three more advanced regions (and, thus, it is profoundly associated with the idea of non-first hand modality) whereas the NAATA form has been specialised as the expression of the idea of non-control. Accordingly, the two formations do not overlap, but rather divide the evidential stream in conformity with their “needs”, being specialised for distinct modal purposes.

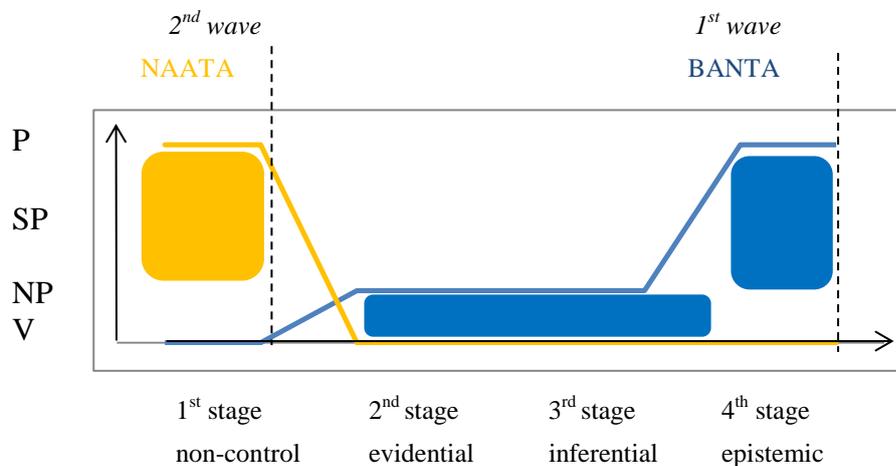


Figure 3.34: Travel-ness of the evidential cline

The degree of the advancement on the evidential cline can be correlated with the progression on the anterior path. The BANTA gram is both an old anterior-path gram and an old evidential-path form – it has reached and stabilised values typical of the final stage of the former evolutionary scenario (non-perfective past) as well as those associated with the end point of the latter trajectory (epistemic modality). On the contrary, the wave set in motion by the NAATA form has only reached the less advanced section of the anterior path (perfect and perfective aspect) and the very initial segment of the evidential path (non-control). This

correlation is schematically represented in Figure 3.35 below. As a result, the topologies of both the anterior stream and evidential stream indicate that, in relation to each other, the BANTA gram is the older wave, while the NAATA form is the younger wave.

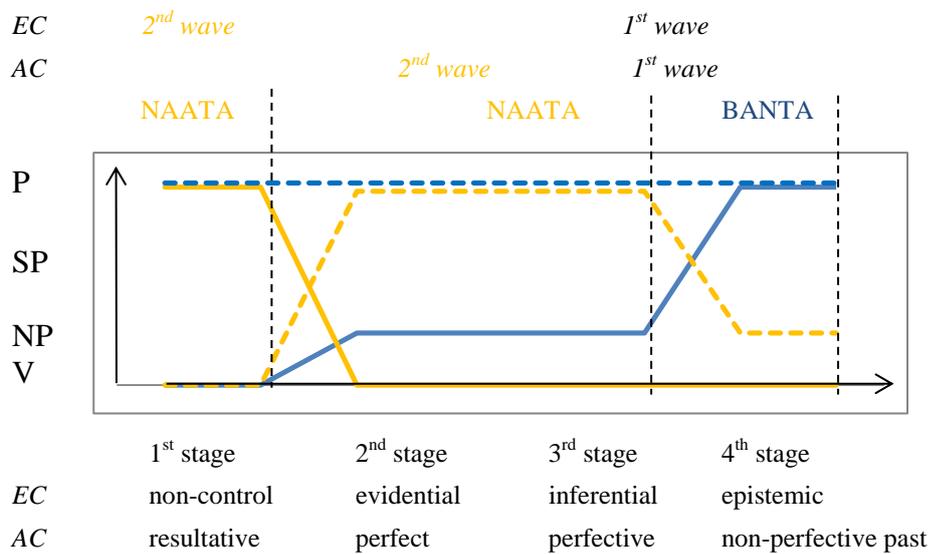


Figure 3.35: Correlation of the advancement on the anterior and evidential path<sup>198</sup>

<sup>198</sup> The abbreviations EC and AC stand for the evidential cline and anterior cline, respectively. The dashed lines correspond to the waves of the anterior stream, while the non-dashed lines correspond to the waves of the evidential stream. The four stages distinguished for each trajectory as arguments of the *x*-axis are not correlated in the sense that, for example, the value of non-control is matched with (and found only in combination with) the value of a resultative proper.

## CHAPTER FOUR

## MODAL-PATH MODULE

## 4. Modal-path module

This chapter offers an analysis of the grams whose meaning can principally be mapped by making use of modal paths. This group of verbal forms consists of three locutions: the NOO gram (section 4.1), the ÑANTA gram (section 4.2) and the MAA gram (section 4.3). Additionally, I will include the SI construction (section 4.4), which can alternatively be analysed as a manifestation of a modal cline and not as an old imperfective-path gram, as has been proposed in section 2.5. Following the technique used in the study of the verbal formations belonging to the imperfective and resultative paths, the analysis of the grams of the modal cline will be organised as follows. First, I will present the structural properties of a given construction. Subsequently, a detailed description of its semantic potential will be offered: all the senses will be carefully distinguished and illustrated by examples extracted from the database. Next, the total meaning of the formation will be classified in dynamic terms as a map of interrelated senses. By determining the prototypicality areas of each gram, this model will be reformulated into a wave. Lastly, in the concluding section 4.5, a dynamic model of the modal-path module will be designed where the four constructions will be arranged into a stream of four consecutive waves.

## 4.1 The NOO gram

The NOO construction is a periphrasis composed of the base of a lexical verb and the element *noo* that, as will become evident in the subsequent discussion, corresponds to the English translations with the verbs ‘can, be able, may’. Most commonly, this analytical formation appears in four more basic constructions, i.e. in the SI gram (4.1.a), the YE<sub>1</sub> gram (4.1.b), the KA gram (4.1.c) and the LA gram (4.1.d), as well as in their negative variants derived by means of the predicators *te* (both in the case of the SI and LA grams), *maŋ* (the negative of the YE<sub>1</sub> gram) and *buka* (the negative of the KA gram).

- (4.1) a.     A     **si**     **bambaŋ**     **noo**  
           he    SI     be.strong   NOO  
           ‘He can be strong’
- b.     A     **ye**     a     **ke**     **noo**  
           he    YE<sub>1</sub>   it     do     NOO  
           ‘He could do it’
- c.     Moolu **ka**   **tambi noo**   wo   siloo   kaŋ  
           men  KA   pass  NOO   that  path  on  
           ‘Men can pass this way’
- d.     Saama           a     **be**   **kandi noo**   **la**  
           tomorrow   it     NVP  be.hot NOO  LA

‘It may be hot tomorrow’

The predicate *noo* can also be employed independently, i.e. as a lexical verb *a noo* with a meaning equivalent to ‘be able, can, may’. In such cases, it does not head a verbal base but rather introduces its own nominal or pronominal object:

- (4.2) a. **Da** a **noo** le  
I-YE<sub>1</sub> it NOO FOC  
‘I can [do] it’
- b. Nte **ye** a **noo**  
I YE<sub>1</sub> it NOO  
‘I can [do] it’
- c. N **be** a **noo** **la**  
I NVP it NOO LA  
‘I can [do] it’

In addition to the morpheme *noo* in the NOO periphrases and the modal verb *a noo*, there is another homophonous verbal root in Basse Mandinka, i.e. a non-modal verb *a noo* that expresses the idea of ‘overcoming, conquering’. Since this verb is a regular lexical root, it may appear in any verbal construction available in the language (for instance, in the YE<sub>1</sub> and YE<sub>2</sub>; see examples 4.3.a-c below). In such cases, it expresses temporal, taxis, aspectual and modal senses typical of each gram in which it is employed:

- (4.3) a. A **ye** nte le **noo**  
he YE<sub>1</sub> me FOC overcome  
‘He overcame me’
- b. Nte **ye** duniyaa **noo** le  
I YE<sub>1</sub> world overcome FOC  
‘I have overcome the world’
- c. Kana soŋ kuu jawoo **ye** ite **noo**  
Do.not agree thing bed YE<sub>2</sub> you overcome  
‘Do not agree that the evil overcome you’

#### 4.1.1 Semantic potential

##### 4.1.1.1 Grammatical tradition

Very little has been written concerning the NOO expression in Gambian Mandinka. According to Macbrair (1842:19-20), this form corresponds to the verbs *be able*, *can* and *may* in English. It is usually found with the YE<sub>1</sub> gram (*ŋa safero ke noo* ‘I can write; I am able to write’) and, even more frequently, with the SI form (*n si ta noo* ‘I can go’). Similar observations are offered by Gamble (1987:21), who equates the NOO construction with verbs *be able to* and *can*. He quotes examples where the NOO expression is used with the YE<sub>1</sub>, and

MAD formations (*A maŋ taa noo* ‘He cannot go’). This view is maintained by Colley (1995:16; an equivalent understanding of the NOO gram may also be deduced from discussion in Rowlands 1959). Creissels (1983a) and Creissels & Sambou (2013:79-80, 127, 166) view the NOO construction as the expression of potentiality (*pouvoir*), although the auxiliary itself derives from a transitive verb with the meaning of “maîtriser” (on compositions with *noo* in Mandinka, see also Creissels & Jatta 1981:40).

#### 4.1.1.2 Evidence from Basse

In general terms, the periphrases with the auxiliary *noo* connote modal ideas of ability, capacity, possibility and probability. In this section, I will describe in detail all the senses that can be identified where the NOO construction appears in its four main morphosyntactic environments i.e. with the YE<sub>1</sub>, SI, LA and KA grams.

##### YE<sub>1</sub> NOO

When the NOO locution appears in the YE<sub>1</sub> gram, it usually expresses modal values of learned ability or skills similar to ‘know how to’ (4.4.a-b) and non-learned mental or physical capacity equivalent to ‘be able to’ (4.5.a-c). In both uses, the formation typically takes human grammatical subjects.

- (4.4) a. A    **ye**    motoo **borindi**    **noo**  
 A    YE<sub>1</sub>    car    drive    NOO  
 ‘He knows how to drive a car / He can drive a car’
- b. **Na**    a    kendeyandi    **noo**  
 I-YE<sub>1</sub>    him    cure    NOO  
 ‘I knew how to cure him / I could cure him’

- (4.5) a. A    **ye**    **taama noo**  
 he    YE<sub>1</sub>    walk    NOO  
 ‘I am able to walk / I can walk’
- b. **Ŋa**    **diyaamu**    **noo**    ali    ye  
 I-YE<sub>1</sub>    talk    NOO    you    to  
 ‘I am able to talk to you / I can talk to you’
- c. **Ì**    **ye**    a    **bayi noo**  
 they    YE<sub>1</sub>    him    cast    NOO  
 ‘They were able to cast it / They could cast it’

This meaning of ability and capacity is often expressed by a construction in which the entity *noo* is accompanied by the verb *a ke* with a verbal noun as its object:

- (4.6) A    **ye**    **jeroo ke**    **noo**  
 he    YE<sub>1</sub>    seeing do    NOO

‘He is he able to see / He can he see’

Sometimes, the modal sense corresponds to a more general idea of root possibility, indicating that an event or situation is merely possible, or the contrary, it is not possible. In this sense, the grammatical subject does not need to be human nor controlling the action:

- (4.7) Motoo **ye** **boro** **noo** kaatuŋ Maalik ye a dada nuŋ  
 car YE<sub>1</sub> run NOO because Malik did it fix then  
 ‘The car could work because Malik had fixed it’

Very frequently, the use of the verb *noo* in the YE<sub>1</sub> gram implies a past reference rather than a present one. Accordingly, the construction expresses the ideas of a past ability, capacity or root possibility (see also examples 4.4.b, 4.5.c, 4.7, above):

- (4.8) a. **Da** a **ke** **noo** kunuŋ  
 I-YE<sub>1</sub> it do NOO yesterday  
 ‘I could do it yesterday’  
 b. **Ì** **ye** a **fahaamu** **noo**  
 they YE<sub>1</sub> it understand NOO  
 ‘They could understand it’

It shall be noted that the verb *noo* employed in the YE<sub>1</sub> gram can govern a verbal noun as its object. In such cases, the entire periphrasis regularly indicates that the subject permanently knows how to perform a given activity and is good at it:

- (4.9) a. Laamini **ye** doŋo **noo**  
 Lamin YE<sub>1</sub> dancing NOO  
 ‘Lamin knows how to dance / He is good at dancing’  
 b. Maalik **ye** boroo **noo**  
 Malik YE<sub>1</sub> running NOO  
 ‘Malik knows how to run / Malik is good at running’

### *SI NOO*

When employed in the SI gram, the NOO periphrasis expresses several modal values located either in a present or future time frame. As has been explained in section 2.5, the use of the SI locution in the company of the verb *noo* corresponds to the most regular environment where the SI gram refers to a present temporal sphere rather than to the future.

The SI NOO locution expresses a broader range of modal values than it was the case of the previously described subtype. Similarly to the YE<sub>1</sub> NOO periphrasis, it commonly conveys agentive modal senses related to physical or mental ability and capacity (4.10.a-b) and root possibility (4.11.a-c).

- (4.10) a. N    **se**    motoo **borindi**    **noo**  
 I    SI    car    drive    NOO  
 I can drive a car / I know how to drive a car
- b. A    **si**    **diyaamu**    **noo**    a    faŋo    ye    le  
 he    SI    talk    NOO    him    self    to    FOC  
 ‘He can talk to himself’
- (4.11) a. I    **si**    a    **tara**    **noo**    merisewo    to  
 you    SI    it    find    NOO    shop    at  
 ‘You can find it at the shop’
- b. Ñiŋ    kuwolu    **si**    **ke**    **noo**  
 this    things    SI    occur    NOO  
 ‘These things can occur’
- c. Moo    **si**    mbuuroo    **soto**    **noo**    ñaadii    le    ñiŋ    dulaa    to?  
 person    SI    bread    get    NOO    how    FOC    this    place    at  
 ‘How can one get bread in this place?’

In addition to the above-mentioned values, the SI NOO periphrasis quite regularly conveys the idea of permission (4.12.a-b) and, less commonly, volitional nuances of daring (4.12.c):<sup>199</sup>

- (4.12) a. Fo                    n    **se**    **taa**    **noo?**  
 QUES                  I    SI    go    NOO  
 ‘May I go?’
- b. I    **si**    **taa**    **noo**    saayiŋ!  
 you    SI    go    NOO    now  
 ‘You may go now!’
- c. Ite    **si**    a    **fo**    **noo**    ñaadi    le    ko  
 you    SI    it    say    NOO    how    FOC    that  
 ‘How can you (dare you) say that...’

The SI NOO construction may also express the sense of epistemic possibility. In this function, the periphrasis can be used as a future heavily coloured by modal undertones:

- (4.13) a. Ða    miira    a    **se**    **naa**    **noo**    saama  
 I    think    he    SI    come    NOO    tomorrow  
 ‘I think that he may come tomorrow / It is likely that he will come tomorrow’
- b. Sanji    **se**    **naa**    **noo**  
 rain    SI    come    NOO  
 ‘It may rain / It is likely that it will rain’

It should be emphasised that very frequently the SI NOO expression locates the above-mentioned modal nuances within a present – actual (occurring right now) or general (taking

<sup>199</sup> I re-use the same sentences as in examples 2.80 and 2.81 that were introduced in section 2.5.

place permanently) – time frame. However, as already evident from examples 4.13.a-b, in certain cases, a future temporal reading is also possible:

- (4.14) N    **si**    a    **loo noo**    kotenke    tili    naani    kono  
 I    SI    it    build NOO    again    day    four    in  
 ‘I will be able to build it again in five days’

A similar range of meanings (ability-capacity, root possibility, permission, daring and epistemic possibility) is conveyed in subordinate or dependent clauses:

- (4.15) A    niŋ    ì    kacaata, ì    **si**    a    **faa noo**    ñaameŋ  
 he    and    they    talked    they    SI    him    kill    NOO    how  
 ‘They were talking about how they could kill him’

However, in a subordinate syntactic environment, the SI NOO sequence may also introduce the idea of goal and purpose:

- (4.16) Da    duwaa    fo    a    **si**    **kana noo**  
 I.did    pray    so.that    he    SI    escape    NOO  
 ‘I prayed that he could/would escape’

### *NOO LA*

The entity *noo* is likewise found with the LA gram, yielding the NOO LA periphrasis (regarding the semantic potential of the LA form, see section 5.1). The modal load offered by this expression generally harmonises with the values displayed by the SI NOO variant. Accordingly, the locution conveys the meaning of future capacity, ability or root possibility (4.17.a-d):

- (4.17) a. I    **be**    jeroo    **ke**    **noo**    **la**    kendeke  
 you    NVP    sight    do    NOO    LA    again  
 ‘You will be able to see again’
- b. M    **be**    a    **ke**    **noo**    **la**    saama  
 I    NVP    it    do    NOO    LA    tomorrow  
 ‘I will be able to do it tomorrow’
- c. Fo            i    **be**    **naa**    **noo**    **la**    jaari  
 whether    you    NVP    come    NOO    LA    next.year  
 ‘Will you be able to come next year / Can you come next year?’
- d. Motoo **be**    **bori**    **noo**    **la**    niŋ    ŋa    a    dada  
 car    NVP    run    NOO    LA    if    I.did    it    fix  
 ‘The car will be able to run, if I fix it’

The NOO LA periphrasis can also introduce the idea of probability or epistemic possibility:

- (4.18) A **be sumayaa noo la** desemba karoo le kono  
 he NVP be.cold NOO LA December month FOC in  
 ‘It may be cold in December / It is probable that it will be cold in December’

Although in the majority of cases, the NOO LA expression makes reference to a future temporal sphere (see examples 4.17.a-d and 4.18), it may likewise – but certainly, much less commonly – introduce present (either actual or general) activities (4.19.a-b). By doing so, the locution contrasts with the SI NOO periphrasis, which primarily expresses modal values within a present time frame and less frequently refers to the future.

- (4.19) a. A ye a ñininkaa ko, “Fo ali si a ke noo?”  
 he did it ask that QUES you SI it do NOO  
 ‘He asked “Can you do it?”’  
 Ì ko a ye ko, “M be a noo la le!”  
 they said him to that I NVP it NOO LA FOC  
 They said to him “We can do it”’  
 b. Nte maj a loj. Ñij be ke noo la ñaadii le?  
 I do.not it know this NVP be NOO LA how FOC  
 ‘I don’t know it. How can this be?’

The negative variants of the NOO LA and SI NOO constructions are identical and employ the entity *te*. Consequently, the expression *te ...noo la* can make references to activities and situations located both in the present and the future time frame:

- (4.20) a. M bataata, n **te taamo noo la**  
 I am.tired I NEG.NVP walk NOO LA  
 ‘I am tired, I cannot / I will not be able to walk’  
 b. N **te a fo noo la**  
 I NEG.NVP it say NOO LA  
 ‘I cannot / will not be able to say it’  
 c. Fej te jee, Alla **te mej ke noo la**  
 thing NEG.NVP there God NEG.NVP which do NOO LA  
 ‘There is nothing that God cannot / will not be able to do’  
 d. Moo-wo-moo **te naa noo la** m yaa  
 any.one NEG.NVP come NOO LA me to  
 ‘No one can / will be able to come to me’

### KA NOO

The modal verb *noo* can also be found with the KA gram. In such cases, it usually expresses the idea of ability, capacity or root possibility (4.21.a-b). Sometimes, the nuance of permission is profiled (4.21.c).

- (4.21) a. Ì     **ka**   moyiroo     **ke**   **noo**   nuṅ  
 they   KA   hearing     do   NOO   then  
 ‘They were able to hear (They were not deaf)’
- b. Moo   **ka**   **baluu noo**   mbuuroo   dammaa    la  
 person KA   live   NOO   bread     only       with  
 ‘One can only live on bread’ (adapted from WEC 1989)
- c. A   **ka duṅ noo**   saatewo     kono   kenebaa   to  
 he   KA enter NOO   village    in       openly<sup>200</sup>  
 ‘He could not enter the village openly’

The modal situation or activity can be portrayed either as actual-current (4.22.a) or as habitual-persistent (4.22.b):

- (4.22) a. A     **ka**   a     faṅo   **tilindi noo**  
 she   KA   her   self   raise   NOO  
 ‘She could raise herself up’
- b. Alla   **ka**   feṅ-wo-feṅ   **ke**   **noo**  
 God   KA   anything   do   NOO  
 ‘God can do everything’

As is evident from the examples quoted thus far, the reference time of the KA NOO expression may be present (4.21.b, 4.27.b; see also 4.23.a, below) or past (4.21.a,c, 4.22.a; see also 4.23.b, below):

- (4.23) a. N     **ka**   **taama noo**   saayiṅ  
 I     KA   walk   can   now  
 ‘I can walk now’
- b. N     **ka**   a     **ke**   **noo**   kunuṅ  
 I     KA   it    do   NOO   yesterday  
 ‘I could do it yesterday’

One should note that the KA NOO periphrasis seems to be much more frequent in its negative variety than in the affirmative form.

#### 4.1.2 Dynamic map

The previous section has demonstrated that when used as a modal verb, the morpheme *noo* is regularly found in the company of four grams: the YE<sub>1</sub>, SI, LA and KA formations (and their respective negative variants). The YE NOO complex usually expresses the ideas of learned ability, non-learned mental/physical capacity and root possibility within a present or past time

<sup>200</sup> The expression *kenebaa to* is originally an adpositional phrase used in an adverbial function. It means ‘openly, in public, not in secrete’.

frame. In a similar vein, the SI NOO locution most commonly conveys the agentive senses of ability, capacity and root possibility, and less so the values of permission and daring. It can also express the concept of epistemic possibility and function as a future coloured by modal undertones of probability. Additionally, it appears in subordinate or dependent clauses, introducing ideas of goals and purpose. Its reference time is mainly the present or the future. The LA NOO construction offers senses that are almost identical: namely, ability, capacity, root possibility, epistemic possibility or probability, which in a future context can be interpreted as a modal future. This locution principally refers to the future although it can sometimes be used within a present time frame as well. Lastly, the KA NOO formation usually expresses ability, capacity and root possibility. Sporadically, it can be used with the sense of permission. It is typically found in a present or past time frame, referring to current or habitual activities and situations.

The data show that the four periphrases built around the verb *noo* – the NOO grams – regularly express modal ideas, in particular those that are related to the concepts of learned ability, physical or mental capacity, root possibility, epistemic possibility, probability, permission and volition. The prototypicality peak of all the NOO periphrases can be located in the area of agentive modality (learned ability and mental or physical capacity) and root possibility, as well as permission. Less common are uses in which the gram expresses volition (daring) and epistemic ideas, being possibly reinterpreted as a modal future of possibility and probability. The distinction between the four types seems to be mainly temporal, taxis and aspectual in accordance with the temporal, taxis or aspectual value of the verbal form which the entity *noo* is modifying. The future reading predominates with the LA gram (a gram of a future path; cf. section 5.1) while with the SI form, both present and future values are found (cf. section 2.5). The use of the KA and YE forms usually implies a present or past reference (cf. section 2.4 and 3.2, respectively). As a result, the modally coloured future usage is only available in the company of the LA and SI grams. It is important to note that the NOO gram must be combined with other “tenses” and cannot be used on its own as the sole predicative modal marker. It modifies a given verbal construction (the YE<sub>1</sub>, SI, LA and KA grams) with respect to modality, preserving however its principal temporal, taxis and aspectual properties.

Given the heavily modal character of the NOO periphrases and the predominance of the agentive modal values, it is likely that the NOO gram (understood as a collection of the four subtypes)<sup>201</sup> is a category developing along a genuine modal path. As explained in sections 1.2.3.3 and 1.2.3.5, grammatical moods usually emerge from two types of evolutionary trajectories: the modal contamination path and the genuine modal path. While the former scenario shows how grammatical moods derive from indicative inputs, the latter schematises the evolution from sources that, in their origin, were somehow related to modal nuances. To be exact, genuine modal clines determine the grammatical life of modal categories that are born as agentive modal expressions connoting the idea of ability-capacity,

<sup>201</sup> This means that the NOO gram is viewed as a combination of the four sub-types discussed in section 3.2.1.2. Although the qualitative map will be based on the set-theoretical union (U, i.e. objects that belong to set A or set B), the quantitative evidence will be estimated on the operation of the intersection ( $\cap$ , i.e. objects that belong to set A and set B). This means that a sense is viewed as prototypical if it is frequent for all the sub-types of the NOO formation.

obligation, desire or intention. At the next evolutionary stage, this agentive modal value generates speaker-oriented senses (e.g. permissive, imperative or prohibitive) and later epistemic uses. In some cases, such modal expressions further develop into a modally coloured future and, subsequently, into a proper future tense. Lastly, at highly advanced stages of the development, modal formations are generalised in subordinate clauses approximating the category of a subjunctive. In this environment, they can subsist for a longer time even after they have vanished from main or independent clauses (Bybee, Perkins & Pagliuca 1994:206-241 and Fischer 2007:181-182).

It has also been mentioned that within this general path to modality, one may distinguish three more specific modal trajectories that originate in three different lexical inputs: the ability path, the obligation path and the desire-movement path (cf. section 1.2.3.3). Given the close link between the NOO periphrases and the idea of ability and capacity, the ability cline seems to be especially relevant for the analysis of this gram. The ability cline derives from semantically transparent expressions of mental or physical ability. In accordance with the principles of a general modal evolution presented in detail in section 1.2.3.3, the value of learned ability progressively develops into the meaning of capacity and root possibility. Subsequently, it motivates the extensions towards permission and/or prohibition, and into the meaning of epistemic possibility and probability. These epistemic and intentional functions (that can also arise from root possibility) justify the use of an evolving construction as a modally coloured future and its possible conversion into a future tense. Additionally, these future and modal-future senses trigger a more frequent use of the NOO formation in conditional phrases, and in other syntactically based modal environments, where it is employed as a subjunctive (Bybee, Perkins & Pagliuca 1994:230-236, 295-300; cf. section 1.2.3.3).

By using the ability cline as a mapping template it is possible to design the following dynamic map of the NOO category understood as a summation of the four expressions in which the modal verb *noo* can appear. The NOO gram covers the entire length of the path spanning from the expression of knowing how to do something by having learned it, to the subjunctive uses. The most prototypical uses correspond to the initial sections of the path, i.e. ability, capacity and root possibility – all of them being related to the agentive type of modality. No less common are speaker-oriented modal senses, in particular the nuance of permission. Epistemic and modal future values are less common. Non-modal future uses are extremely rare (if ever possible) and purposive uses in subordinate clauses are also infrequent. If the NOO gram appears in this environment, it usually preserves the meanings available in main clauses. The entire map of the NOO formation can be designed as follows:

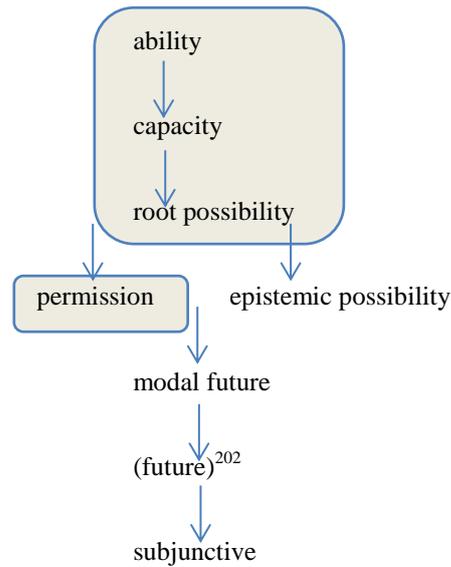


Figure 4.1: Map of the semantic space of the NOO gram

This map can be reshaped into a linear model, more suitable for the wave representation and comparison of modal grams of various – not necessary ability – origin. In this approximation, the three most original stages of dynamic modality and root possibility are grouped into the phase of agentive modality. The values associated with this stage are prototypical of the NOO gram. The second stage includes the senses of speaker-oriented and epistemic modality. This phase can only be viewed as semi-prototypical due to the following fact: Even though the value of speaker-oriented modality is relatively common, epistemic nuances are not, except for the SI NOO periphrasis and, much less so, for the NOO LA construction. The YE<sub>1</sub> NOO and KA NOO variants fail to convey an epistemic sense. The third and fourth stages correspond to a future tense (including the pre-stage of a modally coloured future) and subjunctive mood respectively. Both are non-prototypical in the semantic potential of the NOO gram, except for the SI NOO and NOO LA locutions that are formed by grams which, in their prototypical function, are used as (modal) futures and/or subjunctives. However, such future and subjunctive readings are virtually impossible in cases where the element *noo* appears with the YE<sub>1</sub> and KA grams. Taking into consideration the qualitative and quantitative evidence, the wave model of the NOO construction adopts the following approximate shape:

<sup>202</sup> The senses in parentheses are missing in my database.

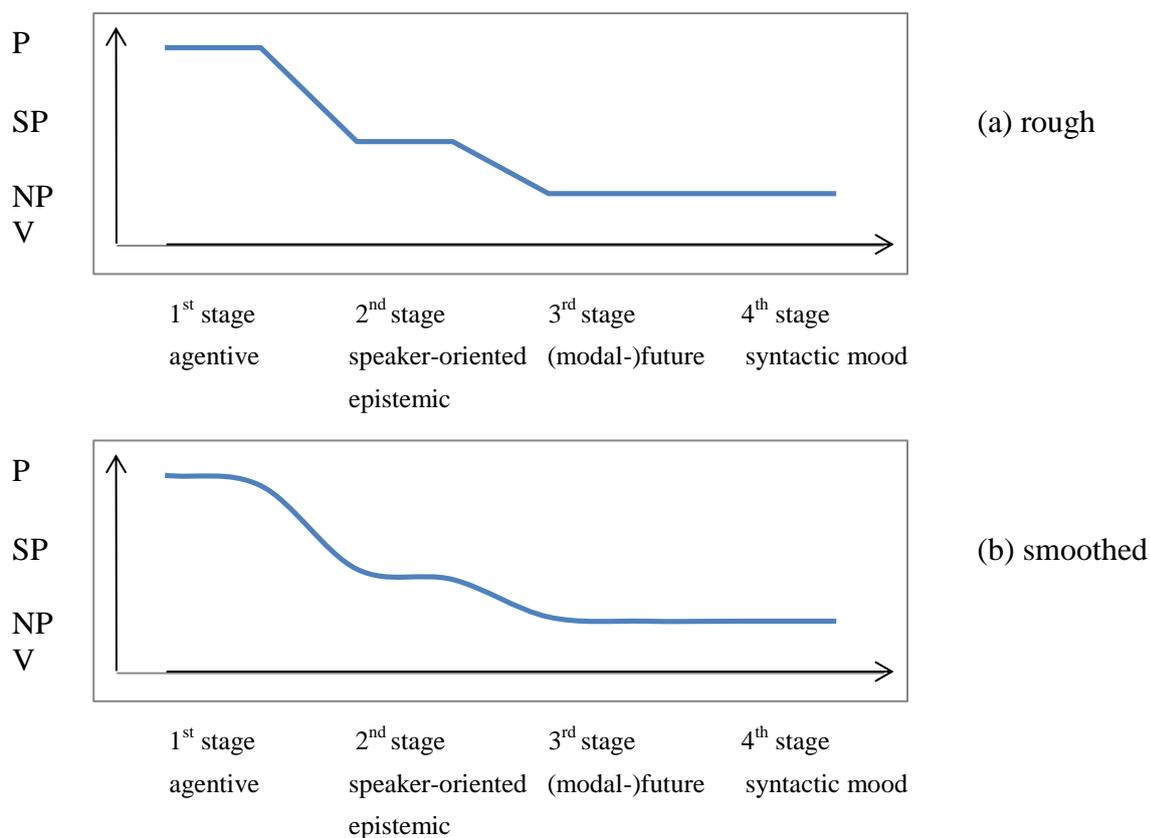


Figure 4.2: Linear model of the semantic space of the NOO gram

Within the representation limited to the modal domains (i.e. where the extension towards futurity is ignored), the coarse-grained map of the NOO gram can be imagined as mainly located in the agent-oriented stage, which constitutes the form’s prototypicality zone. As explained above, if uses that match the stages of speaker-oriented and epistemic modality are grouped into a single phase, they appear as semi-prototypical. However, if analysed separately, the speaker-oriented value can be viewed as prototypical (cf. Figure 4.3). Finally, the subjunctive uses are rare – if the gram is used in subordinate clauses it is not employed as a compulsory and/or semantically void subjunctive, but rather preserves its semantic properties found in main clauses:

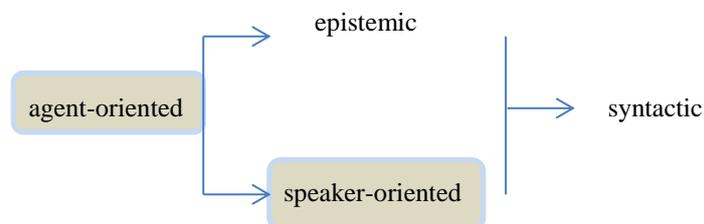


Figure 4.3: Map of the semantic space of the NOO gram – modal representation

The form of the NOO grams is almost self-explanatory, as the language includes a verb *a noo* that can be used independently with the sense ‘be able’ and ‘can’ (*ηa a noo* ‘I can do it’) from

which the series of periphrastic locutions have most likely emerged. However, there are other reasons – related to formal characteristics of the element *noo* – that seem to additionally confirm the proposed mapping. Namely, that the modal verb and auxiliary *noo* may be related to a homophonous lexeme *a noo* that exhibits a more concrete meaning, i.e. ‘conquer’ and ‘win’ (cf. examples 4.3.a-c, above). By doing so, it expresses the idea of domination and force, which is one of the most characteristic lexical inputs of modal verbs of ability. To be exact, from a crosslinguistic perspective, verbs of ‘conquering’, ‘being victorious’ or ‘being strong/powerful’ are a plausible source of the meaning of ability and capacity from which other values can be derived, as predicted by the ability path. Such verbs are lexically concrete or, at least, less abstract than the idea of ability-capacity (such as ‘be able’), which usually corresponds to a more advanced stage of semantic evolution (see, for instance, the English verb *may* that derives from the Proto-Germanic root *\*magan-/mugan-* ‘be able, can’, a successor of Proto-Indo-European *\*mVgh-* cognate to *magha* ‘force’ in Vedic; Birkmann 1987:72-74).<sup>203</sup> This cognitive transparency of the NOO periphrasis can be interpreted as compatible with the semantic non-advancement of the gram and thus its young grammatical or evolutionary age.

As far as the comparative evidence is concerned, one should note that a formation that is fully equivalent to the Basse Mandinka NOO gram is found in Maninka of Niokolo. This periphrasis is derived from the lexical verb *a nóo* ‘master’ and mainly expresses potentiality, thus approximating the predicate *pouvoir* in French (Creissels 2013b:39). It can be used with verbal nouns (*Á ye mániŋkakáño nóo* ‘He knows (He speaks) Maninka’ and *Á maŋ tíbaabukáño nóo* ‘He knows (He speaks) French’; Creissels 2013b:39) or bare infinitives (bases) of lexical verbs (*Ñíŋ mee dólóo búla nóo* ‘He cannot drop the drink’; Creissels 2013b:42).

On the contrary, Bambara lacks the NOO gram as such. The meaning of ability-capacity (‘be able’) is mainly conveyed by the expressions built around the verb *se*: *N be se* ‘I can’ or *N te se* ‘I cannot’.<sup>204</sup> However, it is important to observe that Bambara does include lexemes whose shape is similar to the entity *noo*, viz. *nɔɔɔ* ‘glory’ (*Nɔɔɔ ka da Ala kan* ‘Glory to God!’) and *nɔɔɔma* ‘glorious, one who has an aureole’.<sup>205</sup> All of these uses may suggest a more lexical foundation of the modal predicate *noo* found in Basse Mandinka, but unavailable in Bambara.

An equivalent of the NOO gram is absent in several varieties of Maninka, for instance in Kita Maninka (Keïta 1984) or Bafing-Gangaran Maninka (Dembelé 2006). To be exact, in Maninka spoken in Bafing and Gangaran (Dembelé 2006), the ideas of potentiality and ability are expressed by constructions such as *xa sin xa* ‘can, able to’ or *xa sin ... la* ‘be able to do something’ (Dembelé 2006:79; see also *N man sin xa hen san /nin sin (na)* ‘I was not able to buy things this time’ (ibid.:118)). The NOO gram also seems to be absent in other dialects of Manding, such as Maukakan (Creissels 1982), Kagoro (Creissels 1986), Korokan

<sup>203</sup> Cf. the Icelandic noun *magt* ‘force’.

<sup>204</sup> As has been mentioned in section 2.5 and will be further explained in this chapter, this verb (and the auxiliary *se/si*) may be related to the predicate *se* ‘conquer, beat’ (*Jɔn sera jɔn na?* ‘Who won?’) and to the noun *se* ‘victory’ (e.g. *se sɔɔɔ* ‘get, have (i.e. win, gain) the victory’), which could constitute a typological analogy of the above-mentioned relation between the NOO periphrases and the lexical verb *noo* ‘conquer’.

<sup>205</sup> In this context, one should also note the expression *Ala nɔ dɔn* ‘it’s thanks to God’ (Dumestre 2011:55).

(Creissels 1984) and Jula (Bracconier 1991). It fails to be found in the dialects of the Mogofin group. For instance in Lele, the idea of ability is conveyed by the verbs *cé* and *ke* (Vydrin 2009b:52, 58).

In general, the lack of regularity in the grammaticalisation of the NOO form in Manding suggests the young evolutionary age of this gram. It is relatively grammaticalised in Mandinka and Niokolo Maninka but not grammaticalised in various Manding dialects nor in the Mogofin group (which is closely related to Manding). This is compatible with the mapping proposed in this section and the definition of the NOO construction as a non-advanced modal-path (ability-path) gram.

## 4.2 The ÑANTA gram

The next construction analysed in this chapter is the ÑANTA gram. This locution is formed by the auxiliary *ñanta* and the base of a lexical verb introduced by the infinitive marker *la* (4.24.a).<sup>206</sup> The entity *ñanta* formally corresponds to a TA form of the root *ñanɲ* which can be used independently as a fully lexical predicate with the meaning ‘be necessary’ (4.24.b):

- (4.24) a.     N     **ñanta**           a     **ke**     **la**  
               I     ÑANTA       it     do     to<sup>207</sup>  
               ‘I should do it’
- b.     A     **ñanta**                   le     nuɲ  
               it     be.necessary-TA     FOC   then  
               ‘It was necessary’

Since one is dealing with a TA form of the auxiliary verb *ñanɲ* (i.e. *ñanta*), the negative variety of the ÑANTA construction appears as *maɲ ñanɲ...la*. Accordingly, it uses the negative predicative marker *maɲ* and a verbal base headed by the infinitive marker *la* (4.25.a). In various cases, however, the slot *maɲ ñanɲ* may be accompanied by a second element *la* (4.25.b):

- (4.25) a.     I     **maɲ**   **ñanɲ**                   **karanɲ na**  
               you   MAD ÑAD                   study to  
               ‘You should not study’
- b.     I     **maɲ**   **ñanɲ**                   **na**   **karanɲ na**  
               you   MAD ÑAD                   to    study to  
               ‘You should not study’

It should be noted that the ÑANTA gram allows both for transitive and intransitive constructions. It may also be formed with all types of roots, be they dynamic, static or adjectival:

<sup>206</sup> If the base of a verb ends in *-ɲ*, the postposition *la* adopts the form *na*.

<sup>207</sup> In the ÑANTA gram, I will gloss the element *la* as ‘to’, i.e. as a morpheme similar to the infinitive marker in English.

- (2.26) a. I      **ñanta**      **bambaŋ**      **na**  
 you    ÑANTA      be.strong      to  
 ‘You should be strong’
- b. Ali      **ñanta**      **naariyaa**      **la**  
 you    ÑANTA      be.lazy      to  
 ‘You should be lazy’

#### 4.2.1 Semantic potential

##### 4.2.1.1 Grammatical tradition

The ÑANTA periphrasis has attracted very little attention from linguists. Gamble (1987:21) views it as equivalent to the English auxiliary *ought*, while Colley (1995:9) merely equals it with the English verb *should*. Colley interestingly notes that the gram may refer both to the future and the past. These views may already be found in earlier grammars (cf. Macbrair 1842:20 and Rowlands 1959). As may be deduced from works written by Creissels (1983a) and Creissels & Sambou (2013), the meaning of the ÑANTA construction corresponds to mild obligation.<sup>208</sup>

##### 4.2.1.2 Evidence from Basse

Most frequently, the ÑANTA gram expresses the idea of soft obligation or root necessity. To be exact, the locution introduces advices, suggestions and attenuated orders, corresponding to the English auxiliary *should*. In these instances, the construction functions as deontic modality, concerning the necessity of acts performed by responsible agents. As mentioned above, the insistence on the accomplishment of a given activity is rather subtle – or at least not strict and harsh – by which the ÑANTA formation contrasts with firm orders introduced by the B-Imperative (cf. section 6.1) and the SI gram (cf. section 2.5). In this deontic function, the advice or soft order conveyed by the gram may be directed to the first, second and third person singular or plural:

- (4.27) a. N      **ñanta**      **tara**      **la**      m      faamaa la      bujo      kono  
 I      ÑANTA      be      to      my      father of      house in  
 ‘I should stay in my father’s house’
- b. Ñ      **ñanta**      a      **safee**      **la**  
 we    ÑANTA      it      write      to  
 ‘We should write’
- c. I      **ñanta**      a      **ke**      **la**  
 you    ÑANTA      it      do      to

<sup>208</sup> It should be noted that Creissels & Sambou (2013) focus on the locution built of the auxiliary *fidinta* equivalent to the verb *devoir* ‘should, be necessary’ in French. According to my informants this construction is not common in Basse.

- ‘You should do it’
- d. Ali **ñanta** ñiŋ wuloo **bondi** **la** jaŋ ne  
 you ÑANTA this dog remove to here FOC  
 ‘You should take out this dog from here’
- e. Moo ñiŋ ne **ñanta** **faa** **la**  
 man this FOC ÑANTA die to  
 ‘This man should die’

A similar deontic value is commonly conveyed by the negative variant of the ÑANTA construction. In this case, the ÑANTA gram introduces soft orders and suggestions, recommending the subject of the sentence not to perform a given action:

- (4.28) a. M̃ **maŋ** **ñaŋ** **na** wo **ke** la  
 we MAD ÑAD to that do to  
 ‘We should not do that’
- b. I **maŋ** **ñaŋ** **na** **taa** **la** jee  
 you MAD ÑAD to go to there  
 ‘You should not go there’
- c. Ali **maŋ** **ñaŋ** **kuuraŋ** **na**  
 you MAD ÑAD be.sick to  
 ‘You should not be sick’
- d. Musoo niŋ **maŋ** **ñaŋ** **na** **futuu** **la** kotenke  
 woman this MAD ÑAD to be.married to again  
 ‘This woman should not marry again’
- e. Kewo **maŋ** **ñaŋ** **na** a la musoo **bula** **la**  
 man MAD ÑAD to he of woman leave to  
 ‘The husband should not leave his wife’

As far as the temporal value of this use of the ÑANTA formation is concerned, the gram may introduce moderated obligations that are supposed to be performed immediately in a present or near future time frame, approximating the category of an imperative (4.29.a-b). However, the materialisation of the suggested actions may likewise take place in a more distant (not necessarily immediate) future moment which can be overtly stated in the sentence (4.29.c-d).

- (4.29) a. I **ñanta** **taa** **la** lopitaanoo to saayiŋ  
 you ÑANTA go to hospital to now  
 ‘You should go to the hospital now’
- b. I **ñanta** **bambaŋ** **na!**  
 you ÑANTA be.strong to  
 ‘You should be strong! / Be strong, please!’
- c. I **ñanta** a **ke** **la** sooma  
 you ÑANTA it do to tomorrow  
 ‘You should do it tomorrow’

- d. I      **ñanta**      **taa**    **la**      Gambiya      jaari  
 you    ÑANTA      go    to      Gambia      next.year  
 ‘You should go to Gambia next year’

Moreover, the ÑANTA construction may be employed within a past time frame, indicating that a given action was advisable or obligatory and therefore should be performed at a certain moment in the past. In other words, the prospective value of advice or soft obligation may be introduced from a past perspective:

- (4.30) a. A    ye    a      fo      n      ye      ko      n      **ñanta**      **naa**    **la**  
 he   did   it      say    me    to      saying   I      ÑANTA      come   to  
 ‘He told me that I should come’
- b. Ì      ka      feŋolu    le      fo,  
 they   KA    things   FOC    tell  
 ‘They were telling things,  
     ì      **ñanta**      menu   **fo**      **la**  
     they   ÑANTA      which   tell      to  
     which they should tell’

In questions directed to the first person singular and plural, the ÑANTA gram may be interpreted as expressing a deliberative value rather than an obligation:

- (4.31) Ñ      **ñanta**      muŋ    ne      **ke**      **la?**  
 we    ÑANTA      what   FOC    do      to  
 ‘What should we do?’

Much less frequently, the ÑANTA gram expresses epistemic necessity. In such cases, it is not the agent (i.e. the subject of the sentence) that is obliged to do something, but the event itself is judged as necessary to happen. Accordingly, the formation functions as extra-propositional or extrinsic modality and expresses the speaker’s attitude with respect to the proposition and its truth.

- (4.32) a. A      **ñanta**      **ke**      **la**      tooña    le      ti  
 it      ÑANTA      be      to      truth    FOC      EXIS  
 ‘It should be true’
- b. A      **ñanta**    **tara**    **la**      jaŋ  
 he    should   be    to      here  
 ‘He should be here’

As was the case with the nuance of deontic necessity described previously, the idea of epistemic necessity is typically viewed as attenuated, yielding the sense of epistemic probability, i.e. that something will (most) probably happen.

- (4.33) a. Ñiŋ kumoolu ñanta timma la  
 this words ÑANTA be.fulfilled to  
 ‘These words should be fulfilled/Most probably, these words will be fulfilled’
- b. A ñanta naa la kotenke  
 he ÑANTA come to again  
 ‘He should come again/Most probably, He will come again’
- c. M faamaa ñanta kuniŋ na talaŋ wooro  
 my father ÑANTA wake.up to hour six  
 ‘My father should wake up at six’
- d. N ñanta jii la talaŋ naani  
 I ÑANTA close to hour four  
 ‘I should close at four’

On relatively rare occasions, this epistemic modal sense gives rise to a modally coloured future or future of probability, clearly akin to the previously discussed value:

- (4.34) Samaa ñanta naa la saama  
 rain ÑANTA come to tomorrow  
 ‘Rain should come tomorrow / It may rain tomorrow’

The ÑANTA locution may also express wishes or desires. In this function, although being aware that an action did not happen, the enunciator desires that it should have occurred (35.a-b). Sometimes, the gram indicates that something is (or was) expected to have happened (35.c). The two senses concern the modal domain of unreal counterfactuality and constitute meaning extensions from the deontic and epistemic values described above:

- (4.35) a. N ñanta a ke la kunuŋ  
 I ÑANTA it do to yesterday  
 ‘I should have done it yesterday’
- b. Ali ñanta n na yaamaroolu muta la le nuŋ  
 you ÑANTA me of advices seize to FOC then  
 ‘You should have listened to my advice’
- c. Samaa ñanta naa la kunuŋ bari a maŋ naa  
 rain ÑANTA come to yesterday but it did.not come  
 ‘It should have rained yesterday but it didn’t’

Lastly, the ÑANTA gram may appear in subordinate clauses of purpose and goal as an alternative to the YE<sub>1</sub> and SI forms – or their negative KANA. However, in all such cases, the ÑANTA construction regularly conveys the value of deontic and epistemic necessity or probability, typical of main clauses.

- (4.36) a. A ye moolu karandi ko, ì ñanta duwaa la le,  
 he did people teach that they ÑANTA pray to FOC

‘He taught the people that they should pray  
 aduŋ ì kana jikilateyi  
 and they should.not despair  
 and that they should not despair’

- b. A maŋ a fo ko ì ñanta taa la  
 he did.not it say that they ÑANTA go to  
 ‘He did not say it so that they would go’

#### 4.2.2 Dynamic map

The evidence presented above demonstrates that the semantic potential of the ÑANTA gram consists of a number of components. Most frequently, the ÑANTA formation expresses nuances related to deontic modality. To be exact, it conveys the idea of agentive necessity, indicating that the subject is obliged to perform a given activity. In this function, it applies to the first, second and third person singular and plural. This deontic value is subtle in the sense that the gram introduces advice, suggestions and more polite orders. Typically, it refers to present and future time frames (both near-immediate and distant). However, advice or obligation may also be introduced from a past perspective. When directed to the first person singular or plural, the locution can convey the meaning of deliberation. Less commonly, the gram conveys the idea of epistemic necessity. Since this necessity is attenuated, it gives rise to the sense of probability, which, in turn, when applied to a future time frame, is reinterpreted as a modal future of likelihood. Additionally, the epistemic value of the ÑANTA form may be extrapolated to a past time frame, introducing unreal and counterfactual wishes. Lastly, it may appear in subordinate clauses where it introduces the ideas of purpose and goal. Among all these senses, the agentive and speaker-oriented (deontic) values of obligation and necessity are the most prototypical. Epistemic senses, modal future of probability, and purposive values in subordinate clauses are less frequent and may all be viewed as non-prototypical. Among these values, (modal) future senses and genuine subjunctive uses seem to be the least prototypical. The former are infrequent while the latter regularly preserve the deontic value found in main clauses.

Because of the clearly modal character of the ÑANTA gram and that it expresses agentive modal nuances, typical of initial stages of genuine modal clines, it is likely that its semantic potential should be networked and explained by means of a template based on a genuine modal path. Furthermore, given the relevance of the value of obligation placed upon the grammatical subject, it seems probable that the gram has been traveling along the obligation path – one of the three main scenarios leading to modality. As explained in section 1.2.3.5, in this path, certain modal grams emerge from explicit modal periphrases conveying the idea of necessity or obligation. In line with the general tendency valid for all genuine modal paths, at the beginning, an agent-oriented modal sense (in this case, the nuance of obligation) expands to speaker-oriented uses (e.g. imperative, prohibitive or optative) and, later, to epistemic values (potentiality). Subsequently, the epistemic value motivates the use of the gram as a modally marked future, additionally triggering its more extensive presence in conditional protases, concessive contexts, and other syntactically dependent modal situations.

Once generalised in subordinate clauses, such modal grams may survive as subjunctives, even though they have disappeared from principal and independent clauses (Bybee, Perkins & Pagliuca 1994:206-241 and 258-264).

The ÑANTA form covers the entire length of the obligation cline, providing senses that correspond to the stages of agentive deontic modality, a soft imperative, epistemic modality, modal future of probability and syntactic modality (subjunctive). As explained previously, the prototypicality area of the gram corresponds to the agentive (deontic) value, which is located in the initial stage of the cline. Speaker-oriented senses – i.e. soft imperative and deliberative values – are also relatively common. However, the epistemic and modal future meanings are much less common. Non-modal future uses are extremely rare (if ever possible) and properly subjunctive (compulsory and semantically void) uses in subordinate clauses are infrequent. In subordinate clauses, the gram typically preserves the modal senses offered in main clauses – it is only used if such values must be made explicit. The holistic map of the ÑANTA construction may be formulated in the following manner:

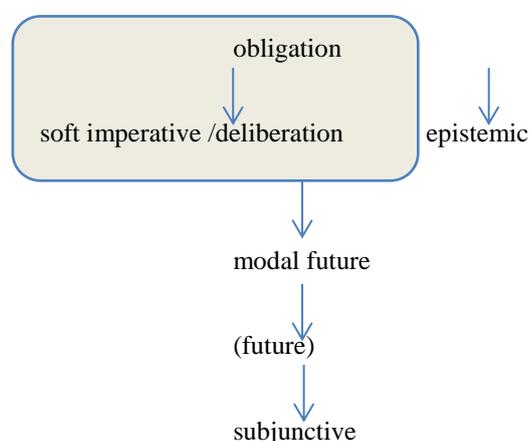


Figure 4.4: Map of the semantic space of the ÑANTA gram

This map can be reshaped into a linear model more suitable for the wave representation and comparison of various modal grams (cf. Figure 4.5, below). As was the case with the NOO form, this model is more coarse-grained and only includes four stages. In particular, the second stage encompasses the values of speaker-oriented modality and epistemic modality. Therefore, at this stage, the total degree of prototypicality of the ÑANTA construction only ascends to a semi-prototypical value. In addition, modal and non-modal future senses are grouped together in a single category. As can be observed, the wave model of the NOO and ÑANTA grams are identical. The main difference between the ÑANTA and NOO locutions concerns particular types of modality and may clearly be seen at the first two stages. While the NOO form expresses the ideas of capacity and possibility, the ÑANTA gram indicates necessity and probability. In the modal future functions, the NOO form expresses the possibility of something occurring (it can happen) while the ÑANTA form suggests that it is probable (it should likely happen).

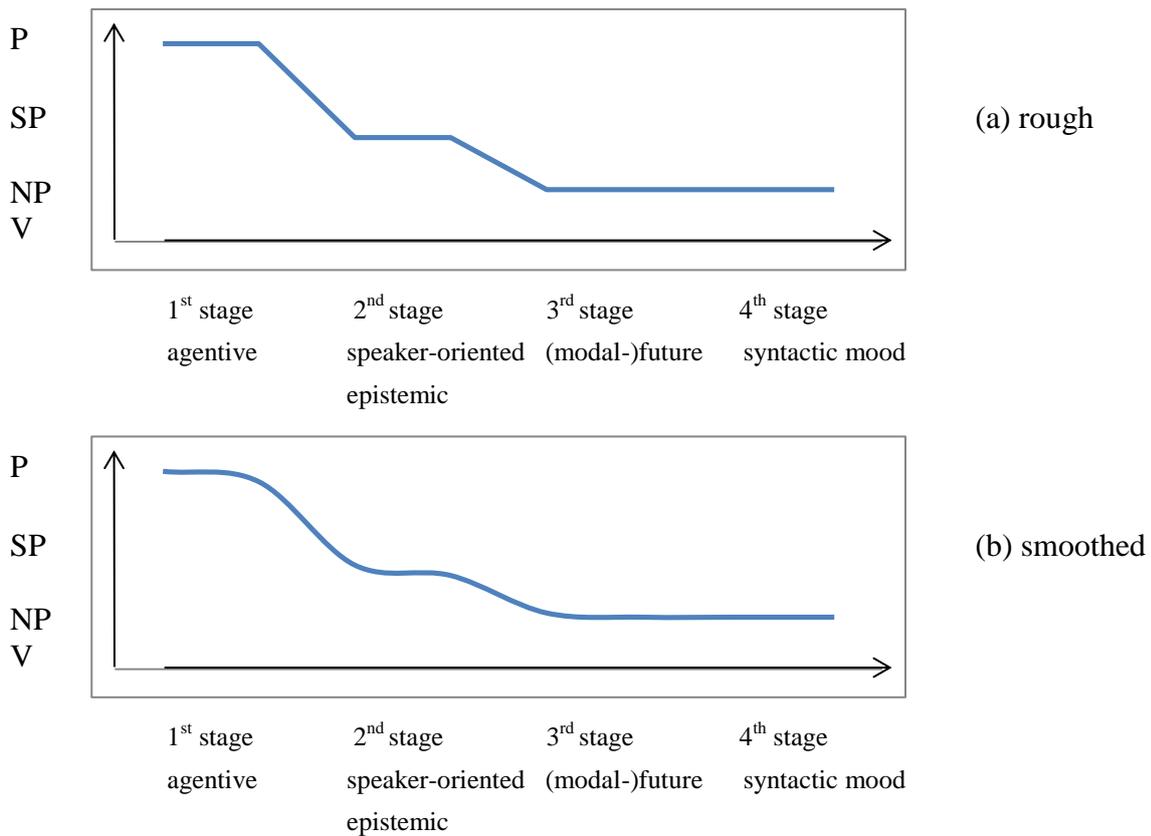


Figure 4.5: Linear model of the semantic space of the ÑANTA gram

If the extensions towards futurity are disregarded and the second stage is split into two separated domains (i.e. into a speaker-oriented sense and an epistemic sense), the map of the ÑANTA formation can be designed in the following manner:

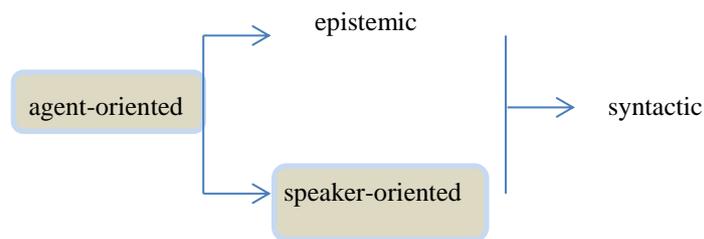


Figure 4.6: Map of the semantic space of the ÑANTA gram – modal representation

The form of the ÑANTA gram confirms its relation to the obligation path. As mentioned previously, Basse Mandinka possesses a homophonous predicate *ñanɲ* which can be used independently with the meaning ‘be necessary, be obligatory’. This root can be used in all possible verbal grams. The modal entity *ñanta* found in the ÑANTA gram corresponds to the TA form of this verb, which may explain its less firm sense of necessity. This phenomenon is crosslinguistically common. For example, in Germanic, Slavic or Romance languages, modal verbs in the present tense have a strong and/or direct modal sense, while their past

counterparts tend to offer a more attenuated and/or less direct modal meaning: cf. *shall* versus *should* and *can* versus *could* in English; *vil* ‘want’ versus *vildi* ‘wanted’ in Icelandic; or *chce* ‘want’ versus *chcialem* ‘wanted’ on Polish. This cognitive transparency of the ÑANTA construction is compatible with its young evolutionary age, being defined as a non-advanced modal-path gram.

To complete the picture of the ÑANTA form, some comparative evidence can be introduced. A cognate gram with the meaning of obligation (similar to ‘should’ and ‘shall’) may be found in Maninka of Niokolo: *I ñánta η má feléla lée* ‘You should examine me’ or *I ñánta tayalá kenáa to* ‘You should go to the field’ (Creissels 2013b:59, 61).<sup>209</sup> However, more frequently, the meaning of obligation is expressed in Maninka of Niokolo by means of the verb *kaŋ* ‘should’: *Á kanta náala lée* ‘He should come’ (ibid.:74). There is also an additional category of the so-called ‘obligatif’ composed of the auxiliary *kámmu*: *I kámmu ñíŋ kela lée* ‘You should do this’ (ibid.:44).

The ÑANTA construction is missing in Bambara, where, just like in Maninka of Niokolo, a periphrasis with the entity *kan* ‘be necessary’ is employed to express the idea of soft necessity and obligation: *Denmisenw ka kan ka nɔnɔ min* ‘The children should drink milk’. The same holds true for Maninka of Bafing and Gangaran (Dembelé 2006), where the periphrasis *xa xan xa* is used. The ÑANTA gram seems to be absent in other Manding dialects, for example in Kita Maninka (Keita 1984), Maukakan (Creissels 1982), in Kagoro (Creissels 1986), Korokan (Creissels 1984) and Jula (Bracconier 1991). Lele and Koranko (Mogofin) also seem to use other constructions to express the ideas typical of the ÑANTA form. To be exact, Lele employs the locution built around the element *fó* (*fo n de baaya ke* ‘I should work’; Vydrin 2009b:47, 56) while Koranko uses the predicative marker *ní* (*ń ní tá káka* ‘I should go now’; Kastenholz 1983:67-68). As was the case with the NOO gram, the lack of consistency in the use of the ÑANTA gram in Manding and Mogofin as the main expression of agentive and speaker-oriented obligation may be related to the young evolutionary age of this periphrasis and its semantic non-advancement on the modal path.

#### 4.3 The MAA gram

The third verbal form of the modal-path type is the MAA gram. In its most common shape, this locution is formed by the entity *maa* and the base of a lexical verb introduced by the infinitive marker *la*. The MAA gram is always employed in the company of the word *Alla* ‘God’ which appears at the beginning of the sentence:

- (4.37)      *Alla maa suutoo diyaa la!*  
               God    MAA night be.sweet    to<sup>210</sup>  
               ‘May God make the night sweet / God, may the night be sweet!’

<sup>209</sup> One should note that the verb *ñáŋ* is only attested in its auxiliary function as *ñánta* (or *maŋ ñáŋ* in the negative; Creissels 2013b:75).

<sup>210</sup> In the MAA gram, the element *la* will be glossed as ‘to’.

Although the MAA formation has been analysed as a complex predicate where the morpheme *maa* is a predicative modal marker and the whole construction invariably transitive (i.e. there is always an nominal or pronominal entity between the morpheme *maa* and the base of a meaning verb; cf. section 4.3.2), I will argue that – at least originally – it is rather composed of two small phrases: the exclamatory expression *Alla maa* ‘God!’ and a verb phrase: infinitival (base with *la*), optative (*ye* + base) or prohibitive (*kana* + base; cf. Dumestre 1997:41 and Tröbs 2009:231-232).

This double phrasal structure can clearly be seen in the affirmative “optative” variety (*maa ye* + base) and in the negative construction (*maa kana* + base). To be exact, in certain cases – apparently, less common than the infinitival subtype (i.e. *Alla maa* + base + *la*) – the slot *Alla maa* is followed by the YE<sub>2</sub> gram (a directive and/or optative form; cf. section 6.2). Such examples clearly show the double phrasal structure of the entire expression: the sequence *Alla maa* functions as an exclamatory or introductory topicalisation phrase, while the genuine verb phrase (or even a verbal clause) is headed by the YE<sub>2</sub> gram with its subject and/or object. Although the subject of the YE<sub>1</sub> gram directly follows the marker *maa*, it cannot be analysed as an object of the MAA formation. As stated above, it should rather be viewed as the subject of the verb in the YE<sub>1</sub> gram, introduced by the exclamatory expression or topicalisation phrase *Alla ma*.

- (4.38) a.      *Alla maa a ye ke moo bete ti*  
                  God MAA he YE<sub>2</sub> be person good EXIS  
                  ‘God, may he become a good person!’
- b.      *Alla maa ì ñaalu ye finki*  
                  God MAA their eyes YE<sub>2</sub> be.blind  
                  ‘God, may their eyes be blind!’

This double phrasal structure is also clearly perceivable in a negative variant of the MAA gram. The negative equivalent of the MAA gram is formed by introducing to the periphrasis the auxiliary *kana* and deleting the marker *la* (4.39). It should be noted that in Basse Mandinka, the MAA gram admits negative uses contrary to the situation observed in other Mandinka varieties where equivalents of the MAA form are exclusively affirmative (cf. Creissels & Sambou 2013:433-434).

- (4.39)      *Alla maa wo kana ke!*  
                  God MAA that NEG occur  
                  ‘Make God prevent it from happening / God! May that not occur!’

In Basse Mandinka, negative variants of all genuine verbal grams are derived by following a simple rule: the affirmative morpheme is merely replaced by its negative equivalent. As a result, the two markers (affirmative and negative) always occupy the same position – just like its affirmative equivalent, the negative variety invariably introduces the verbal base (in case of a transitive verb, the object stands between the TTAM morpheme and the base).<sup>211</sup> This

<sup>211</sup> This discussion does not apply to grams built around verbal nouns.

principle may be illustrated by the following examples: *a be ke kaŋ* – *a te ke kaŋ* (the KAD gram and all the grams built of the non-verbal predicate *be*), *a ka ke* – *a buka ke* (the KA gram); *a si ke* – *a kana ke* (or *a te ke la*; the SI gram); *a naata ke* – *a maŋ naa ke* (the NAATA gram); and *a ye ke* – *a maŋ ke* (the YE<sub>1</sub> gram). In the case of the TA formation (*keta*), its negative equivalent also regularly places the negative marker before the base (*a maŋ ke*).

In the MAA formation, the negation is derived differently. The morpheme *maa* with the obligatory word *Alla* is preserved intact and the information concerning the negation is placed after it, i.e. in the verbal phrase. In fact, the negative MAA makes use of a regular prohibitive marker *kana*. For transitive constructions, the prohibitive KANA form regularly appears as *kana* + object + base (e.g. *Kana a ke* ‘Don’t do it!’). For intransitive constructions, it appears as (subject) + *kana* + base (*Kana naa!* ‘Don’t come’ or, in the case of the third person, *Wo kana ke!* ‘May that not occur!’). Since the expression *Wo kana ke!* can function independently as the prohibitive KANA gram, the expression *Alla maa* is not a predicative marker *sensu stricto* but rather an exclamatory particle or topicalisation marker that makes this exclamatory force explicit. In the prohibitive KANA form, the nominal or pronominal entity heading *kana* can never be interpreted as an object – it is the subject of an intransitive expression. As mentioned above, in order to be transitive, the construction should be reshaped in the following way: *Kana wo ke!* ‘Don’t do it!’ with a nominal element placed between the predicative marker *kana* and the verbal base. If the entity *maa* in the MAA gram were a comparable tense-taxis-aspect-mood marker as all the other auxiliaries and, thus, the word *Alla* were the subject and the nominal entity following *maa* the object, the rule regulating the formation of negatives would be transgressed. Moreover, the negative marker *kana* would have two different places for the object: one in the prohibitive KANA gram after the morpheme *kana* and the other in the MAA expression before the element *kana*.

Therefore, it is more plausible to argue that in the affirmative construction, the nominal and/or pronominal element located between the marker *maa* and the slot composed of a base and the infinitive marker *la* is similarly the subject of a verbal base, being merely headed by the exclamatory expression *Alla maa*.

However, the structure of the affirmative infinitival MAA gram resembles the form of the LA gram and related constructions. Compare the place of the four elements found in the MAA and LA formations: *Alla<sub>1</sub> maa<sub>2</sub> suutoo<sub>3</sub> diyaa<sub>3</sub> la<sub>4</sub>* ‘May God make the night sweet’ versus *A<sub>1</sub> be<sub>2</sub> a<sub>3</sub> ke<sub>4</sub> la<sub>5</sub>* ‘He will do it’. The parallelism between the two sequences may yield a – partial – reinterpretation (or at least perception by the speakers) of the bi-phrasal MAA gram as a mono-phrasal construction with *maa* as a modality marker, with the word *Alla* as the subject and *suutoo* as the object. To explain this in purely semantic terms – besides a possible analogical extension from the dominant morphosyntactic pattern found in verbal grams in Basse Mandinka (i.e. subject + marker [+ object] + base) – one could argue the following. God is the receptor of the exclamation, being viewed as the ultimate agent of everything. Given this semantic perspective, God (and hence the word *Alla*) could be reinterpreted as the subject of the entire locution, while the original subject of the verb phrase could be reinterpreted as the object. In this manner, the infinitival MAA formation would exhibit a greater degree of grammaticalisation than the optative (*maa* + YE<sub>2</sub>) and the

prohibitive (*maa* + KANA) constructions. It is probable that even further grammaticalisation may be observed in cases where the infinitive marker *la* is omitted (4.40.a-c). In such examples, the structure of the MAA construction can in fact be synchronically interpreted as transitive with the subject (*Alla*), auxiliary marker *maa*, obligatory object and verbal base:

- (4.40) a.   Alla   **maa**   i       **siimaayaa**  
           God   MAA   you    live.long  
           ‘God, may you have long life! → May god grant you a long life!’
- b.   Alla   **maa**   i       **harijee**  
           God   MAA   you    be.pregnant/lucky  
           ‘God, may you be lucky/pregnant! → May God make you lucky!’
- c.   Alla   **maa**   ñ       **deemaa**  
           God   MAA   we     help  
           ‘God, may we be helped! → May God help us!’

Consequently, the various subtypes of the MAA gram in Basse Mandinka may attest three distinct stages of grammaticalisation and, thus, three different evolutionary phases. The original bi-phrasal expressions with YE<sub>2</sub> and KANA correspond to the most original stage where the slot *Alla maa* was used as an exclamatory phrase and the item *maa* as a topicalisation marker introducing the lexical verb in a given verbal gram (i.e. in the YE<sub>2</sub> or KANA formations). At this stage *maa* does not function as a taxis-tense-aspect-mood marker. The infinitival uses of the MAA gram – the most common ones and the ones that will be analysed in this section – bear witness to this partial grammaticalisation. This construction suggests the fuzzy transitory status of the morpheme *maa* and the MAA gram (in particular, its argument structure). Finally, the uses where the base is employed alone (which are the least common) demonstrate a further advancement in grammaticalisation. In this variant, the MAA gram has been adjusted to the dominant pattern of verbal grams in the language. The two independent constructions (exclamatory topicalisation phase and a verb phrase) have merged into a single verbal gram. Accordingly, the exclamatory particle has been reanalysed as an equivalent of a taxis-tense-aspect-mood marker, the heading (topicalised) noun as the subject and the original subject of the verbal clause as the object of the MAA gram (Tröbs Dumestre 1997:41, 2009:231-232).<sup>212</sup>

<sup>212</sup> Of course, this division is much less clear-cut than hypothesised here.

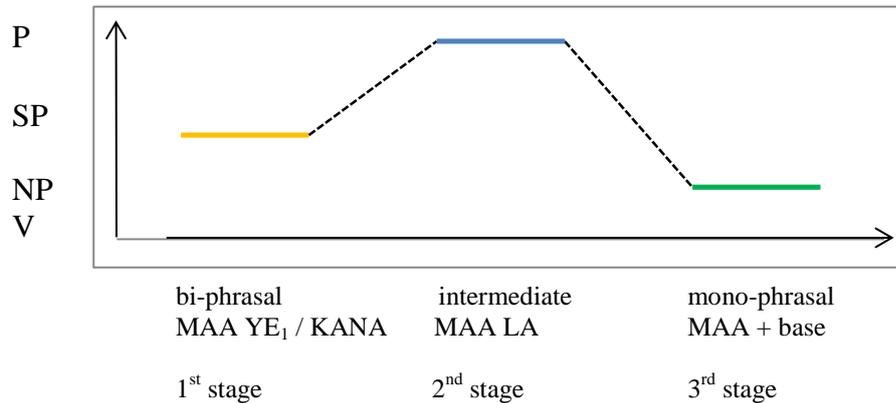


Figure 4.7: Grammaticalisation status of the variants of MAA

#### 4.3.1 Semantic potential

##### 4.3.1.1 Grammatical tradition

In the studies dedicated to the Gambian Mandinka language, the MAA gram has only been mentioned sketchily. Macbrair (1842:65) provides a very few examples of this construction without venturing into any type of grammatical analysis. In his illustrations, the MAA form is translated by means of the English modal auxiliary *may*. Gamble (1987:21) dedicates one short paragraph to the MAA periphrasis classifying it – just like Macbrair – as an equivalent of the English verb *may*, being typically used in prayers. Lastly, WEC (1995:3) defines the MAA gram as an expression of wishful prayers invariably employed with the introductory word *Alla* ‘God’ (for similar views, see Hamlyn 1935, Rowlands 1959 and Creissels 1983a). Creissels & Sambou (2013:433-434) classify the construction as an optative, found only in the affirmative context.

##### 4.3.1.2 Evidence from Basse

The MAA gram expresses prayers, supplications and implorations, addressed to God. In this function, the enunciator beseeches the deity that a certain thing should occur (4.41) or – if a negative form is used – that a given phenomenon should not happen (see example 4.39).

- (4.41) a.   Alla   **maa**   i       **fisiyaa**   **la!**  
 God   MAA   you   be.better   to  
 ‘God, may you get better! / May God make you feel better!’
- b.   Alla   **maa**   ñ       nii   **siimaayaa**   **la**  
 God   MAA   our   life   be.long   to  
 ‘God, may our life be long! / May God grant us long life!’
- c.   Alla   **maa**   a       **tu**           **la**   a   ye  
 God   MAA   it   be.forgiven   to   him   for  
 ‘God, may it be forgiven to him / May God forgive him!’

It is, thus, best defined as a fervent optative formation directed to God. The receptor of the action expressed by the verbal base can be the first (4.42.a-b), second (4.42.c-d) or third person (4.42.e-f) singular and/or plural.

- (4.42) a. Alla **maa** ñ **deemaa** **la**  
 God MAA we help to  
 ‘God, may we be helped! / May God help us!’
- b. Alla **maa** n tanka **la!**  
 God MAA I be.protected to  
 ‘God, may I be protected! / May God protect me!’
- c. Alla **maa** i **kendeyaa**  
 God MAA you be.healthy  
 ‘God, may you be healthy!’
- d. Alla **maa** i **ke la** moo bete ti  
 God MAA you be to man good EXIS  
 ‘God, may you be a good man! / May God make you a good man!’
- e. Alla **maa** deenaanoo **baluu la**  
 God MAA baby live to  
 ‘God, may the baby live (long)! / May God make the baby live (long)’
- f. Alla **maa** a **ke la**  
 God MAA it happen to  
 ‘God, may it happen! / May God do it!’

Semantically, the MAA gram is proximate to an imperative directed to God and preceded by the exclamatory particle *ya*, probably borrowed from Arabic  $يَا$  *yā*. However, in contrast to the genuine imperative form, viz. the B-Imperative (cf. section 6.1), the MAA formation has a milder and less direct force.

- (4.43) Ya Mari Alla hina ntolu la!  
 Oh! Lord God have.mercy us with  
 Oh Lord God, have mercy upon us!

One should also note that the MAA gram is commonly used in speech only in fixed idiomatic phrases. All the other examples are found extremely seldom.

- (4.44) a. Alla **maa** i **kanta la**  
 God MAA you be.protected to  
 ‘Farewell! (May you be protected)’
- b. Alla **maa** suutoo **diyaa la!**  
 God MAA night be.sweet to  
 ‘Good night! (May the night be sweet)’

Some of such fixed expressions have even been reanalysed as quasi nominal concepts: *Allamaabee* ‘next year’ from a periphrasis *Alla m maabee* ‘God, may I be present! / May God make me present!’ (WEC 1995:3).

#### 4.3.2 Dynamic map

The evidence shows that the semantic potential of the MAA gram is quite limited. The formation is mainly used as an optative category expressing wishes and prayers. It appears uniquely in one syntactic environment – i.e. when headed by the word *Alla* – and in general is extremely seldom used. The only cases where the locution appears in colloquial speech with a relative commonness are in fixed phrases. In such idiomatic uses, the whole expression of which the MAA gram is a part usually acquires a special meaning (e.g. ‘farewell’, ‘goodnight’ or ‘next year’).

The highly reduced semantic potential of the MAA gram is not sufficient to posit a map of meaning for this locution. However, it does suggest that the formation may be understood as a modal-path gram, a speaker-oriented mood or an optative limited to a particular environment, i.e. directed to God and introduced by the word *Alla*. One should note that the MAA formation does not offer any agentive, epistemic, modal future or future senses. Nor does it appear in subjunctive uses, e.g. in final and purpose clauses or in conditional protases. Its unique and exemplary function is optative. The receptor of the wish (and, thus, the agent) expressed by the optative MAA is God, while the patient of the wish (and, hence, the person or object that may benefit from it) can refer to the first, second and third person, be they human beings, animated creatures or inanimate things.

Although the structure of the MAA gram is not entirely transparent and the exact meaning of the morpheme *maa* is not uncontroversial (see further below in this section), certain formal properties discussed in section 4.4.1 enable us to hypothesise the origin of the MAA construction and identify it with a determined modal cline. Namely, the formal characteristics of the MAA gram suggest that the locution derives from a periphrastic, two-phrase expression where the properly verbal clause would be introduced by an exclamatory phrase *Alla maa*. It is possible to hypothesise that this phrase itself consists of a noun *Alla* and a postposition, topicalisation marker or exclamatory particle (see further below in this section). Whatever the exact origin of the element *maa* is, the slot *Alla maa* overtly imposed an optative context in which the verbal clause was embedded, thus requiring a modal interpretation of the entire expression. It is therefore not surprising that the bi-phrasal subtypes of the MAA construction still employ two categories whose prototypical meaning corresponds to an optative, i.e. the YE<sub>2</sub> and KANA grams. In the case of an infinitival subclass of the MAA locution, the modal value clearly stems from the exclamatory and optative sense of the introductory phrase *Alla maa*. If such a reconstruction is accepted, the MAA gram emerged from a periphrastic exclamatory optative expression, arguably a source of a genuine modal cline. Since the MAA form offers only an optative sense, which belongs to the speaker-oriented group of modal values, it can be dynamically classified as a modal-path gram in a mid-stage of its grammaticalisation. The degree of prototypicality offered by



always introduced by the word *Ála* ‘God’ and is usually viewed as an optative directed to God. To be exact, Samassekou (1981) defines it as “injonctif projectif”, while Koné (1984:20) classifies it as a “projectif” directed towards the future, possibly replaceable and, thus, equivalent to the more general optative in *ká*. Blecke (1988/2004:41-42) understands the *máa* form as a marginal mood of an optative, with a very limited range of meaning, being restricted to desires and prayers addressed to God. Similarly, Dumestre (2003:213) views it as an optative equivalent of the “projectif” *ká* in benedictions.

What distinguishes the *máa* locution in Bambara from the Basse Mandinka MAA gram is that in Bambara the morpheme *máa* introduces the Bambara equivalent of the Basse Mandinka TA form (i.e. the base accompanied by the ending *-ra*, *-la* or *-na*): *Ála máa i demena!* ‘May God help you!’ (Dumestre 2011:654; cf. Dumestre 1989b:84 and 1997:41).<sup>214</sup> In traditional grammatical studies, the nominal or pronominal entity that appears between *máa* and the verb in the “perfective” (*-ra*, *-la* or *-na*) form is usually analysed as an object of the whole expression, while the word *Ála* is viewed as its subject. Accordingly, the construction and the verbal base used in it are both transitive but the verbal base appears in the TA form, which is otherwise impossible in transitive constructions. In other words, the gram is analysed as having the word *Ála* as its subject and a noun or pronoun as its necessary object placed after the morpheme *máa* and before the lexical verb in the TA gram: it is, thus, invariably transitive but with the TA form of the lexical verb, which is inaccessible in transitive constructions (Koné 1984:20, Blecke 1988/2004:41-42). This fact, i.e. the combination of *máa* with *-ra* in a transitive construction, constitutes a paradox in Bambara grammar (cf. Blecke *ibid.*). However, if one admits the explanation proposed for the MAA gram in Basse Mandinka, the use of the equivalent of the TA form in Bambara ceases to be odd. The slot *Ála máa* would be an exclamatory expression introducing the genuine verbal phrase with its subject (cf. Tröbs 2009:231-232). This verbal expression could be intransitive and therefore acceptable in the intransitive of the “perfective”, i.e. in the Bambara equivalent of the TA gram. This means that the structural evidence from Bambara may be understood as strengthening the proposed periphrastic origin of the MAA gram, i.e. as composed of two phrases: one exclamatory and one verbal (for a similar position, see Dumestre 1997 and Tröbs 2009). In Bambara, the modal reinterpretation of the “perfective” would correspond to a modal contamination induced by the exclamatory phrase *Ála máa*. Such a reuse of an anterior-path gram for optative purposes is quite well documented typologically (for details of this phenomenon, see sections 1.2.3.5 and 6.2).

In Maninka of Niokolo, a functionally comparable construction is the so-called optative (Creissels 2013b:120). This locution is composed of the word *Alá* ‘God’, the element *mu* (“un mot prédicatif special” identical to the predicative marker of identification; *ibid.*), the base and the infinitive marker *la*: *Alá mu i kantála!* ‘May God protect you!’ and *Alá mu dindiño balúula!* ‘May God make the child live!’ (*ibid.*:120-121). It appears only in an affirmative context. A similar situation is found in Kita Maninka, where the sequence *álá*

<sup>214</sup> In negative, the Bambara expression is regularly substituted by the negative subjunctive *kàna*.

*mán* + verb-*lá* is used as an optative: *Álá mán à bàlùlà* ‘May God make him live!’ (Keïta 1984:59).<sup>215</sup>

A possible cognate to the MAA gram may be found in Maninka of Bafing and Gangaran (Dembelé 2006:118): *Ala m’an sɔnna* ‘May God provide us with something’ and *Ala m’a kela hera ti* ‘May it be a success’. However, much more commonly one uses a different construction built around the auxiliary *xa*: *ala x’an n’i sɔn* ‘May God provide us with something’, *Amiina! Ala xa duwawu mita* ‘Amen! May God accept the wishes’ or *Ala xe juma si* ‘May you arrive well’ (ibid.:46, 118-119).<sup>216</sup>

Overall, the semantic properties of the cognates of the MAA construction in Manding are consistent with the dynamic wave model posited in this section. Their common presence is also compatible with the classification of the MAA form. It suggests a considerable grammatical maturity of this formation, which harmonises with its definition as a semi-advanced modal-path gram.

As mentioned above at this stage of research, it is impossible to precisely determine the lexical input of (*Alla*) *maa* in Basse Mandinka or (*Ála*) *má(a)* in Bambara. However, two possible scenarios can be proposed. First, in Bambara the element *má(a)* could be related to the word *má* (also with a high tone) that signifies ‘master, lord’ and by extension ‘god’ (Dumestre 2011:654). Accordingly, the expression *Ála má(a)* could be an exclamatory phrase with a sense similar to ‘God Lord!’ or ‘Master God!’. Its exclamatory force would be comparable with the value offered by the expression *Ála káma* ‘God! / In the name of God!’. Second, and significantly more likely, the element *maa* in the MAA gram may be related to the postposition *ma*. To be exact, in some cases, the entity *má(a)* may have a low tone (cf. Dumestre 2003:213) just like the postposition *mà* ‘for; by’, a cognate of *ma* in Basse Mandinka. If the Bambara entity *má(a)* and MAA in Mandinka are related to this postposition, the exclamatory force would be self-explanatory (i.e. ‘by God!’). This scenario was proposed by Dumestre (1997) and Tröbs (2009). Thus, in a manner analogous to other TTAM markers in Manding and Basse Mandinka, the MAA gram would have developed from a periphrasis built around a postposition: *By God, may x be done / may y do x > May God do x*.<sup>217</sup> What unifies these two possible explanations is that the posited ancestors of the element *maa* seem to have evolved into a topicalisation marker, which later was (at least, partially) reanalysed as an optative marker.<sup>218</sup>

<sup>215</sup> The predicative markers of the *ka*-type are commonly used in optative and final functions in Manding (see for instance, the “projectif” in Kita Maninka (*ká*; Keïta 1984:59), Maukakan (*ká/kà*; Creissels 1982:13) and Kagoro (*a*; Creissels 1986:13; cf. section 2.4).

<sup>216</sup> In Korokan, the predicative marker *yá* is used: *ála yá dén` bálo* ‘May God make the child live’ (Creissels 1984:21).

<sup>217</sup> Babaev (2011:16-17) suggests that the postposition *ma* descends from a noun with a locative sense ‘surface’. He also proposes that this postposition is the source of various (originally locative) imperfective constructions in Mande. Arguably, it could be reconstructed as a Proto-Mande predicative marker and/or postposition *\*ma*. If *maa* of the MAA gram is related to the postposition *ma*, it would also be related to the *ma*-type of imperfective (progressive and habitual) constructions, which seem to follow the imperfective path.

<sup>218</sup> The original periphrasis ‘By God my x be done!’ was explicitly modal, expressing an optative sense. This is evident in its use with the YE<sub>2</sub> gram and the KANA construction. It was also modal if the infinitive (base + *la*) was used. The overt modal slot corresponds to the expression *By God*, which nowadays surfaces as *Alla maa* in Basse Mandinka. Therefore, the MAA gram is placed in the modal stream. Of course, the reinterpretation of the original postposition *ma* as a modal predicative marker *maa* is a result of modal contamination.

The reconstruction of the origin of *maa* as a postposition is not unproblematic and should not be regarded as conclusive. For instance, as mentioned previously, in Maninka of Niokolo, the construction equivalent of the MAA gram uses the element *mu*, which is identical to the marker of identification also found in Basse Mandinka and various other dialects (Tröbs 2002b:136-139, 2009:172-173). This item is most likely unrelated to the postposition *ma*. Accordingly, the explanation of the MAA gram exposed in this section would not account for the Niokolo Maninka construction. As argued by Tröbs (2009:176-177), *mu* is an old item – a relic form from Proto-Manding. Since in Vai, *mù* can be used as a focus marker, it is possible that in its origin it was a discourse-pragmatic particle – a focus marker (Tröbs 2009:177-178). It is thus conceivable that it was used with the word ‘God’ in order to generate optative uses fully analogous to that developed by means of the postposition *ma*. As a result, although not identical, the conceptual cognitive schemas lying behind the MAA gram and the optative use of *mu* could be similar.

#### 4.4 The SI gram

The SI formation has already been discussed in section 2.5, where it was defined as the most advanced imperfective-path gram with collateral meaning extensions due to the contamination and modal ability clines that the original progressive and/or habitual sources have simultaneously travelled. In general, it was classified as an old present constituting the first and the oldest wave on the imperfective stream. Given the synchronic evidence (polysemy), certain comparative facts and diachronic hypotheses, this evolutionary scenario is highly plausible (Tröbs 2004a, 2009). However, it is also possible that the SI construction would receive a different mapping that would, in turn, locate it in another module of waves. This scenario will be explained below.

To begin with, the information concerning the content of the semantic potential of the SI locution will be recalled. The meaning of this form is chiefly related to the ideas of futurity, modality and habituality. In main clauses, the SI construction introduces future events, often modally coloured by nuances of necessity and obligation. However, simple future values are also possible. It is commonly used with an imperative force (directed to the second person) or a jussive force (directed to the third person). It also conveys the idea of intention, permission and deliberation. The SI form additionally expresses epistemic possibility or epistemic necessity-probability, referring to a present or a future time frame. Furthermore, it is employed in non-modal functions, expressing habituality, durativity and gnomicity. The SI form very commonly appears with the verb *noo* ‘be able, can’, conveying modal nuances of physical ability, mental capacity, root possibility, epistemic possibility, permission and volition, frequently void of any future temporal connotations, but rather referring to habitual or general truths. Moreover, the SI gram is abundantly found in conditional apodoses with three types of senses: real factual (apodotic future), real counterfactual (present conditional) and unreal counterfactual (past conditional). It is also extensively employed in subordinate contexts where it functions as a subjunctive mood compulsorily introducing purposive-final clauses. Within the modal domain, speaker-oriented values (imperative, jussive, permission), epistemic senses (possibility and probability) and

syntactically conditioned meanings (especially, subjunctive in purposive and certain subordinate clauses) are much more common than the agentive ones which seem to be limited to occurrences with the words *noo* (ability, capacity, root possibility) and *fo* (obligation).

The semantic potential of the SI gram is heavily modal. As shown in section 2.5, the various modal senses, together with the nuance of a modal future and a simple future are the most prototypical, whereas the indicative values, such as habitual and gnomic (especially if the instances where the gram appears with *noo* are excluded) are much less common. Accordingly, one could hypothesise that the SI form is primarily a manifestation of a modal or modal-future path. Habitual uses would, hence, correspond to secondary extensions arising from the more original modal trajectory.

As explained in section 1.2.3.3, modal grams pass through the following main stages: agentive modality, speaker-oriented modality and/or epistemic modality, modal and, later, simple future, and finally syntactic modality (subjunctive). The SI gram would cover the entire length of this scenario with its prototypicality peaks in the more advanced zones. It could be defined as an advanced modal-path gram.

It has also been explained that one usually distinguishes three main subtypes of modal paths: the ability cline, the obligation cline and the desire-movement cline. The ability cline states that expressions of ability develop the meaning of capacity and root possibility, which motives their use with the value of permission and epistemic possibility. Subsequently, such formations develop into modally coloured futures and simple future tenses. At the end, they can be grammaticalised as syntactic moods (subjunctives) or as conditionals. The obligation and desire-movement paths are very similar and predict that periphrases composed of verbs expressing movement (e.g. ‘going’ and ‘coming’), desire (e.g. ‘want’) or obligation (e.g. ‘must’) acquire speaker-oriented values (imperative-jussive) and epistemic senses (probability). Later they develop modally coloured future senses and simple future values. At posterior stages, they are generalised in subordinate clauses and conditional phases with subjunctive and conditional meanings. The two trajectories usually differ at the initial stage of agentive modality where the obligation cline covers senses of obligation and necessity while the desire-movement cline passes through the domain of desire and intentionality.

The exact scope of senses synchronically offered by the SI gram makes it possible to map the formation by means of these three clines. This means that the SI locution conveys nuances of modality that may correspond to the three evolutionary trajectories leading towards modal grams. On the one hand, the values of obligation, imperative-jussive, epistemic necessity and (high) probability may have arisen from the obligation cline. The same senses (with the exception of the agentive obligation) may also have emerged along the desire-movement paths. This means that the said values can be mapped either by the obligation path (the input would be a periphrasis with an agentive force of obligation, such as ‘have to’) or the desire-movement path (the input would be a periphrasis with an agentive force of desire ‘want’ or allative senses ‘go/come’). Alternatively, the senses of ability, capacity, root possibility and epistemic possibility – which are particularly common with the verb *noo* although the “independent” SI form may also express this type of values – would have emerged from the ability path. In this case, the input would be a periphrasis with an agentive force of ability ‘I know how to, I am able’. Since the values of the modal future, the

simple future and syntactically based modality are typical of the three evolutionary scenarios (although the future sense seems to be less commonly acquired by grams travelling the ability cline) and tend to be developed at later stages of all the trajectories, they may be networked by combining the three paths.

By using the mapping template explained above, one can cover and organise the modal semantic potential of the SI gram. The map would span the entire length of the ability cline (ranging from the less common senses of ability, capacity and root possibility towards more frequent values of epistemic possibility, permission, and modal future, future and subjunctive/conditional) and obligation or desire-movement cline (ranging from the senses of obligation, intention, imperative-jussive, epistemic necessity and potentiality possibility, and subsequently to the senses of a modal future, future and subjunctive/conditional). Once more, it should be noted that the prototypicality zones correspond to the speaker-oriented and epistemic modality, modal and simple future and subjunctive or conditional modality. As mentioned previously, the agentive modal senses are usually found with adjacent morphemes such as *noo* and *fo*. The value of intention is also infrequent. All of this can be represented by the following map:

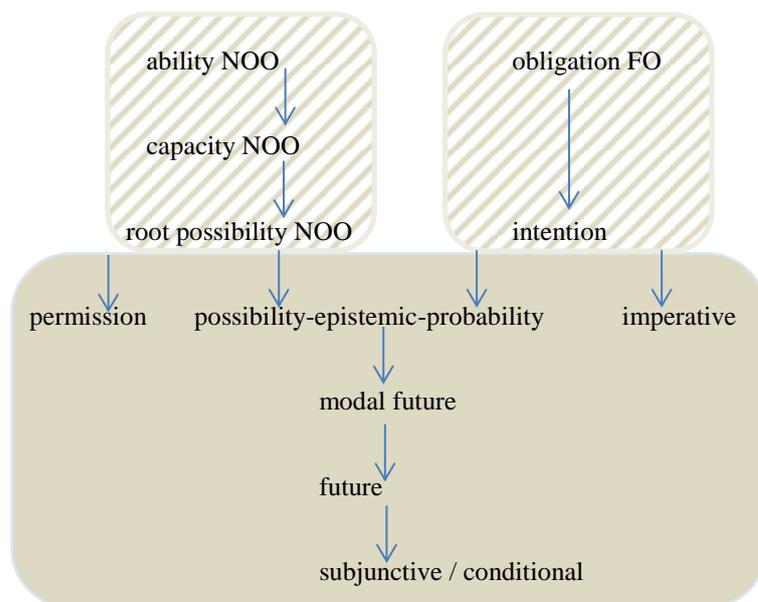


Figure 4.10: Map of the semantic space of the SI gram<sup>219</sup>

The map formulated above can be reshaped into a more linear model more suitable for the wave representation and comparison of modal grams of various origins. In this approach, the most original stages of agentive (or dynamic) modal values, intentionality and root possibility are grouped into the first stage of what is broadly understood as agentive modality. The second stage encompasses the values of speaker-oriented and epistemic modality. The third stage includes the senses of a modally coloured future and simple future. Finally, the fourth stage corresponds to a syntactically based mood (subjunctive and conditional):

<sup>219</sup> The striped pattern indicates semi-prototypicality in contrast to solid that indicates prototypicality.

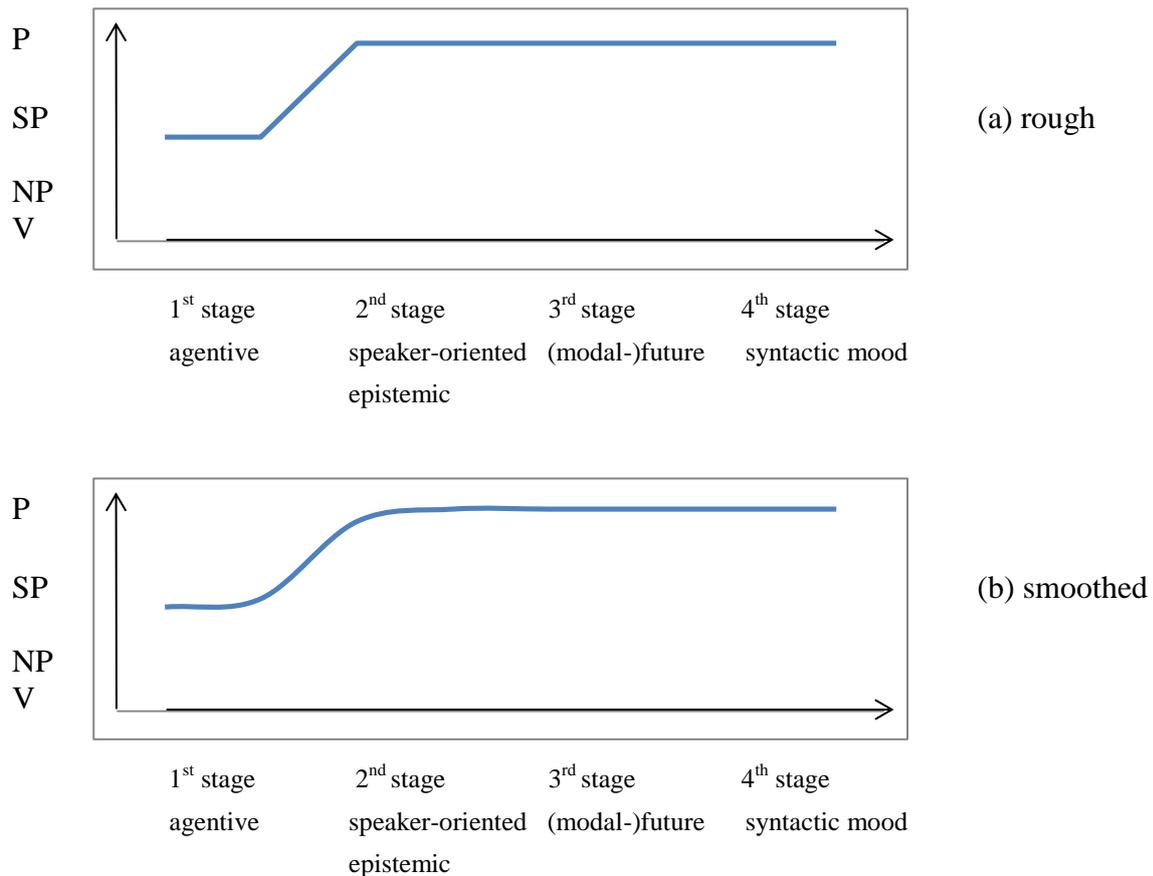


Figure 4.11: Linear model of the semantic space of the SI gram

If one splits the second stage into two separate domains, viz. an epistemic sense and a speaker-oriented sense, and additionally disregards the extensions towards the domain of futurity, the map of the SI gram can be reformulated in the following manner:

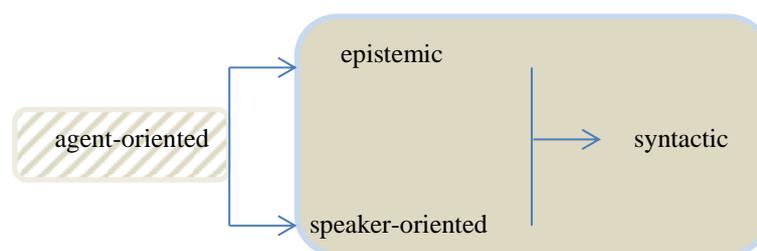


Figure 4.12: Map of the semantic space of the SI gram – modal representation

Consequently, the conceptual source of the SI gram would be the value of ability and, at the same time, one (or more) of the three possible senses: obligation, desire or movement. In other words, it seems as if the gram had emerged from two (or even more) conceptual inputs. In order to examine this hypothesis and, especially, determine which one of the modal sources apart from ability is the most plausible (i.e. whether it is the value of obligation, desire or movement), comparative-diachronic arguments must be taken into consideration.

In section 1.5, it has been mentioned that according to one theory, the SI gram may have descended from a periphrasis built around the verb *sii* (*si/se*; cf. Creissels 1997a). In Basse Mandinka (and in other Manding languages), the verb *sii* – besides the locative meaning ‘sit’ – conveys the senses ‘be able’ and ‘arrive’. Both meanings are compatible with the paths plotted previously in this section.

The compatibility of the verb ‘be able, can’ with the ability cline is evident and does not need further explanations (cf. also section 2.5.2). It can additionally be noted that in some dialects, such as Bambara, cognates of the verb *sii* offer quite an evident modal sense, especially, ‘be able, can’: *N bε se* ‘I can’ *N bε se ka bamanankan kàlan* ‘I can read Bambara’ or *O bε se ka kε* ‘It can happen’. The compatibility of the sense ‘arrive, reach’ exhibited by the verb *sii* with the modal path needs more explanation. In sections 1.2.3.3 and 1.2.3.4, it has been shown that verbs that express the meaning of motion (e.g. ‘go’ or ‘come’) constitute a common source of the modal path, more specifically of the desire or movement trajectory. Since the predicate *sii* can express the concepts of movement such as ‘arrive’ and ‘reach’, it would roughly be compatible with values arising along the movement path and this would, in turn, explain the other part of the semantic potential of the SI gram (except for the sense of agentive obligation).

As a result – and under the condition that the predicate *sii* (*si/se*) constitutes the origin of the morpheme *si* in the SI gram – the polysemy of the lexical verb *sii* may have motivated the two modal clines, which would corroborate the proposed mappings. It also shows that the values of intention, necessity, probability and imperative might have arisen by following the movement cline rather than being derived from a periphrasis expressing the idea of desire or agentive obligation. However, this explanation fails to account for the values of agentive obligation, which the SI form can express in the company of the lexeme *fo*.

If this modally based mapping is correct, the habitual value of the SI gram would stem from modal senses and not vice versa, as posited in section 2.5.2. In particular, the original ability sense would be the source of the habitual value (this was already hypothesised in section 2.5.2). From a typological perspective, this is possible since locutions that express a modal nuance of ability or capacity (similar to the English verbs such as *know*, *be able* and *can*) constitute a relatively common source of habituals. Accordingly, the modal nuance would have given rise to habitual readings which then could have set in motion the imperfective path. Inversely, the senses of durativity and gnomicity would have not arisen from the stages of progressivity and continuity. In this way, the SI gram could still be defined by means of the imperfective cline. Nevertheless, this cline would have emerged directly from the habitual stage, which itself would be linked to the modal origin of the gram. This means that all the modal and future values could be explained both as uses typical of old presents (highly advanced stages of the imperfective path) and as functions motivated by the modal ability and movement clines.

According to this dynamic definition, the incompatibility of the SI form with the domains of an ongoing and continuous present (and/or past) can suggest that these senses have never belonged to the semantic potential of this gram. Although evolving along the imperfective path, the SI construction has directly departed from the habitual meaning. This would be consistent with the fact that in the most languages where a cognate of the SI gram is

found, it offers future, modal or habitual uses (Koité-Herschel 1981, Kastenholz 1987:260-263, Tveit 1997, Janse 1998, Kastenholz 2003:47 and Tröbs 2003, 2004a).<sup>220</sup>

This complex dynamic networking – and, hence, diachronic fate – of the SI gram may be represented schematically in the following way:

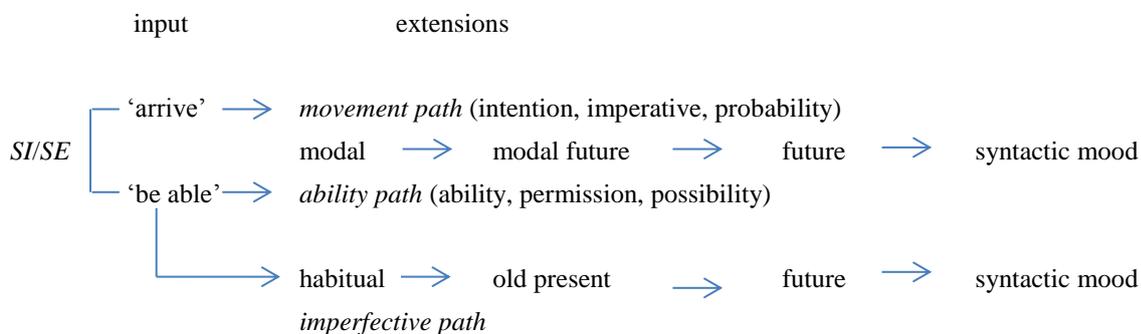


Figure 4.13: Map of the entire semantic potential of the SI gram: modal and indicative

Although, as explained in section 2.5.2, the locative-progressive origin of the SI gram seems to be more plausible (cf. Tröbs 2003, 2004a, 2009, Kastenholz 2003), the relation of the SI gram with the predicate *sii* remains possible, as does its modal-path mapping.<sup>221</sup> To conclude, the modal origin of the gram cannot be definitively ruled out.

#### 4.5 The modal stream

The grams of the modal type both differ and overlap as far as their qualitative and quantitative maps are concerned. The semantic potential of the NOO gram covers the entire length of the modal ability path: it spans from the stage associated with the idea of knowing how to perform an activity to the phase of subjunctive uses. The prototypicality peak is located in the initial sections of the path, i.e. in the stages of ability, capacity, root possibility and permission. Meanings that correspond to more advanced stages (epistemic and modal future) are not prototypical and those that cover the most advanced fragments of the cline (subjunctive uses in subordinate clauses) are extremely infrequent. The non-modal future sense is not attested. In general, it is a non-advanced modal-path gram of the ability type. The ÑANTA form has been mapped by means of another type of modal path – the obligation cline. It also spans almost the entire length of its cline, ranging from agentive deontic senses to subjunctive uses. Similarly to the NOO gram, the prototypicality peak is located in the initial portion of the path, i.e. in the zone of an agentive deontic value. Some speaker-oriented senses (mild imperative and deliberation) are also frequent. On the contrary, more advanced

<sup>220</sup> It should, however, be observed that the lack of the progressive function may also stem from the grammatical maturity of the SI gram and its great semantic advancement (cf. section 2.5.2).

<sup>221</sup> In fact, even if the imperfective-path map is the correct one, most modal values might still have arisen through the modal-ability cline of habituais (cf. section 2.5.2). Thus, the map plotted in Figure 4.10 would remain useful – it would explain the meaning extensions from the value of ability, once this sense was generated from the habitual meaning offered by the old imperfective gram. Similarly, Figures 4.11 and 4.12 would remain valid, showing the advancement of the SI form on the modal cline generated by the habitual source. On the contrary, the map in Figure 4.13 would be incorrect, as the conceptual extension would rather be in reverse.

sections are poorly represented: epistemic and modal future uses are uncommon while the senses of a non-modal future and a genuine purposive subjunctive are highly infrequent, the former being in fact unattested. As a result, the ÑANTA construction has been classified as a non-advanced modal-path gram of the obligation type. The semantic potential of the MAA gram is not sufficient to match it with a specific subtype of a modal path. It merely enables us to classify the formation as a modal-path gram in a mid-stage of its grammaticalisation. In this case, it could be the stage of speaker-oriented modality, since the MAA form exclusively appears in an optative function. It has been argued that this function has, probably, arisen due to the use of an explicit exclamatory segment *Alla maa!* ‘God!’, which, at least partially, has been reinterpreted as a modal marker. Lastly, it has been hypothesised that the meaning of the SI gram could be networked by using two templates of a modal-path type: the ability cline (spanning from the sense of ability to a subjunctive use) and movement cline (ranging from the value of intention to a subjunctive use). The prototypicality peaks are located in the more advanced sections of the paths, where the two evolutionary scenarios merge: speaker-oriented and epistemic modality, modal and simple future and subjunctive or conditional modality. Alternatively, agentive senses are less common, being usually restricted to the context of the morphemes *noo* and *fo*. Accordingly, the gram has been defined as an advanced modal-path gram.

Although the four grams are mapped by means of different qualitative maps, they all belong to the group of modal paths. Therefore – even though microscopically different – they can be macroscopically compared and interpreted as waves on a relatively shared evolutionary scenario or a common stream. Within the general modal cline – in which the extensions towards futurity are taken into consideration – the NOO and ÑANTA are the least advanced with the wave peaks located in the more initial fragments of the stream. The wave of the MAA form is semi-advanced appearing in the intermediate section of the stream, typical of speaker-oriented moods. As the wave of the MAA gram has travelled further on the stream than the waves of the NOO and ÑANTA formations, it seems to be historically older. Lastly, the wave characterising the SI gram is the most advanced: it raises its peak in the intermediate and final stages of the stream. As explained previously, agentive senses are common only in the company of the lexemes *noo* and *fo*. If the waves developed by the four constructions discussed in this chapter are placed together on the modal stream the consecutiveness of the ÑANTA, NOO, MAA and SI forms and their respective developmental advancement can be represented as follows:

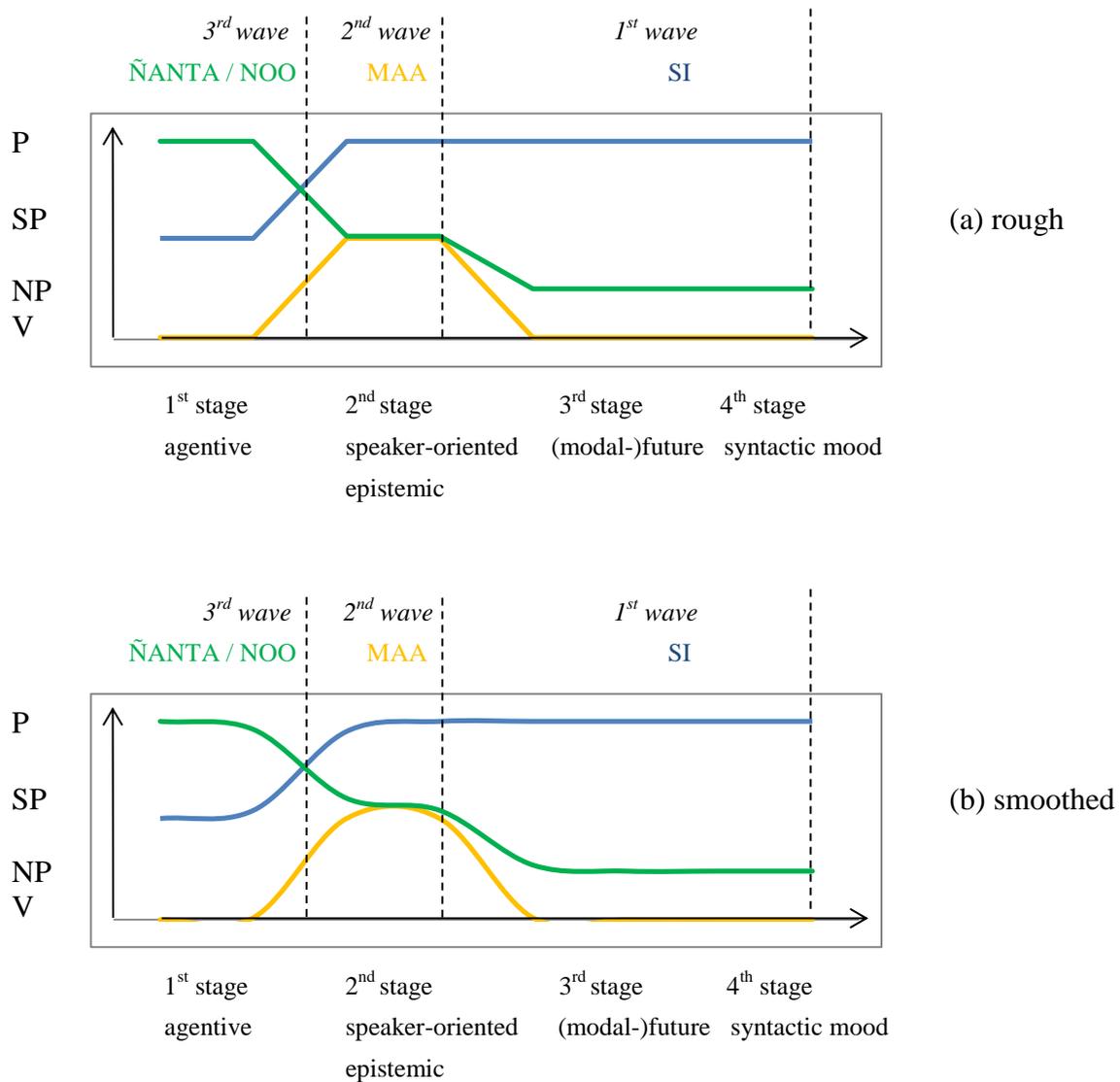


Figure 4.14: The travel-ness of the modal cline<sup>222</sup>

If the stream model used as a template above is replaced by the representation where no extensions into the domain of futurity are taken into consideration, the arrangement of the waves is similar. The NOO and ÑANTA grams are the least advanced, proliferating in agentive and, possibly, speaker-oriented uses. On the contrary, the zones of epistemic and syntactic modality are non-prototypical. The MAA gram is regularly located in the intermediate stage, i.e. in the area of speaker-oriented modality. The wave of the SI form rises in the intermediate and advanced stages (epistemic or speaker-oriented modality and syntactic modality, respectively).

<sup>222</sup> The wave of the MAA gram is only lifted to the degree of semi-prototypicality because, as explained, this construction is, in general, very infrequent, being compatible exclusively with speaker-oriented senses.

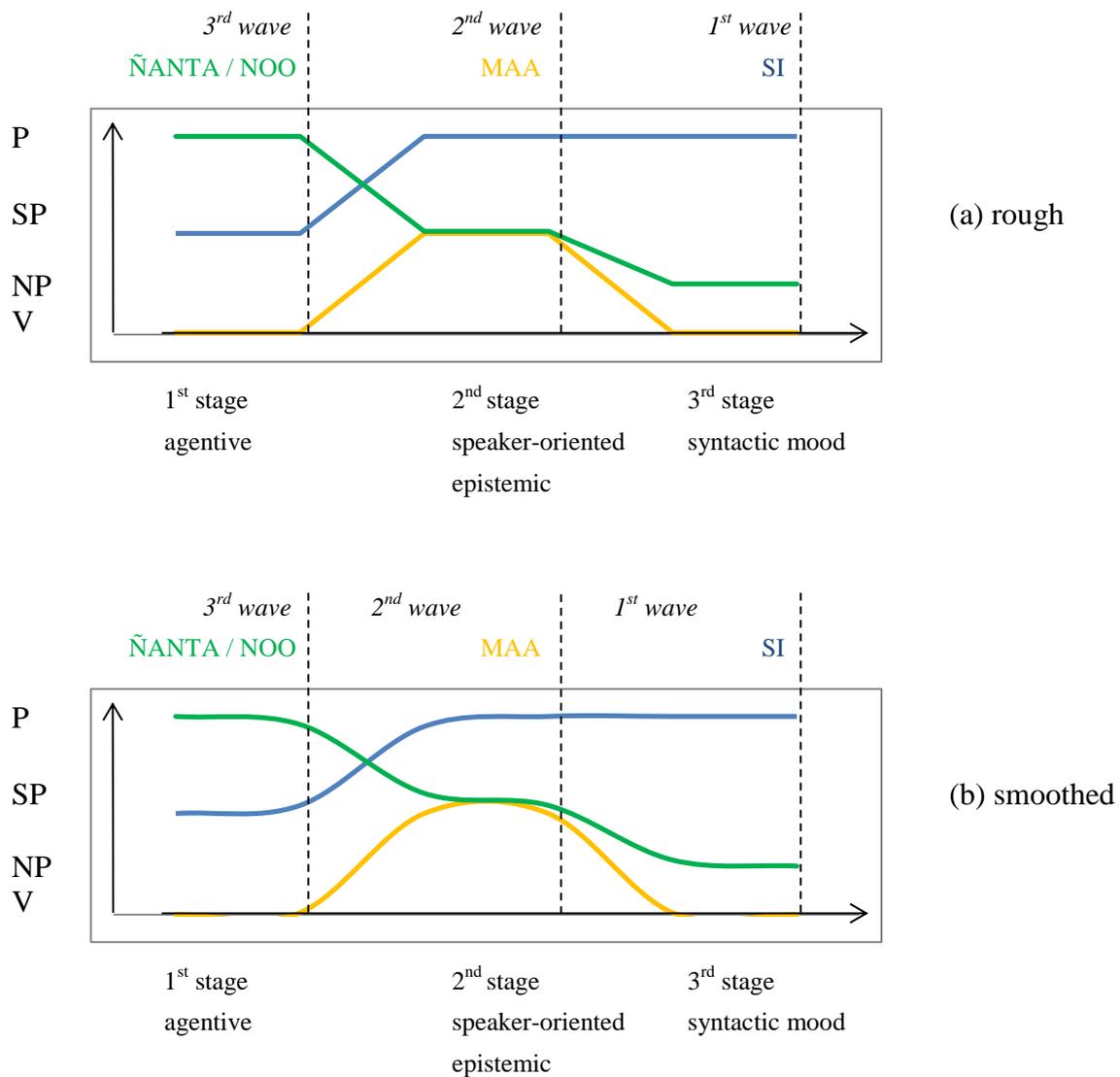


Figure 4.15: The travel-ness of the modal cline (excluding the domain of futurity)

Since the second stage in the wave representation encompasses two different modal values (i.e. a speaker-oriented domain and an epistemic domain) which can be represented differently by the analysed grams, one may posit a model where these two sets of senses are kept separate. Taking into consideration only the prototypicality areas of each formation, the following graphic representation can be posited:

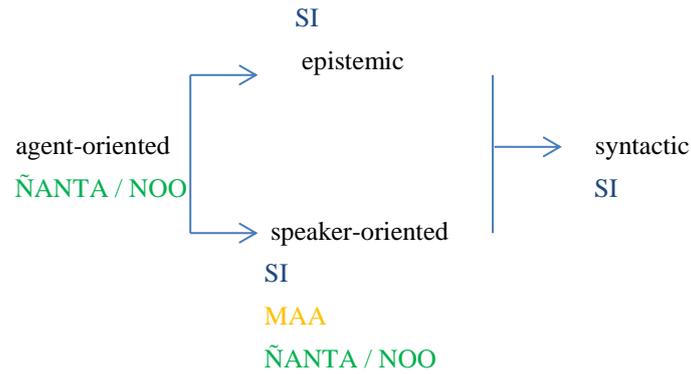
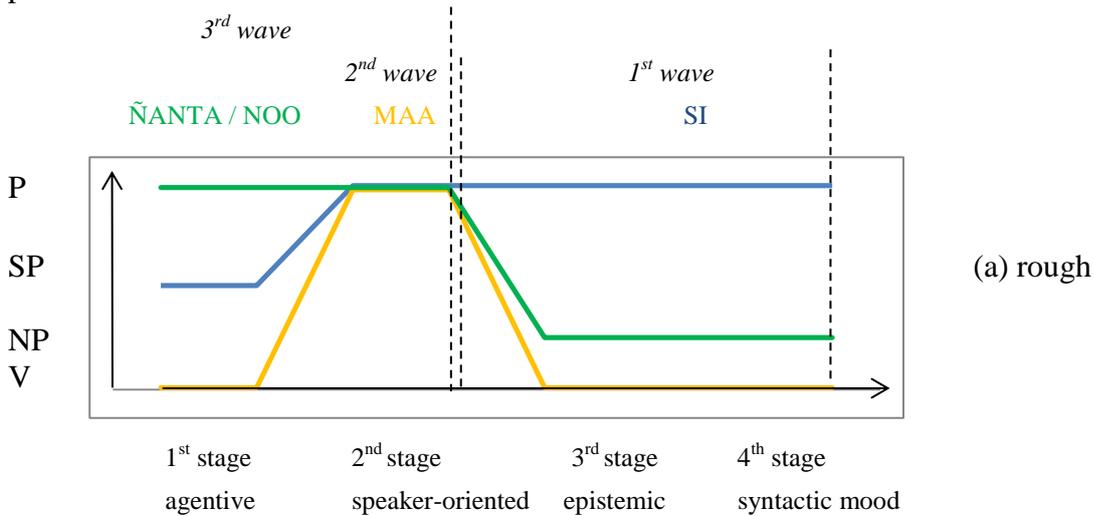


Figure 4.16: The travel-ness of the modal cline (excluding the domain of futurity and splitting the second stage into two sub-stages)

If one represents the speaker-oriented senses as a stage that is anterior to the phase where epistemic values are developed (a possibility that is crosslinguistically attested), the following wave model may be designed (see Figure 4.17). Although in this representation the peaks of the ÑANTA-NOO and MAA waves overlap, the former is more conservative. It preserves the senses exemplary of the first stage, which suggests its overall less advanced location on the path.



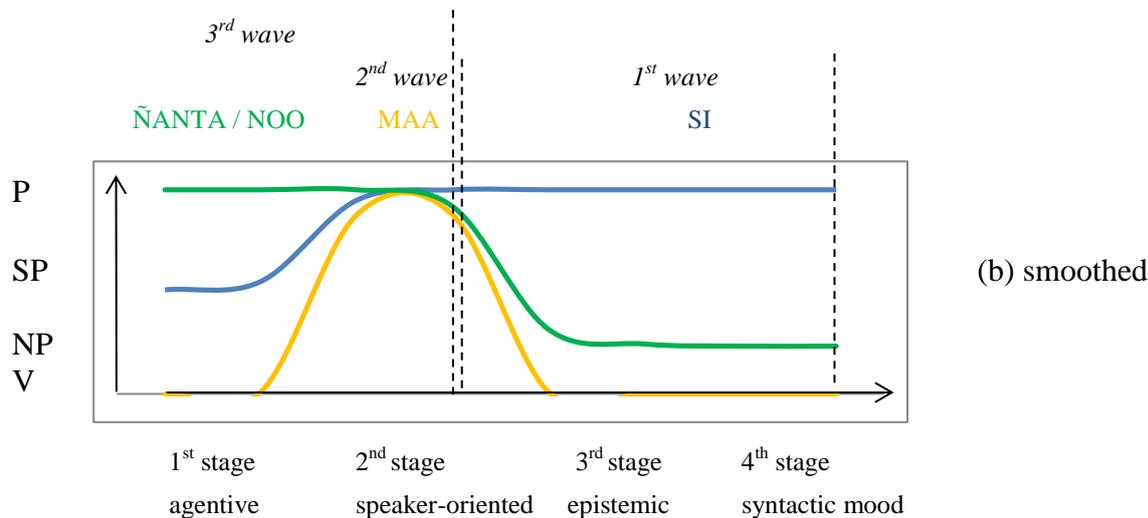


Figure 4.17: Wave model of the travel-ness of the modal cline (excluding the domain of futurity and splitting the second stage into two sub-stages)

Even though in the representations posited above, all the grams are analysed with identical macro-domains – and therefore located on a shared evolutionary pattern or stream – it has previously been emphasised that from a more microscopic (or fine-grained) perspective, they differ qualitatively. They travel through different subtypes of the modal clines. I will explain these microscopic dissimilarities – now adjusted to a dynamic model – in detail. First, the ÑANTA and NOO grams differ in the area of the first stage where the agent-oriented senses are profiled: the NOO form concerns the ideas of capacity and possibility, while the ÑANTA is related to the concepts of obligation and necessity. In the second phase, related to a speaker-oriented domain and to epistemic functions, the two grams preserve their distinction: the NOO form expresses permission and possibility while the ÑANTA form conveys mild orders and suggestions (soft imperative-jussive) and relative probability. Even in the initial portion of the third stage where a modal future value is stabilised, the contrast between the two formations remains, being reinterpreted as future possibility (lower likelihood) versus future probability (higher likelihood). As far as the MAA gram is concerned, this construction specialises in optative uses within the domain of speaker-oriented senses, by which it distinguishes itself from the NOO (permission) and ÑANTA (polite command, suggestion) locutions. The SI gram is semantically broader. In the speaker-oriented area, it is concerned both with the senses of permission and command, while in the epistemic zone it can express both possibility and probability. Accordingly, it seems to cover the spaces traced in these domains by the NOO and ÑANTA formations. However, one can argue that in the domains of speaker-oriented modality, the SI gram has a stronger or more persuasive colour, besides being able to express the values typical of the NOO and ÑANTA constructions. That is to say, while the NOO form expresses permission (*you may*), the ÑANTA form introduces soft orders (*you should*), the SI gram can additionally convey the idea of stronger orders (*you must*), functioning as an imperative or jussive. This distinction is generally maintained in the area of epistemic modality and modal future as possibility (NOO), relative probability (ÑANTA) and high probability (SI). Lastly, with respect to the syntactic modality, only the

SI gram is semantically fully adapted to uses in final clauses and conditional apodoses, where it is both compulsory (together with the YE<sub>2</sub> locution) and/or semantically void. If the other grams are used in subordinate or dependent environments, they regularly preserve the semantic content found in main clauses.

Additionally, it is important to note that whereas the NOO, ÑANTA and SI formations are common, the MAA locution is extremely infrequent. As explained in section 4.3, in colloquial speech this expression is usually employed only in fixed and idiomatic phrases. On the diagrams, the MAA form has been represented as being prototypical at the speaker-oriented stage. However, the overall scarcity of the MAA gram makes it impossible to view this construction as the prototypical means of expressing the optative sense. As will be demonstrated in section 6.2, it is the YE<sub>2</sub> gram that is the most common expression of the optative value in Basse Mandinka. In other words, if the optative domain has to be expressed more productively, the YE<sub>2</sub> form is used.

Accordingly, the interaction of the waves in the macroscopic model of the modal path suggests the following associations of the grams by the speakers within its domains and stages. The ÑANTA and NOO forms (i.e. the grams of the most recent wave) specialise in the initial section of the stream (i.e. in the area corresponding to the first stage typical of agentive modality). The SI locution (which is the oldest wave) dominates in more advanced parts of the stream (speaker-oriented and epistemic modality, (modal) future and syntactic modality). The MAA gram is identified with the optative sense, although one must always bear in mind the general infrequency of this formation. These areas of specialisation are generally corroborated by the informants who associated the NOO and ÑANTA forms with the domain of agentive modality (with ability-capacity and obligation, respectively) and the SI gram with the domain of speaker-oriented modality and (modal) futurity (order and future).

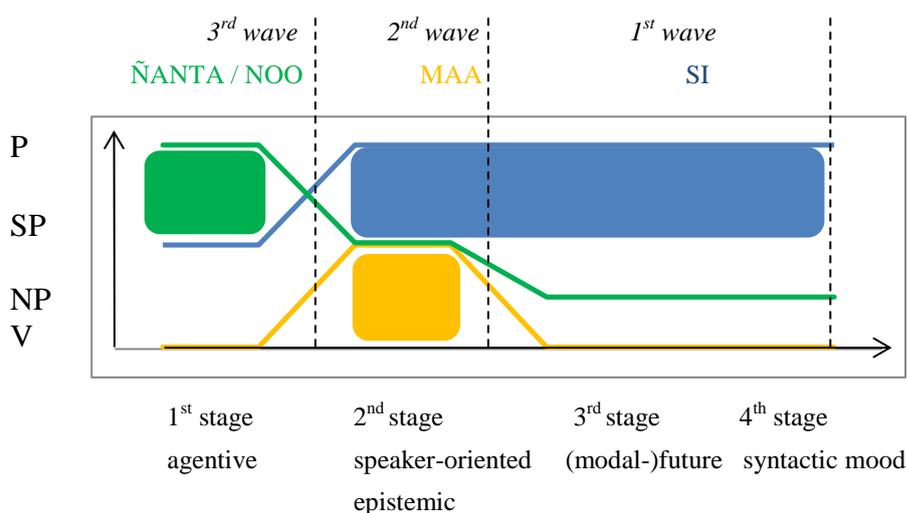


Figure 4.18: Competition and prototypicality association on the modal path

The representation developed for the modal stream where the extensions towards futurity are disregarded is analogous to the model posited above. The oldest wave is associated with the

zones related to the second and third stages of the stream, while the youngest waves are equalled with the area covering the first stage of the modal stream. The “minor” intermediate wave (the MAA gram) specialises in the sphere of the second stage:

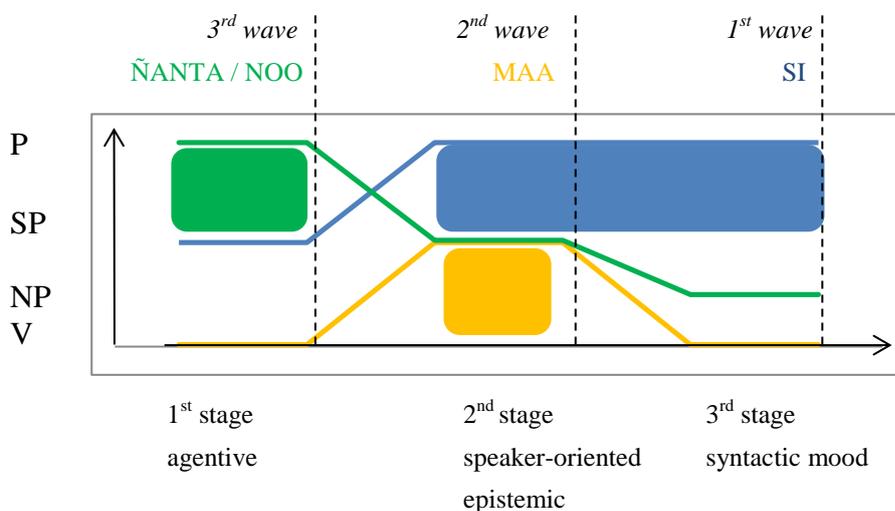


Figure 4.19: Competition and prototypicality association on the modal path (excluding the domain of futurity)

If the second stage is divided into two consecutive sub-phases (i.e. speaker-oriented and epistemic modality), the association due to the prototypicality distribution and, thus, competition in the domains' allocation, can be portrayed in the manner schematised in Figure 4.20. Given that the speaker-oriented domain is prototypical of the four grams, it can further be partitioned into four distinct association zones: possibility (NOO), mild necessity (ÑANTA), strong necessity (SI) and wish (MAA). However, as the overall frequency of the MAA form is extremely low, the SI gram may also incorporate the domain of wish.

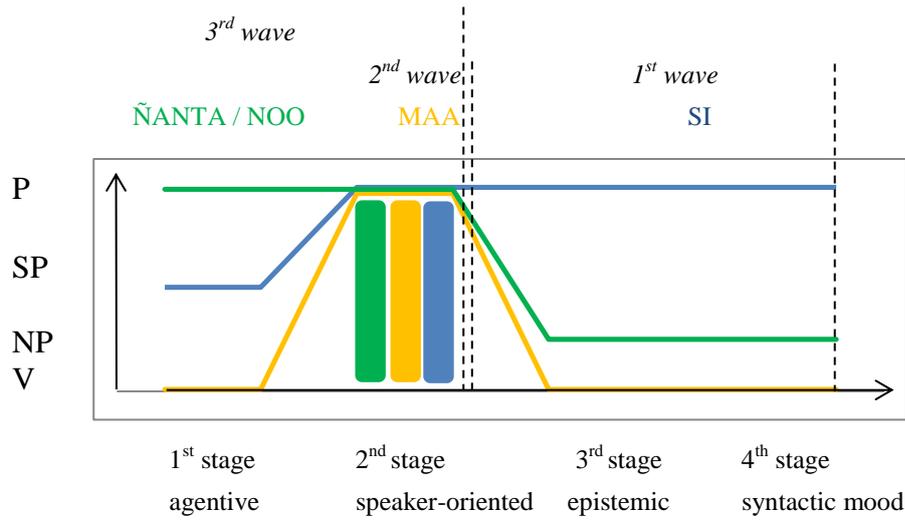


Figure 4.20: Competition and prototypicality association on the modal path (excluding the domain of futurity and splitting the second stage into two sub-stages)<sup>223</sup>

<sup>223</sup> The arrangement of the coloured boxes in the second stage (speaker-oriented modality) does not correspond to the evolutionary order of the meanings to be acquired. It only matches the possible historical sequence as posited for Basse Mandinka.



## CHAPTER FIVE

## FUTURE-PATH MODULE

## 5. Future-path module

In this chapter, I will discuss the semantic nature of two formations that can be mapped by means of the dynamic template determined by a future path – a cluster of evolutionary trajectories responsible for the creation of future tenses – and by clines that are cognitively related to it. This class of grams consists of two constructions: the LA form (section 5.1) and the NAA LA form (section 5.2). Complying with the procedure outlined in the previous chapters, each section (dedicated to one of the above-mentioned formations) will first present general information concerning the structure of a gram and possible constraints governing its use. Afterwards, a detailed description of the semantic potential of that construction will be provided. In particular, each sense that belongs to the semantic potential of that gram will be illustrated by an example in which overt contextual factors make the postulated value evident. Subsequently, the total meaning of each formation will be defined in dynamic terms as a map of interrelated senses and – once the zones of prototypicality have been determined – as a wave. Lastly, in section 5.3, a dynamic model of the future stream, in which the two consecutive waves propagate, will be proposed.

5.1 The LA gram<sup>224</sup>

The first construction analysed in this chapter is the so-called LA gram. This formation is composed of the non-verbal predicator *be* ‘be’ (5.1.a) – in the negative *te* (5.1.b) – followed by the base of a lexical verb and the element *la* ‘to’. The morpheme *la* is sometimes analysed as a locative element (Wilson 2000) or postposition (Colley 1995:15), since it is historically related to the homonymous postpositional lexeme *la*, still available in the Basse Mandinka language. However, following Creissels (1983a), I will regard it as an infinite marker. Accordingly, even though *la* in the LA gram (studied in this section) and *la* in the NomLA gram (described in section 2.3) both derive from the postposition *la* and are used as parts of verbal formations, their categorial status is nowadays distinct. Namely, while the element *la* in the LA form (which, as will be demonstrated below, is an advanced gram) corresponds to an infinitive marker, the element *la* in the NomLA locution (which is a non-advanced gram) can still be viewed as a postposition.<sup>225</sup>

- (5.1) a.    Ì        **be**    a        **ke**    **la**  
               they NVP it        do        LA  
               ‘They will do it’

<sup>224</sup> This section draws on my paper “The Basse Mandinka ‘Future’” published in *Studies in African Linguistics* 41/1 (cf. Andrason 2012h).

<sup>225</sup> The postpositional status of *la* in the NomLA construction is also related to the fact that in this gram *la* governs a verbal noun.

- b.     A     **te**             a     **ke**             **la**  
        he    NEG.NVP    it    do             LA  
        ‘He will not do it’

With certain verbs, such as *taa* ‘go’ or *naa* ‘come’, alternative forms of the auxiliaries – *bi* in the affirmative and *ti* in the negative – are commonly used (5.2.a). Additionally, if the verbal base ends in a dental consonant *ŋ*, the entity *la* appears as *na* (5.2.b):

- (5.2) a.     Ntel   **bi**     **naa**   **la**  
           we    NVP   come   LA  
           ‘We will come’
- b.     M     **be**     jiyo   **miŋ**   **na**  
        I     NVP   water   drink   LA  
        ‘I will drink water’

The LA formation can be derived from any type of roots, be they dynamic (see example 5.1.a and 5.2.a-b, above), static (5.3.a) or adjectival (5.3.b). It can also appear in transitive (5.1.a and 5.2.b) and intransitive (5.2.a), including de-transitive (5.3.c) constructions. As a result, there are no morphosyntactic or root-based constraints on the use of this gram.

- (5.3) a.     M     **be**     a     **loŋ**   **na**  
           I     NVP   it     know   LA  
           ‘I will know it’
- b.     A     **be**     **beteyaa**   **la**  
        it     NVP   be.good    LA  
        ‘It will be good’
- c.     Bukoo **be**     **safee**     **la**  
        book NVP   be.written   LA  
        ‘The book will be written’

### 5.1.1 Sematic potential

#### 5.1.1.1 Grammatical tradition

As far as the Mandinka language in general is concerned, the LA formation has usually been classified as an expression of future activities. For instance, Rowlands (1959), Creissels (1983a) and Creissels & Sambou (2013; see especially § 9.4) regard the gram as a future, being however aware of its continuous-imperfective (“inaccompli”; Creissels & Jatta 1981, Creissels & Sambou 2013:79, 81-82, 131, 159), modal and future-in-the-past uses (see also Dramé 2003). Hamlyn (1935) understands the construction as a contextual variety of the continuous aspect, a gram that functions both as a present and as a future. Gamble (1987) also argues that the LA gram expresses both continuous actions (approximating a continuous present) and future activities. Lück & Henderson (1993) and WEC (2002:17-18, 20) define

the LA construction as a future aspect since the formation may introduce activities that are regarded as prospective from both the present (future tense) and past perspective (future in the past). However, Colley (1995:7, 15) equates the locution with a tense rather than an aspect, stating that it corresponds to the English future tenses with the auxiliaries *will* and *shall*. He also suggests that the formation can be used with a future progressive force, e.g. *A be yirootlu tutu la saama* ‘He will transplant / be transplanting plants tomorrow’. A slightly different view may be found in an old but still valuable grammar from the 19<sup>th</sup> century. Its author, Macbrair (1842:17-18), classifies the construction as a ‘second future’ (the label ‘first future’ refers to the SI gram (cf. sections 2.5 and 4.4)) or as a ‘future proximate’. He makes an important observation and affirms that the gram denotes the intention of performing a certain activity or the fact that an action is about to be performed. According to this definition, the LA locution functions as an immediate future or an intentional future: *M be diyamu la* ‘I am about to speak, I am to speak’ or ‘I wish to speak, I am going to speak’.

#### 5.1.1.2 Evidence from Basse

As has been noted by several scholars, the LA formation very frequently expresses the idea of futurity, indicating plain future events or situations, in which the modal component is secondary or unavailable. As has been explained in section 1.2.3.4, futures tend to be accompanied by modal shades of meaning. This occurs because a great number of future tenses are crosslinguistically derived from modal constructions. However, such co-values may be more or, on the contrary, less evident and/or relevant. In the former case, the idea of modality is equally important to (or even more relevant than) the sense of futurity, while, in the latter case, temporal nuances are profiled: the construction merely indicates that a given future activity will or will not occur:

- (5.4) a. Setplas        **be**    **naa**    **la**        luŋ        luulu    ñaato  
          taxi            NVP   come   LA        day        five     in  
          ‘The taxi will come in five days’
- b. M     faamaa        **be**    **futa**    **la**        saama  
          my    father            NVP   arrive   LA        tomorrow  
          ‘My father will arrive tomorrow’
- c. Keekewo        **be**    **tara**                    **la**        bitikoo        kono    saama  
          milk            NVP   be                        LA        shop            in        tomorrow  
          ‘The milk will be in the shop tomorrow’

It should be observed that the LA formation usually fails to provide hortative, jussive, imperative<sup>226</sup> and deliberative nuances. In Basse Mandinka, such modal shades of meaning are commonly expressed by other verbal locutions, especially by the SI gram (cf. section 2.5). This means that the LA form is more time oriented and less modally marked than the other typical future expression (compare, however, the relatively frequent intentional readings offered by the gram, cf. examples 5.10 below). To illustrate this phenomenon, in the

<sup>226</sup> For counterevidence and “soft” imperative readings of the LA gram, see further below in this section.

following examples four pairs of phrases are contrasted. Each pair consists of two sentences that differ uniquely in that one of them contains the verb in the LA construction and while in the other the SI form is employed. It is evident from these examples that whereas the LA expression emphasises the temporal location of an event (i.e. its future time), the SI gram offers various modal readings: exhortation (5.5.b), permission (5.6.b), and obligation (5.7.b and 5.8.b):

- (5.5) a. M    **be**    a    **ke**    **la**  
 I    NVP   it    do    LA  
 ‘I am going to it / I will do it’  
 b. N    **si**    a    **ke!**  
 I    SI    it    do  
 ‘[I promise] I will do it’
- (5.6) a. Fo            m    **be**    **duŋ**    **na**    jaŋ?  
 QUES            I    NVP   enter   LA   here  
 ‘Am I going to enter? / Will I enter?’  
 b. Fo            n    **se**    **duŋ**    jaŋ?  
 QUES            I    SI    enter   here  
 ‘May I enter?’
- (5.7) a. I    **be**    moto   doo            **saŋ**    **na**  
 You   NVP   car    another    buy    LA  
 ‘You are going to buy another car’  
 b. I    **si**    moto   doo            **saŋ**  
 you   SI    car    another    buy  
 ‘You must buy another car / Buy another car!’
- (5.8) a. A    **be**    **naa**    **la**  
 he   be    come   LA  
 ‘He is going to come’  
 b. A    **si**    **naa**  
 he   SI    come  
 ‘He must come / He will come!’

Although more temporal than modal, the LA formation commonly expresses the intention of performing a given activity, corresponding to certain uses of the English form *be going to*:

- (5.9) a. M    **be**    ñiŋ    bukoo   **karaj**   **na**  
 I    NVP   this    book   read    LA  
 ‘I am going to read this book [this is my goal and intention]’  
 b. M    **be**    i    **joo**    **la**    le  
 I    NVP   you    pay    LA    FOC

‘I am going to pay you [this is my intention]’

A more temporal (and conversely less modal) character of the gram may additionally be illustrated by its relation with the verb *noo* ‘be able, can, may’. Namely, when the LA construction appears with the modal predicate *noo*, it usually conveys the meaning of future ability, possibility and probability (5.10.a-b). In this manner, the periphrasis contrasts with the expression built on the SI form, which typically introduces the possibility with respect to the present (5.10.c; on the NOO gram see section 4.1).

- (5.10) a. I     **be**    jeroo **ke**    **noo** **la**    kotenke  
           you    NVP   sight do    can    LA    again  
           ‘You will be able to see again’
- b. M     **be**    a     **ke**    **noo** **la**  
           I     NVP   it    do    can    LA  
           ‘I will be able to do it’
- c. N     **si**    a     **ke**    **noo**  
           I     SI    it    do    can  
           ‘I can / will be able do it’

As far as the aspect of future activities conveyed by the LA formation is concerned, the gram commonly expresses unique, punctiliar and bounded events (i.e. presented from a global perspective as an entire whole, cf. examples 5.11.a-b). However, the LA locution can also denote durative or unbounded actions and situations extended in time (cf. examples 5.11.c-d). Consequently, the formation corresponds to both the perfective and imperfective future constructions found in other languages:

- (5.11) a. M     **be**    a     **faa** **la**    saama  
           I     NVP   him   kill   LA    tomorrow  
           ‘I will kill him tomorrow’ (cf. the Polish translation that uses an overt perfective form: *zabije*)<sup>227</sup>
- b. M     **be**    a     **saŋ** **na**  
           I     NVP   it    buy   LA  
           ‘I will buy it’ (cf. the Polish translation that uses an overt perfective form: *kupię*)
- c. M     **be**    ite    **kanu** **la**    le    luŋ-wo-luŋ  
           I     NVP   you   love   LA    FOC   every.day  
           ‘I will love you every day (imperfective future)’ (cf. the Polish translation that uses an overt imperfective form: *będe kochać*)
- d. Ì     **be**    **diyaamu** **la**    waati-wo-waati  
           they   NVP   talk            LA    all.the.time

<sup>227</sup> As English does not exhibit a paradigmatic contrast between the imperfective and the perfective future, I use the translations from Polish, a language where such a distinction can be found.

‘They will be talking all the time’ (cf. the Polish translation that uses an overt imperfective form: *będą rozmawiać*)

One should note that future activities that are explicitly progressive, continuous or stative are usually expressed by four other periphrastic constructions, which are themselves built on the LA gram. The first one is formed by the verb *tara* ‘be, remain’ in the LA formation and the participle in *-riŋ*, i.e. *be tara la -riŋ* (5.12.a). The second one consists of the auxiliary *tara* ‘be, remain’ in the LA form and the base of the lexical verb followed by the postposition *kaŋ*, i.e. *be tara la + base + kaŋ* (5.12.b). The third one is derived from the verb *ke* ‘be’ in the LA form and a participle in *-riŋ* (5.12.c). Lastly, the third expression contains the verb *a ke* ‘do’ in the LA gram with a verbal noun as its direct object, i.e. *be + verbal noun + ke la* (5.12.d).

- (5.12) a.    A    **be**    **tara**           **la**    **looriŋ**  
           he    NVP   be                   LA    stand-PART  
           ‘He will be standing’
- b.    A    **be**    **tara**           **la**    **siinoo**       **kaŋ**  
           he    NVP   be                   LA    sleeping       KAD  
           ‘He will be sleeping’
- c.    A    **be**    **ke**    **la**    **bataariŋ**  
           he    NVP   be    LA    be.tired-PART  
           ‘He will be (being) tired’
- d.    M    **be**    **tabiroo ke**   **la**    saama       le  
           I    NVP   cooking do   LA    tomorrow    FOC  
           ‘I will be doing the cooking tomorrow / I will be cooking.’

The LA construction can also introduce actions which refer to the future, but from a past perspective, approximating the prospective category of a future in the past:

- (5.13) a.    M    maŋ   a    loŋ   ko   ì   **be**   **naa**   **la**  
           I    did.not it   know   that   they   NVP   come   LA  
           ‘I did not know that they were going to come / would come’
- b.    Wo    waatoo la   ate   naata           kuuraŋ       baake,  
           that   time   at   he   became       be.sick       very.much  
           ‘At that time, he was so sick  
               fo    a    **be**   **faa**   **la**  
               until he   NVP   die    LA  
               that he was going to die’
- c.    Ate   le    **be**    a    **jamfaa**       **la**  
           he    FOC   NVP   him   betray       LA  
           ‘He was going to betray him’

In certain cases, this future-in-the-past value triggers modal shades of meaning, in particular the nuance of past possibility, potentiality or probability (5.14.a-b) or unreal counterfactuality (past *irrealis*; 5.14.c):

- (5.14) a. A maŋ a loŋ, ì **be** meŋ **fo** **la**  
 he did.not it know, they NVP what say LA  
 ‘He did not know what they could say’
- b. Ì kambenta ka feeroo dadaa ì **be** a **faa la** ñaameŋ  
 they agreed to plan make they NVP him kill LA how  
 ‘They plotted how they might destroy him’
- c. I ñanta bankoo fadi la le nuŋ ko siiŋaa lulu waraŋ wooro  
 you should country struck to FOC then as time five or six  
 ‘You should have struck the country five or six times;  
 tennuŋ i **be** Aramu bankoo **noo** **la**  
 so.then you NVP Syria country conquer LA  
 then you would have conquered Syria’ (adapted from WEC 1988)

The LA gram is also extensively employed in conditional periods. In protases, it may be used instead of the more regular TA and YE<sub>1</sub> formations, proving, however, slightly distinct meaning. While a protatic verb (i.e. found in protases) in the TA and YE<sub>1</sub> constructions expresses the fulfilment of a future condition or the accomplishment of a future activity – both related to the idea of future anteriority (see example 5.15.a) – the use of the LA formation does not indicate these senses. Rather than expressing completion and (logical and chronological) anteriority, the LA form denotes the intention of performing an action, corresponding to the form *be going to* + infinitive used in conditional protases in English (cf. example 5.15.b).

- (5.15) a. Sooma niŋ ite **ye** motoo **saŋ**,  
 tomorrow if you YE<sub>1</sub> car bought,  
 ‘Tomorrow, if you buy (when you have bought) the car,  
 ntel bi taa la Banjul niŋ motoo la  
 we NVP go LA Banjul with car with  
 we will go to Banjul’
- b. Sooma niŋ ite **be** motoo **saŋ na**,  
 tomorrow if you NVP car buy LA,  
 ‘Tomorrow, if you are going to buy the car,  
 m be taa la ka ite maakoyi  
 I NVP go LA to you help  
 I will go to help you’

The LA gram is also extensively employed in conditional apodoses where it expresses three types of meaning. First, in real factual conditional periods, the LA formation introduces hypothetical – since depending on the completion of certain requirements – but fully possible

future activities which logically and temporarily follow events expressed in the protasis. In such cases, it conveys the idea of real factuality fully compatible with its other future uses:

- (5.16) a. Niṅ ṅa kodoo soto, m **be** bokoo ṅiṅ **saṅ na**  
 if I.have money get, I NVP book this buy LA  
 ‘If I have money I will buy this book’
- b. Niṅ dindiṅolu ye booroo miṅ, ì **be kendeḃaa la** le  
 if children have medicine drunk, they NVP be.healthy LA FOC  
 ‘If children drink the medicine, they will be well’

However, the gram can also express the idea of counterfactuality, corresponding to present and past conditionals of Indo-European languages. If the state of affairs or activity conveyed by the LA form refers to a present situation, the gram introduces the real type of counterfactuality – a given action or situation fails to occur but can still materialise (5.17.a). If the whole scene is located in a past time frame, the LA gram expresses the nuance of unreal counterfactuality, approximating the category of a past conditional – the described event was contrary to a past state of affairs and it never materialised (5.17.b).

- (5.17) a. Niṅ ali ye wo moolu kanu, menṅu ye ali kani,  
 if you did that people love, who do you love,  
 ‘If you loved, people who love you (i.e. currently you do not love them)  
 wo **be** ali **nafaa la** muṅ ne la?  
 that NVP you benefit LA what FOC with  
 how would that benefit you?’
- b. Niṅ ite ye wo ke nuṅ,  
 if you did that do then,  
 ‘If you had done it,  
 tennuṅ nte baarinkewo **te faa la** nuṅ  
 so.then my brother NEG.NVP be.dead LA then  
 my brother would not have died (but he died)’

The LA formation can also be found with the conjunction *janniṅ* ‘before’ introducing two – certainly related – types of meaning. First, it may express past activities which occurred after other past events, being additionally accompanied by certain modal undertones of possibility, potentiality or probability (5.18.a-b). Second, in a present-future time frame, the gram denotes future actions that will take place after other future events have occurred. Once more, the activities expressed by the LA construction provide modal meanings, such as possibility, potentiality and probability (5.18.c). These values, typical of the *janniṅ*-clauses, approximate the LA gram to the category of a subjunctive – a syntactic epistemic mood which, from a crosslinguistic perspective, is commonly found in clauses introduced by temporal conjunctions with the meaning of ‘before’. However, the LA formation does not usually appear in other exemplary subjunctive environments, i.e. in final or purpose clauses where the SI and YE<sub>2</sub> forms are typically employed.

- (5.18) a. Nte kiita le a ñaato, janniŋ ate **be naa la**  
 I was.sent FOC him before, before he NVP come LA  
 ‘I had been sent ahead of him, before he came / would come’
- b. A ye a baŋ loo la le,  
 he did it finish construct to FOC  
 ‘He finished constructing it  
 janniŋ mansa **be muru la**  
 before king NVP return LA  
 before the king returned / would return’
- c. Alifaa, naa, janniŋ n diŋo **be faa la**  
 sir, come, before my child NVP die LA  
 ‘Sir, come before my child dies / may die’

The LA gram can also express future anterior events, i.e. activities which will have occurred before other future situations. Observe that in each one of the following sentences, the LA formation is employed twice, i.e. in the main and subordinate clauses. In the main clauses, it introduces future events which will precede other future activities expressed in the subordinate clause:

- (5.19) a. Janniŋ duntuŋo be kuma la bii,  
 before rooster NVP call LA today,  
 ‘Before the rooster crows (has crowed) today,  
 i **be n soosoo la** siĩnaa saba  
 you NVP me deny LA time three  
 you will deny me three times / you will have denied’ (adapted from  
 WEC 1988)
- b. Janniŋ ñiŋ kuwolu bee be ke la,  
 before this things all NVP happen to,  
 ‘But before all this occurs (have occurred),  
 ì **be moolo bee muta la**  
 they NVP people all seize to  
 they will imprison all the people’

Lastly, it must be noted that in Basse Mandinka the LA gram is never employed to express present progressive activities. This means that a present progressive reading of the sentence in example 5.20.a is impossible. This phrase is always interpreted as referring to a prospective time sphere (i.e. as a future or as a future in the past). In order to express a non-future (present or past) progressive meaning by means of a periphrasis built around the elements *be* and *la*, one must employ a verbal noun (*boroo*) instead of the verbal base (*bori* (5.20.b); see the NomLA gram in section 2.3).

- (5.20) a. A **be bori la**

- he NVP run LA  
 ‘He is going to run / will run’
- b. A **be boroo la**  
 he NVP driving LA  
 ‘He is driving’

### 5.1.2 Dynamic map

The evidence provided in the previous section indicates that the LA gram displays the following values: Most commonly, it functions as a future tense (i.e. as a simple and straightforward expression of future actions and situations), being occasionally accompanied by subtle prohibitive undertones. It sometimes conveys the ideas of aim and intention, corresponding to the English construction *be going to*. As far as its aspectual load is concerned, the LA gram introduces both perfective (punctiliar and bounded) and imperfective (durative and unbounded) future activities. Furthermore, the formation is employed as a future-in-the-past category, at times providing modal shades of meanings such as past possibility, probability and counterfactuality. In addition, the LA gram frequently appears in conditional periods. In protases, it mainly expresses the intention of performing a given prospective activity, by which it contrasts with the TA and YE<sub>1</sub> forms that convey the idea of future anteriority or a relatively certain accomplishment of a future action. In apodoses, the LA locution expresses three different values: it denotes real factual events, real counterfactual activities, and unreal counterfactual situations. In the last two instances, the formation approximates to the use of Indo-European present and past conditionals, respectively. In temporal clauses headed by the conjunction *jannij* ‘before’, the gram indicates past activities which occurred after other past events, or future actions that will take place after other future events have occurred. In both cases, the formation conveys the modal ideas of possibility, potentiality and probability, comparable to the use of subjunctives in Indo-European languages. In a few cases, the construction expresses future events which will have occurred before other future situations, thus conveying the nuance of future anteriority. Lastly, the data indicate that the LA gram is never employed as a progressive present and continuous present.

The evidence demonstrates that the semantic content of the LA gram greatly exceeds the temporal idea of futurity, even though the value of a future tense constitutes its most prototypical component. First – as has already been noted by Macbair (1842) – the sense of futurity is sometimes accompanied by the nuance of intention or aim. Second, the LA form is extensively used as a future in the past category. Third, the locution rarely offers future anterior readings. And fourth, it conveys certain modal values, although these – with the exception of the intentional sense – are usually restricted to determined syntactic environments: a) in conditional apodoses, the LA construction quite commonly introduces real and unreal counterfactuality (besides a real factual value related to the predominant future character of this gram), corresponding to the category of present and past conditionals found in Indo-European languages; and b) in *jannij* clauses, it can convey the ideas of possibility, potentiality and probability, typical of subjunctives.

Following the principles of a dynamic understanding of verbal meaning adopted in this dissertation, I will propose a kinetic map that could internally organise the semantic potential of the LA gram. Given the importance of senses related to the idea of futurity, it is likely that the LA gram could be networked by using one of the future paths or grammaticalisation clines that lead towards the development of future tenses.

As explained in section 1.2.3.4, in general terms, futures (of various origins) can display four evolutionary ages (so-called “futages”): 1) futures with agent-oriented senses (obligation, desire and ability); 2) modally coloured futures (futures with nuances of intension, root possibility, immediate futures); 3) simple futures (i.e. the future sense is the only or by far most prototypical sense); 4) futures with subordinate uses. This roughly corresponds to the general path of modality: agent-oriented modal senses > epistemic and speaker-oriented senses > modal future sense > simple future sense > subjunctive use.

Given the empirical data presented in section 4.1.1.2, the meaning of the LA gram seems to cover three stages of this general development. Namely, by expressing the ideas of future intentionality (this value can be understood as corresponding to the stage of a modally coloured future which equals the second stage of futures), the simple future (this sense, be it perfective or imperfective, reflects the third stage of futures) and subordinate epistemic values in conditional and *jannij* clauses (this use matches the fourth stage of futures), the LA formation spans the cline from the second to the fourth stage, with the prototypicality peak located in the zone of a simple future. Accordingly, the LA gram may be defined as an advanced future-path formation. Even though it can offer modal shades of meaning, it has been grammaticalised as a main expression of futurity in Basse Mandinka. In its most typical uses, the locution expresses simple future statements. Inversely, the modal component of the LA form is less patent than its future or prospective meaning. The networking of the semantic potential of the LA gram by means of a future path can schematically be represented in the following manner:

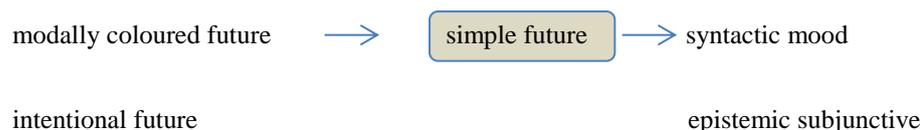


Figure 5.1: The map of the LA gram – modal-path senses

This profound advancement on the future path, postulated in the previous paragraph, justifies the use of the locution as a future perfect. To be exact, in various languages, when an original non-anterior future gram is generalised as a paradigmatic future tense, it may also become compatible with the domain of future anteriority. This phenomenon usually occurs with advanced future-path grams, i.e. with formations whose prototypicality zone is located in the sphere of a simple future. Consequently, the highly prototypical use of the LA gram as a simple future motivates the meaning extension to the domain of a future perfect.

Lastly, the values of a future in the past – both as far as simple and perfectal senses are concerned – are consistent with the posited map of the LA gram and constitute a regular case of a transposition of a future-cline formation from a present-future temporal sphere to a

past time frame. Since the predicator *be* in Basse Mandinka is used both in a present and past time frame, the future-path LA periphrasis could have been employed with a past reference, giving rise to the future-in-the-past and future-perfect-in-the-past values.

Although the general future path can capture the synchronic variation of the semantic potential offered by the LA gram, it in fact encompasses a number of different clines leading to futurity. To be exact, from a more fine-grained and more diachronically oriented perspective, the general future path may relate to various types of modal and allative (movement) trajectories. As explained in section 1.2.3.3 and 1.2.3.4, future grams commonly originate from modal expressions. Such modally based futures exhibit four stages analogous to the four futages mentioned above and to the stages of modal clines discussed in chapter 4. The first stage includes modal constructions that convey agent-oriented values, such as desire, intention, obligation and ability. The second stage corresponds to futures that are regularly accompanied by modal senses, which themselves are related to more advanced phases of modality: intention, speaker-oriented (e.g. imperative) and especially epistemic (e.g. possibility and probability). The third stage comprises grams with the value of a simple future as their unique or, at least, most prototypical use. The fourth stage includes futures that are restricted to subordinate clauses where they offer epistemic readings, developing into a broadly understood subjunctive category. Highly similar stages are posited for futures that develop from movement verbs. In addition, futures can sometimes arise from analytical expressions that are formed with temporal adverbs. Finally, they may also constitute extensions of an imperfective cline. This means that a future tense can correspond to a highly advanced stage of an original imperfective gram and/or present tense (cf. sections 1.2.3.1, 1.2.3.4 and 1.2.3.5). In order to determine which one of the trajectories towards futurity the LA construction has followed and in order to ensure that the future-path mapping is accurate (and thus show that the gram is not a case of an old present – an imperfective-path form), both the structure and, once again, the meaning of the LA locution must be taken into consideration.

In general, from a synchronic perspective, the composition of the LA gram seems to copy the structure of the so-called ‘be’-futures. ‘Be’-futures are future expressions that are composed of a verb or entity that expresses existence or location and the base or infinitive of a lexical verb, frequently introduced by an adposition or infinitive marker (cf. the English expression *He is to come*). From an evolutionary perspective, ‘be’-futures of this type belong to the modal subtype of future paths, i.e. futures that develop from modal sources. At the beginning, the ancestors of ‘be’-futures commonly provide a strong sense of predestination. Subsequently, the predestination shades of meaning (as well as the value of obligation may arise from it) give rise to the sense of intention and finally to the genuine future reading which, in turn, may entail further extensions in accordance with the general future path (cf. section 1.2.3.4).

The formal characteristics of the LA gram perceivable in the modern language suggest that a likely origin of this locution was such a ‘be’-periphrasis accompanied by a predestination value. It is still easy to distinguish in the LA form two typologically common components of ‘be’ predestination sources: the non-verbal predicator *be* (a Basse Mandinka equivalent of a locative verb such as *to be*) and the infinitive or directional marker *la*

(corresponding to the English *to*). Thus, the expression *A be a ke la* ‘He will do it’ can be deconstructed into a more literal analytical chain *A (he) be (is) a ke (do it) la (to)* ‘He is to do it’, which directly matches the class of ‘be’-futures. If the form of the LA gram available synchronically corresponds to the input construction, there are no traces of any agentive modal periphrastic origin. Consequently, other modal-path maps are unlikely.

Additionally, it is important to recall that on the one hand, the LA formation provides intentional value, a typical sense located along the predestination cline, and on the other hand, it fails to convey the agent-oriented nuances of obligation and ability/capacity, characteristic of other modally-based future paths. Accordingly, the morphosyntactic characteristics of the gram, its understanding as a periphrasis composed of the predicator *be* (an equivalent to the existential or locative ‘be’-type verbs) and the infinitival marker *la* (an earlier locative postposition)<sup>228</sup> and the semantic properties (the presence of an intentional meaning, the absence of agent-oriented values, and the compatibility with modal future, future and subjunctive uses) suggest that the gram may have followed the genuine future path of a modal predestination origin. However, it should also be observed that a predestination sense – the conceptual and diachronic centre of the map – fails to occur in the LA gram in Basse Mandinka. This may be interpreted as an indication of a profound advancement of the LA form on the path, corroborated by the fact that in its main use, the construction corresponds to the third stage of futurity. As the LA form has approximated the prototype of a grammatical future tense, it is to be expected that it would no longer be a modal expression with future implications.

The above proposed mapping may be indirectly supported by certain properties displayed by the variety of English employed in Basse. In “Basse English”, speakers tend to substitute future tenses derived with the auxiliaries *will* or *shall* (e.g. *I will come tomorrow*) with a predestination expression: *be to* (i.e. *I am to come tomorrow*). This usage may give us insight into the cognitive understanding of the LA form by native speakers. In other words, when speaking English, Mandingoes from Basse would employ a predestination future expression analogous with the formation available in their mother tongue. Such a phenomenon is typical for second-language speakers or users of pidgins, mixed languages and inter-languages.

Having explained the majority of the senses of the LA form as consecutive stages on the future path of a predestination origin, I will relate this map to three remaining values offered by the gram in conditional apodoses: real factuality, real counterfactuality (present conditional) and unreal counterfactuality (past conditional). The position of a real factual nuance is self-explanatory as this sense differs from the value of a future uniquely by the fact that the expressed prospective event depends upon an accomplishment of certain conditions. Therefore, it is viewed as hypothetical. This nuance of uncertainty stems from the context of a conditional period (in which the apodotic LA variant appears).<sup>229</sup> Accordingly, this subtype of the meaning can be regarded both as a regular stage on the future path as well as a case of modal contamination.

<sup>228</sup> That is to say, its understanding as an expression of the type *M be a ke la*, literally ‘I am to do (it)’.

<sup>229</sup> The importance of a nuance of uncertainty found in real factual conditional apodoses is slightly exaggerated in this discussion.

Two further values found in conditional apodoses (real counterfactuality or present conditional, and unreal counterfactuality or past conditional) require a more profound discussion. As explained in section 1.2.3.4, in various languages, futures are conceptually and historically linked both to present conditionals (real counterfactual moods) and past conditionals (unreal counterfactual moods). To be exact, if a gram of a future path is transposed into a past temporal frame (for instance by substituting the present tense auxiliary by its past equivalent), the original agent-oriented modal meaning is extended into the value of a future in the past or prospective past, and subsequently into the modal sense of counterfactual real possibility, probability or eventuality. At the end of this development, a prototypical conditional formation is derived. Just like futures are related to conditionals (the former derive from present agent-oriented expressions, while the latter stem from analogous past constructions), future perfects are connected to past conditionals. From a typological perspective, both types of locutions are common combinations (at least from a diachronic perspective) of future and perfectal morphologies. In addition, past conditionals employ morphological marking which is typical of past categories. These two types of modal values (real and unreal counterfactuality) typically arise in an explicit modal environment provided by conditional periods, especially in apodoses: the future in the past located in conditional apodoses develops into a present conditional (real counterfactual mood) while the future perfect in the past evolves into a past conditional (unreal counterfactual mood; for a detailed discussion, see section 1.2.3.4 and 1.2.3.5).

The Basse Mandinka LA gram – due to its extensive polysemy spanning the domains of a future and future perfect as well as because of possible present and past readings of the non-verbal predicator *be* (i.e. both as ‘is’ and ‘was’) – can be viewed as an example of these two developments. The use of the LA gram as a simple future and its ability to be transposed into a past temporal context with the sense of a future-in-the-past justifies the use of the gram as a present conditional – the apodotic mood of real counterfactuality. In a similar manner, the compatibility with a future perfect domain would motivate the acquisition of an unreal counterfactual sense, typically conveyed by past conditionals – the apodotic mood of unreal counterfactuality. Put differently, since the LA gram can convey the meaning of a future perfect and since the predicator *be* may be used in a past temporal sphere, the locution typologically approximates a future-perfect-in-the-past expression that frequently evolves into a past conditional.

One should note that real factual, real counterfactual and unreal counterfactual readings of the LA gram are particularly intense in conditional apodoses. This fact complies with a typological principle governing the rise of conditionals. As explained in section 1.2.3.4, during the process of a modal contamination, non-modal expressions commonly acquire modal senses. In subordinate clauses, present and future tenses evolve into present subjunctives (or acquire the sense of real factuality), past tenses develop into imperfective or past subjunctives (or acquire the sense of real counterfactuality), and pluperfects transform into pluperfect subjunctives (or acquire the sense of unreal counterfactuality). An analogous process is found in non-subordinate clauses – especially in apodoses – with the difference that instead of a subjunctive the ultimate outcomes are conditionals (the real factual apodotic form is usually identical to a future tense). Accordingly, by exhibiting conditional nuances in

an apodotic context, the LA gram would be an example of a modal contamination that is imposed by the explicit modal environment upon a form evolving along the future-path. However, since futures – in particular futures of a modal origin – are always somehow related to the idea of modality, one could alternatively propose that the use of futures in the explicit modal context of conditional apodoses strengthens modal strings in their meaning rather than imposes new modal senses. Since future grams are closely tied to the concept of modality, they almost naturally lend themselves to modal contamination.

This means that although the modal senses of real factuality and real or unreal counterfactuality provided by the LA form in conditional apodoses can be explained as having arisen due to the modal contamination, all of them may also be understood as reflecting the last stage of future tenses where such grams evolve into syntactic moods (cf. above in this section). The two processes (on the one hand, the use of future expressions in modally marked contexts and, hence, their modal contamination and, on the other, the increase of epistemic modal components in future tenses in various environments as a result of their gradual progress on the future cline) are interconnected, additionally motivating the development of the future gram towards the epistemic domain of subjunctives and conditionals.<sup>230</sup> In fact, typological studies show that modally-based futures and futures which were developed due to modal contamination conflate at the more advanced stages of evolution, both developing into syntactic moods, subjunctives (in protases or subordinate clauses) or conditionals (in apodoses).

To conclude the plotting of the map of the LA gram, one should additionally note that the unreal counterfactual (past conditional) value may also correspond to the expansion of a real counterfactual sense (present conditional) to the domain of past and *irrealis*. In certain languages in which the past conditional disappears, the present conditional incorporates the values of the unreal counterfactuality even though the formation does not derive from a future-perfect-in-the-past morphology (compare the Polish gram *napisalby*, which is used both as a present and past conditional). This means that since, in Basse Mandinka, the future perfect value corresponds to a mere expansion of the LA future to the domain of future anteriority, the present conditional value (arising from the future-in-the-past sense) could simply have been expanded to the past conditional usage, instead of having directly descended from the future-perfect-in-the-past sense of the LA form. In fact, the two processes may have coincided leading to the same output.

Consequently, the meaning of the LA formation can be understood as a rational and coherent whole by employing two typologically plausible paths as matrices for its conceptual chaining: a genuine future path of a predestination origin and a concomitant modal contamination cline activated in apodoses (and possibly in subordinate *jannij* clauses). Given its semantic properties, the gram is classified as a highly advanced future-path gram with the prototypicality zone located in the area of a simple future. Although other values are well documented, they are less common, probably with the exception of the conditional use which

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<sup>230</sup> In a similar manner, the modal senses available in subordinate clauses headed by *jannij* may also be explained as having arisen as a result of a modal contamination imposed by an explicit modal context as well as by the inherent ability of future-predestination grams to develop modal nuances.

is relatively frequent. As a result, the following linear wave representation may be formulated:

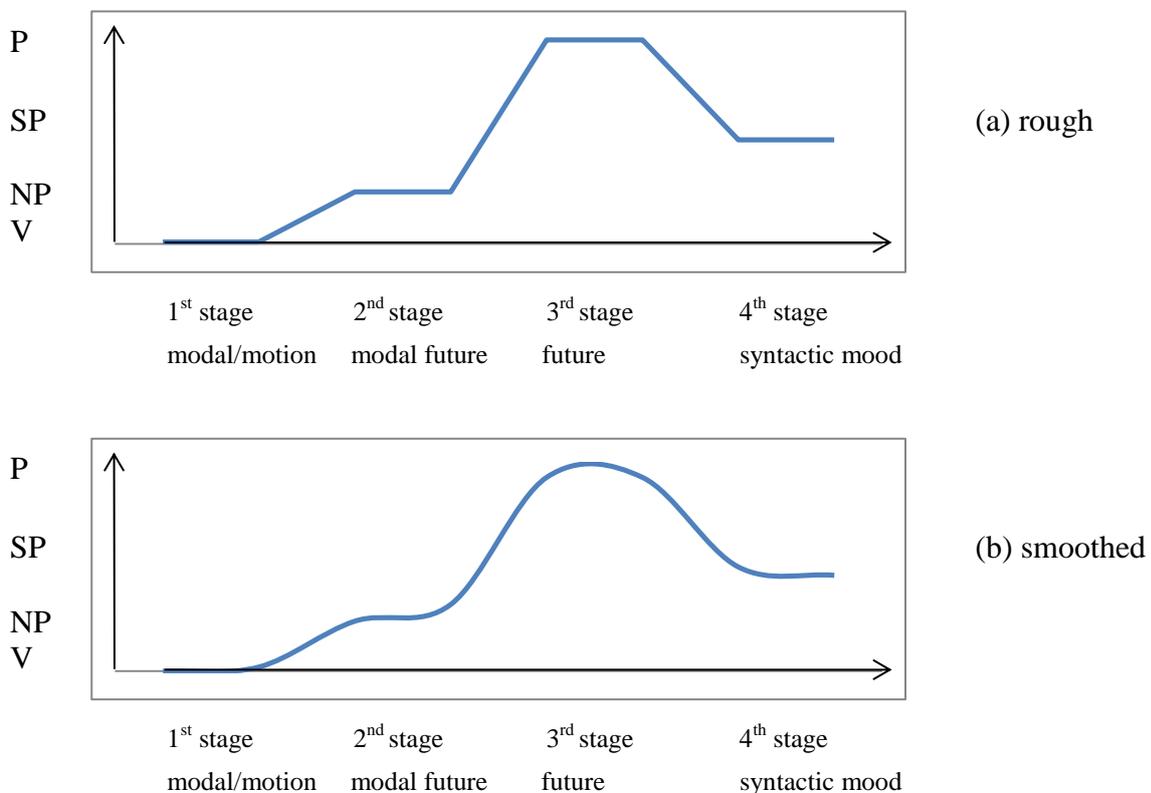


Figure 5.2: The semantic network of the LA gram in Basse Mandinka – wave model

The comparative evidence is ambiguous as far as its relation to the future-path mapping of the LA gram is concerned. First of all, the meaning of a cognate formation in Bambara seems to confirm the dynamic definition of the LA gram formulated above. Bambara possesses three verbal grams that can express the idea of futurity. They are composed of a verbal base and the elements *bé/bé*, *béna/béna* or *na*. The LA gram of Basse Mandinka seems to genetically correspond to the *bé/bé* form of Bambara (concerning *béna* and *na*, see section 5.2 below). As will be evident from the subsequent discussion, although this locution has been defined in a variety of manners, its meaning is generally consistent with the proposed mapping of the LA gram in Basse.

According to Houis (1981:18, 47), the *bé/bé* gram is a type of an imperfective aspect (“non-accomplí absolutif”) that is able to denote future immediate or certain events. Moreover, the insertion of the lexeme *tùn* converts this expression in a non-actual mood (“mode de l’ inactuel”) with an unreal counterfactual value. In a similar vein, Koné (1984:14) classifies the locution as an imperfective (“inaccompli”), a form that besides providing habitual and progressive uses may also function as an “éventuel” or future. This occurs especially if the gram is accompanied by a specific future adverb such as *síni* ‘tomorrow’. In this type of usage, the gram expresses – temporal rather than modal – future or prospective events. According to Tera (1984:29), the *bé/bé* locution is a neutral imperfective form

(“inaccompli neutre”) whose future readings are imposed upon by complements (e.g. adverbs) that make an explicit reference to a future time frame, or by a general temporal contexts established by the discourse or text. Blecke (1988/2004:39-40) defines the *bé/bé* form as a future void of any explicit intentional senses. Additionally, if this construction appears in combination with the lexeme *tùn*, the entire periphrasis expresses probability, conditionality and uncertainty.<sup>231</sup> Lastly, according to Idiatov (2000:13-14), the *bé/bé* gram is a predictive form (“prédicatif”) that may be employed as a relative (rather than absolute) future, additionally occurring in conditional clauses. It typically functions as a future tense unmarked for the trait of modality, introducing immediate, inevitable and certain future events. However, in conditional periods, the modal values are stronger than the idea of prediction. Other modal nuances appear when the gram is used as a future imperative or when it is employed in order to convey polite prohibitions. Finally, on less common occasions, it may express intention. Despite a certain discrepancy in the classification of the Bambara *bé/bé* form, its semantic potential is comparable with the meaning of the LA gram. It includes the domains of a simple future, a future in the past, a modal future, a counterfactual conditional and a mood of probability (when employed as a conditional and/or when used in a past time frame). Accordingly, it seems that the Bambara cognate locution is semantically consistent with the future-cline mapping developed for the LA gram.

In addition, there are Manding and Mande languages where similar constructions are employed as paradigmatic future tenses, for instance in Jula (*bè* + verb; Braconnier 1991), in Kita Maninka (*yé / bé* + verb as in *Mùsú yè/bè yèlè* ‘The woman will laugh’; Keïta 1984:7), in Kagoro (*bí/bì* + verb as in *Ń bí táyá kònògènyótó* ‘I will hunt the birds’; Creissels 1986:13) and in Vai (*ì* + verb stem-*l(à)*; Tröbs 2014).

However, the map of the Basse Mandinka LA form hypothesised in this section (i.e. its definition as a future-path gram) is not unproblematic. There are some languages where the cognates of the Basse Mandinka *be* are used with verbal bases and the postposition *la* in the function of a progressive and/or habitual. As a progressive, the construction is used in Jula (Derive 1990), Mogofin, Koranko (Tröbs 2004a:135). As a habitual, it is found in Xasonka (Tveit 1997), Vandugukakan and, again, Mogofin (Tröbs 2004a, 2009:215; see also Houis 1981, Koné 1984 and Tera 1984). If one accepts that the auxiliaries of the *be* and *ye* types (found in locutions with *la*) are etymologically related (the latter being a weakened variant of the former; cf. Kastenholz 1996, 2003:40, Tröbs 2003:6), the number of ‘be’ (i.e. *be* or *ye*) + verbal base + *la* constructions with a progressive-habitual meaning is much greater (cf. Tröbs 2004a and 2009:195-196, 208-209, 214-215). In fact, in Manding, most paradigmatic futures (almost all futures in Eastern Manding and some in the Western variety) are built around the auxiliary *nà* ‘come’ or its cognates, while the vast majority of the constructions identical or similar to the LA gram exhibit a progressive or habitual sense (Tröbs 2009:214-215).

If the Basse Mandinka gram is genetically connected to these formations, it should rather be viewed as an old present tense reduced to future and modal uses (cf. Tröbs 2003, 2004, 2009). As future tenses do not evolve into progressives, the progressive meaning of similar LA constructions in Manding must have emerged from the imperfective cline. This

<sup>231</sup> See also Rozhansky (2002) who defines the formation as an imperfective, present-future gram.

would, in turn, imply that the future sense of the LA gram in Basse would have arisen due to the imperfective cline. Thus, a possible cognate form in Maninka of Niokolo (the so-called “inaccompli” gram; Creissels 2013b:71), which can function both as a present (*I bé bolá mintoo?* ‘Where are you coming from’) and future (*Luntáño doo be náala i yáa* ‘The guest will come to you’; *ibid.*), can have only derived from an original progressive construction. The reverse evolution seems to be impossible.

Because of the facts which will be discussed below, the safest is to assume a possibility of two sources from which grams of the type [*be* + base + *la*] have emerged and, thus, two path mappings with which they can be defined: one based on a future-path template (Basse Mandinka) and the other based on the imperfective-path template (some other Manding dialects).

First, the genetic relation between *be* and *ye* is still being debated and some scholars maintain a distinct origin of these morphemes (see Creissels 1997a according to whom *ye* comes from the imperative of the verb *yé* ‘see’). If there is no such relation, the number of progressive LA grams (i.e. direct cognates of the construction *be* + verbal stem + *la* in Basse Mandinka) drastically diminishes. Second, in Basse Mandinka, the entity *la* in the LA gram – and in some other constructions – is not a postposition but an infinitive marker. In this function it is not an ideal candidate for a locative progressive construction – it rather offers a structure typical of future grams of the predestination cline.<sup>232</sup> Third, the fact that the Basse Mandinka LA gram never expresses habitual or gnomic values is a strong piece of evidence that makes the old-present hypothesis questionable.<sup>233</sup> Fourth, as important is that the LA form is not generalised in an exemplary subjunctive context of final and purposive clauses. It is the SI and YE<sub>2</sub> locutions that are used as compulsory and semantically void subjunctives. As explained in sections 1.2.3.1 and 1.2.3.3, old presents offer not only future senses, but also, and in fact typically, modal subjunctive uses. Fifth, the LA gram expresses the intentional value similar to *I am going to* or *I wish to* in English, which is usually absent in futures that emerge from old presents. This value was patent in the 19<sup>th</sup> century when according to MacBair (1842:17) the gram denoted the intention to perform an action and the intention of going to perform it. Sixth, although the predestination sense is absent nowadays, it seems to have existed in the 19<sup>th</sup> century, as may be deduced from MacBair’s study. To be exact, MacBair (1942:17) associates the LA gram with the meaning ‘I am to do something’ and identifies this sense as the most original. Seventh, if the SI, KA, KAD, NomLA, NomKAD (see chapter 2) and LA formations are all imperfective-path grams, the language would synchronically include four imperfective-cline waves (and 6 grams): the first (SI), the second (LA), the third KA and the fourth (KAD, NomKAD/NomLA). Such saturation seems to be extreme.<sup>234</sup> Eight, one should recall that the most original (i.e. the oldest) imperfective-path periphrasis is the SI gram (cf. Tröbs 2003:3; see section 2.5), which in Basse Mandinka

<sup>232</sup> Its status as an infinitive marker may in fact be quite ancient. However, it is related to the original postposition *la*.

<sup>233</sup> However, the absence of progressive and continuous senses may be related to the old evolutionary age of the LA gram and its great semantic advancement on the cline.

<sup>234</sup> In a pilot study dedicated to the phenomenon of saturation of streams, ten languages have been compared. Preliminary results indicate that the imperfective stream usually hosts two or three waves. In other words, they tend to be two or three waves of constructions evolving along the imperfective path. Furthermore, the highest density appears in the initial section of the stream (progressive grams).

offers habitual senses, besides typical modal and future values. If the Basse Mandinka LA gram was an imperfective-path gram, which would constitute the second cycle or wave (the first one is the SI or its original variant DI/TI; cf. Tröbs 2003, 2004a, 2009), it would have “caught up with” and “taken over” its predecessor the SI formation. The SI gram (the first wave) would be less advanced than the LA form (the second wave). This seems to be highly improbable and I am unaware of such a development in any language. Finally, it may be fitting to argue for the suitability of the future-path model of the LA gram because of the special status of the NAA LA construction in Basse Mandinka if it is compared with other venitive futures in Manding. In most Manding dialects, paradigmatic future grams are composed of the auxiliary *nà* ‘come’ or its cognates, structurally similar to the NAA LA form in Basse (Tröbs 2009:214-217). In these dialects, grams that are morphosyntactically equivalent to the Basse Mandinka LA form usually function as habituais (ibid.). However, as the Basse Mandinka venitive NAA LA formation is not a paradigmatic future gram but rather a perfect(ive) future or an immediate future of certainty and most likely has never been used as a general paradigmatic future tense (cf. section 5.2 below), its travelling along the future path was not “blocked” – the LA construction could have followed it from its very origin instead of evolving along the imperfective path as elsewhere.

The discussion above does not imply that the constructions composed of the cognates of the predicators *be* (possibly also *ye*) and the marker *la* in other languages could not constitute the second cycle of imperfective-path grams as posited by Tröbs (2003; see also Tröbs 2009). Tröbs’ thesis is correct – in these languages, the DI and LA waves (the first and the second wave, respectively) evolve regularly in the way that the former is more advanced (broad imperfective, future and modal) than the latter (progressive, habitual, future). This would merely mean that Basse Mandinka has developed differently i.e. by travelling along another cline, i.e. future path (on this issue, which is related to the complexity of language, see section 7.2).

## 5.2 The NAA LA gram<sup>235</sup>

The second gram of the future-path type corresponds to a construction formed by the non-verbal predicator *be* ‘be’ (in the negative *te*), the entity *naa*, related to the verb ‘come’, the base of a lexical verb and the infinitive marker *la* ‘to’ (5.21.a). This locution – in accordance with its formal properties and, especially, the two distinctive components – will be referred to as the NAA LA form. The structure of the NAA LA gram is very similar to the form of the LA construction analysed in the previous section. Both periphrases include as their constant components the non-verbal predicator *be* and the infinitive marker *la*. The only – and very significant – difference between them is the use of the element *naa* in the NAA LA form and its absence in the LA gram (5.21.b).

(5.21) a.	M	<b>be</b>	<b>naa</b>	a	<b>ke</b>	<b>la</b>
	I	NVP	NAA	it	do	LA

<sup>235</sup> This section draws on my article “A cognitive-grammaticalization model of the *BE NAA...LA* construction in Basse Mandinka” published in *Linguistica Copernicana* 9 (cf. Andrason 2013d).

- ‘I am almost done with doing it’
- b. M    be    ---    a    ke    la  
 I    NVP ---    it    do    LA  
 ‘I will do it’

As was the case with the LA gram, the NAA LA expression can be formed with all types of roots, be they dynamic, activity, motion, postural, static or adjectival. It can also appear in transitive (see examples 5.22 and 5.23 in the next section) and intransitive (including de-transitive; see examples 5.24 and 5.25) constructions. However, it is important to note that the overall frequency of the NAA LA form is very low. Together with the MAA construction (cf. section 4.3), it is the least common component of the Basse Mandinka verbal system.

### 5.2.1 Semantic potential

#### 5.2.1.1 Grammatical tradition

Except for Creissels & Sambou (2013:93, 160, 420 and 482), the NAA LA gram has not been discussed in books, grammars and articles dedicated to the Gambian Mandinka language. As may be inferred from their Mandinka grammar, the form offers two main uses: future and ‘almost’-perfect/future (cf. section 5.2.1.2 below) i.e. the expression is used in subordinate clauses with the meaning of “jusqu’à être sur le point de” (Creissels & Sambou 2013:482). The treatment of cognate constructions in Bambara and other Manding dialects has been significantly more extensive and will be discussed in section 4.2.2.<sup>236</sup>

#### 5.2.1.2 Evidence from Basse

As will be evident from the following description, the NAA LA construction offers a broad range of uses where various semantic domains, either individually or jointly, are activated. I will begin the presentation of the semantic potential of this gram with cases where the NAA LA expression is employed in a non-past time frame. In this temporal environment, the form quite commonly functions as a future perfect, expressing future events that will have occurred before other future activities take place.

- (5.22) a. Janniŋ m    be    taa    la,    m **be naa**    a    **ke la**  
 before I    NVP    go    to    I    NVP NAA    it    do    LA  
 ‘Before I go, I will have done it’
- b. M    **be naa**    bukoo ñiŋ    **safee la**, janniŋ m be    taa    Gambia  
 I    NVP NAA    book    this    write    LA before I    NVP go    Gambia  
 ‘I will have written this book, before I go to Gambia’

However, the NAA LA form can also hold the idea of futurity with no perfectal nuances. For example, it may emphasise the temporal proximity of a given future action to the speaker’s

<sup>236</sup> This stems from a greater frequency of such forms in other variants of Manding.

here-and-now. In such cases, future events are portrayed as near (5.23.a) or imminent, i.e. as just about to be completed (5.23.b). These functions will be referred to as a ‘proximate future’ and ‘imminent future’, respectively:

- (5.23) a. M    **be**    **naa**    a    **ke**    **la**    miniti    dantaŋ    ñaato  
 I    NVP   NAA   it    do    LA    minute   a.few    before  
 ‘I will do it in a few minutes’
- b. A    fele!    A    **be**    **naa**    motoo    ñiŋ    **tiña**    **la**  
 him   look.at   he    NVP   NAA   car    this    spoil   LA  
 ‘Look at him! He is just about to spoil the car’

The proximity of a future event can be increased to the point where activities expressed by the NAA LA formation are regarded as almost having been performed. This variety will be referred to as an ‘almost’-perfect (5.24.a and 5.24.b). In scarce instances, a future action seems to be more imminent, to the degree that it is viewed as already having occurred, although in the actual world it is still pending completion or verification. This peculiar usage will be denominated as a ‘false perfect’: the intended sense is that of a perfect of current relevance even though the expressed fact has not occurred yet in the real world. One should observe that in example (5.24.c), the NAA LA form fails to refer to a future time sphere – it portrays an event as having already happened. As has been explained in section 1.2.3.4, future perfects in various languages can express events which are already accomplished, in an imaginary or real world. For instance, the Mandinka sentence in 5.24.c corresponds to the Spanish future perfect *Ya habré muerto* ‘lit. I will already have died’ i.e. ‘I am already dead’. Since these two uses (i.e. ‘almost-’ and false perfects) involve the semantic domain of anteriority typical of perfects, they are conceptually related to the future perfect sense which was discussed in the previous paragraph.<sup>237</sup>

- (5.24) a. Maariyo,    Mariyoo,    m̄    **be**    **naa**    **kasaara**    **la!**  
 sir,            sir,            we    NVP   NAA   perish    LA  
 ‘Lord, Lord, we are almost perished!’
- b. M    maŋ    diyaamu    noo,    m    maŋ    jeroo    ke    noo,  
 I    do.not   talk    can    I    do.not   seeing   do    can  
 ‘I cannot talk, I cannot see,  
       **m**    **be**    **naa**    **faa**            **la**  
       I    NVP   NAA   die            LA  
 I am almost dead’

<sup>237</sup> It is important to note that the semantic domains of ‘almost’ and false perfects are not metaphorical devices imposed by the English translations. To refer to these semantic domains, I use labels that make reference to the term ‘perfect’. These labels, however, are only a matter of terminology. Any other denomination could be chosen. The important fact is that this semantic domain is quite commonly associated with future perfect grams (*grammatical categories*). Put differently, some future perfects in the languages of the world convey the sense where it is not the nuance of futurity being profiled, but rather the idea that a given action *has almost occurred* or *has already occurred (in the imaginary world)*. An excellent typological correspondence is the Spanish future perfect as well the future perfect in the Vilamovicean language (cf. section 1.2.3.4).

- c. M     **be**    **naa**   **faa**   **la**     fokabaŋ  
 I     NVP   NAA   die     LA     already  
 ‘I am already dead’

The NAA LA construction can emphasise not only the temporal proximity of a future situation to the speaker’s here-and-now, but also its certainty or inevitability. Namely, the gram quite frequently – within its overall uncommonness – indicates general (i.e. non-perfectal) future activities (either near or distant), portraying them as definite and obvious facts. They theoretically belong to a common knowledge or are generally recognised – at least within the enunciator’s cognitive world. This usage can be labelled a ‘future of certainty’.

- (5.25) a.   Dindiŋolu   **be**   **naa**   **ke**   **la**     keebaalu    ti  
 children     NVP   NAA   be     LA     elders       EXIS  
 ‘Children are going to become elders’
- b.   Moofinduulaa la     katadamfu     ñoosaba     baa  
 Africa       of     football     competition   big  
 ‘The Africa Cup in Football  
**be**   **naa**   **ke**   **la**     Angola       bankoo       kaŋ  
 NVP   NAA   occur   LA     Angola       country       on  
 is going to take place in Angola’
- c.   Jamaalu       mennu keta             foloolu       ti  
 many       who   are             first         EXIS  
 ‘Many who are first  
 wolu le    **be**   **naa**   **ke**   **la**     labaŋolu    ti  
 those   FOC   NVP   NAA   be     LA     last         EXIS  
 will be last’ (adapted from WEC 1988)

Future actions expressed by the NAA LA gram may be regarded as being so certain and evident that they are inevitable. In this usage, the construction has a force similar to English periphrastic expressions with the words *inevitably*, *definitely* or *without doubt*. This sense will be referred to as a ‘future of inevitability’ (cf. examples 5.26.a-b, below). It should be noted that in the two last uses of the NAA LA form (i.e. as a future of certainty and inevitability) the formation expresses future events that constitute predictions (either certain and inevitable) derived from a common knowledge or a concrete present situation.

- (5.26) a.   Massi           siyaata           Ronaldo       ti;  
 Barcelona   is.better       Madrid       than  
 ‘Messi is better than Ronaldo;  
           a    **be**   **naa**   **gañeeroo** **ke** **la**     sooma  
           he   NVP   NAA   winning   do LA   tomorrow  
           he is going to win without doubt tomorrow’

- b.    *Ŋa*    *i*       *koŋ*   *ne!*    *M*    **be**    **naa**   *i*       **faa**   **la!**  
       I       you   hate   FOC    I       NVP   NAA   you   kill   LA  
       I hate you. I will definitely kill you

The NAA LA construction may, likewise, denote actions that are perceived as presumably already having occurred. Thus, it depicts events that are viewed as having already materialised and being accomplished. This usage is similar to the sense of a false perfect (cf. 5.24.c, above) but this time, the evidence from the real world seems to confirm the idea conveyed by the NAA LA form. This usage will be denominated as ‘a perfect of certainty’ although it also seems to carry some evidential (or epistemic) shades of meaning. It is important to note that when used as a false perfect and/or perfect of certainty, the NAA LA form does not refer to a future time sphere. It makes reference to events which are presented as anterior to the speaker’s now, either in an imaginary (false perfect) or real world (perfect of certainty; cf. section 1.2.3.4):

- (5.27) a.    *Ŋiŋ*   *kewo*   *buka*            *niiji*,   *a*       **be**    **naa**   **faa**   **la**  
           this   man   does.not    breath   he       NVP   NAA   die    LA  
           ‘This man is not breathing, he is already dead / he must have been dead’
- b.    *Moo-wo-moo*   *te*                    *suwo*   *kono*;  
       anyone        NEG.NVP    home   in  
       ‘There is no one at home;  
           *itolu*   *bee*   **be**    **naa**   **taa**   **la**    *marisewo*    *to*  
           they   all    NVP   NAA   go    LA    market        *to*  
           they have already gone to the market / they must have gone to the  
           market’

Additionally, in relatively numerous cases, the construction may convey venitive and intentional values. In the former use, the NAA LA gram states that the subject will literally come to perform an activity (5.28.a) while, in the latter, it indicates that a person has the intention of doing something (5.28.b). In these two uses, the perfectal or anterior semantic component is typically missing.

- (5.28) a.    *M*       **be**    **naa**   *a*       *ke*    **la.**    *M*       *be*    *naa*   *la!*  
           I       NVP   NAA   it       do    LA    I       NVP   come   to  
           ‘I will come to do it. I will come!’
- b.    *M*       *be*    *suwo*   *kono.*    *M*       **be**    **naa**   *bukoo*   **safe**   **la**    *jaŋ*  
           I       NVP   home   in    I       NVP   NAA   book   read   LA   here  
           ‘I am at home. I am going to read the book here’

It should be noted in all the instances where the NAA LA gram is used as a type of a future or where it is employed as a present perfect, the aspectual nuance tends to be perfective. Probably, the only cases where the NAA LA form is not aspectually perfective correspond to the examples in which the locution expresses intention, such as in (5.28.b), above.

Besides its frequent use in a non-past time frame, the NAA LA gram may also be located in a past temporal sphere. In such cases, the construction conveys several shades of meaning that are closely related to the values observed in a non-past context. First, the NAA LA form expresses the idea of a future perfect in the past. Namely, it introduces events that were going to have been accomplished before other prospective (from a past perspective) activities would have occurred:

- (5.29) A ko nuŋ ko a **be naa** n **kumpabo la**  
 he said then that he NVP NAA me visit LA  
 ‘He said that he would have visited me  
 janniŋ a be taa la Birikama  
 before he NVP go to Brikama  
 before he would go to Brikama’

The gram may likewise convey the idea of certainty and unavoidability of past prospective events. It expresses situations that were going to happen posteriorly and this prospective occurrence was viewed as certain and/or inevitable. For instance, the situation in the real, and especially the present cognitive world, shows that a given prospective event has indeed occurred:

- (5.30) Ate le **be naa** a **jamfaa la**  
 he FOC NVP NAA him betray LA  
 ‘He was (inevitably) going to betray him (and, indeed, he did it)’

Furthermore, the NAA LA construction may indicate the immanency of a given prospective event when viewed from a past perspective:

- (5.31) Saayiŋ ate le **be naa** a **faa la** nuŋ  
 now he FOC NVP NAA him kill LA then  
 ‘He was just about to kill him’

The materialisation of a prospective activity may still be intensified and the activity portrayed as if it had almost been accomplished (an ‘almost’-pluperfect):

- (5.32) a. A kuuranta, fo a **be naa faa la**  
 he was.sick until he NVP NAA die LA  
 ‘He was so sick that he was almost dead (had almost died)’  
 b. Baabaliolu dunta kuluŋo kono fo  
 waves entered boat in so.that  
 ‘The waves entered into the boat so that  
 kuluŋo **be naa faa la** jiyo la  
 boat NVP NAA be.full LA water with  
 the boat was almost filled (or full) of water’

- c. Kabiriŋ nte **be naa siinoo la** n terimaa naata  
 when I NVP NAA sleep LA my friend came  
 ‘When I was almost sleeping, my friend came’

The NAA LA form can express past venitive and intentional senses. In this function, it conveys the idea that the subject was on his or her way to execute a given activity (5.33.a) or that he or she was aiming at doing something (5.33.b), respectively.

- (5.33) a. A be minto kunuŋ talaŋ seyi?  
 he NVP where yesterday hour eight  
 ‘Where was he yesterday at eight?’  
 A **be naa** m **kumpabo la**  
 he NVP NAA me visit LA  
 He was coming to visit me’
- b. N lafita ka ñiŋ motoo saŋ kunuŋ.  
 I wanted to this car buy yesterday  
 ‘I wanted to buy this car yesterday’  
 Ŋa n kali. M **be naa** a **saŋ na**  
 I REFL swear I NVP NAA it buy LA  
 I swear! I was going to buy it’

Lastly, the NAA LA gram can be employed in conditional apodoses very sporadically. If located in a present time frame, it expresses various nuances of the future specified previously. If, however, it appears with a past temporal reference, it tends to express the sense of unreal counterfactuality and, although less so, real counterfactuality, corresponding to past and present conditionals of Indo-European languages. One should note that this usage is extremely rare and in my database no apodotic example of the NAA LA form has been produced spontaneously. On the contrary, all of them have explicitly been solicited and, thus, constructed by the informants upon request.

- (5.34) Niŋ a naata kunuŋ, m **be naa** a **ke la** nuŋ  
 If he came yesterday I NVP NAA it do LA then  
 ‘If he had come yesterday, I would have done it’

## 5.2.2 Dynamic map

As demonstrated in the previous section, the semantic potential of the NAA LA locution consists of various senses. These values can nevertheless be grouped into three main classes. First, the gram may be used as a future perfect, offering senses where the idea of resultativity and/or anteriority is available: it expresses future events that are visualised as almost accomplished (‘almost’-perfect); events that are portrayed as having already occurred without, however, having been materialised in the real world (false perfect); and events that must have certainly occurred in light of the present state of affairs (perfect of certainty).

Second, the formation can introduce non-perfectal future activities. It indicates that a future event is near or immediate (proximate future and imminent future) and that it is certain or inevitable (future of certainty and future of inevitability). In this latter case (future of certainty and inevitability), the NAA LA gram expresses predictions that are regarded as assured and infallible given the common knowledge or a present situation. In this group of uses (as well as in the previous class), perfective readings predominate. Third, the NAA LA form conveys a venitive sense and intentional shades of meaning. Here, once more, perfectal or anterior nuances are unavailable and the future reference is significantly less evident – the formation depicts a presently ongoing action of coming or a current desire to do something. Additionally, a highly similar group of values has been identified with a past temporal reference. The formation expresses the ideas of prospective anteriority (future perfect in the past and ‘almost’-pluperfect), certainty and unavoidability, as well as imminence of posterior events. It also introduces a past venitive prospective value as well as intentional undertones. Lastly, the gram sporadically appears in conditional apodoses where it can offer real factual, real counterfactual and, especially, unreal counterfactual senses.

Among all these senses, the function of an almost-perfect, on the one hand, and the use as a proximate, immediate, certain and inevitable future (or future in the past), on the other, are the most prototypical. The intentional value can also be regarded as prototypical. Even more common is the perfective nuance which is consistently found as a component of various other values.

Given the fact that the meaning of the NAA LA gram is principally related to four major domains, such as anteriority (perfect), futurity, perfectivity (perfective aspect) and movement-intention, it is likely that this formation has been travelling along a path (or paths) on which such senses are available. As will be demonstrated by the following discussion, in order to connect all the components of the semantic potential offered by the NAA LA expression and explain the total meaning of this gram as a coherent phenomenon, two typological templates seem to be necessary. These templates correspond to two grammaticalisation clines: the future perfect path and the venitive future path. The former accounts for the idea of anteriority, perfectivity and futurity, whereas the latter provides an explanation for the values of movement-intention and futurity.

#### 5.2.2.1 Future perfect path

A future perfect path can be employed as a template for networking the following senses offered by the NAA LA locution: a) perfectal values, such as a future perfect, an ‘almost’-perfect, a false perfect and a present perfect of certainty; b) non-perfectal future nuances, such as a proximate and imminent future, and a future of certainty and inevitability; and c) the value of a perfective aspect. As has been explained in sections 1.2.3.2 and 1.2.3.4, resultative formations located in a future time frame (resultative futures) offer three closely related types of meaning extensions. First, there is a clear path leading from future resultativity to the value of a simple future tense, through the stage of a future perfect and perfective future (similarly to the anterior cline located in a present time frame; cf. chapter 3). Second, scholars identify a trajectory relating future resultatives and, especially, future

perfects to the senses of future certainty and inevitability, as well as to proximate and imminent futures. Third, future perfects also acquire values of an ‘almost’-perfect and false perfect and the sense of a present perfect of (evidential) certainty. This complex evolutionary scenario, which determines the grammatical life of future resultative constructions, is referred to as the ‘future perfect path’ (see section 1.2.3.4).

According to the evidence presented in section 5.2.1.2, the NAA LA form covers all the stages available on the future perfect path with the exception of a future resultative sense. The prototypicality zone is located in the stages of a perfective future, proximate/imminent/certain/inevitable future and ‘almost’-perfect (see Figure 5.3, below). The values of a future perfect in the past, proximate and imminent future in the past, ‘almost’-pluperfect, and future of certainty and inevitability in the past can all be mapped by a template analogous to that used above (viz. the future perfect cline) but located within a past temporal frame.

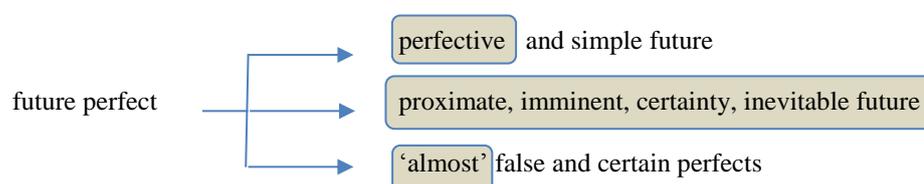


Figure 5.3: The map of the NAA LA gram – future-perfect-path senses

The three – rather poorly represented – values available in conditional apodoses correspond to further extensions of the future perfect cline. The real factual sense mirrors the values acquired due to a “regular” future perfect cline in a present-future time frame. The only difference is that the context is overtly modal and the performance of a future action (accompanied by any of the possible values described above) depends on a previous accomplishment of the activity expressed in the protasis. The real counterfactual apodotic sense can have two confluent origins: it can correspond to a simple future use which is, however, transposed to the past time frame. As explained, this corresponds to a typological common source of present conditionals that are expressions of real counterfactuality in apodoses. However, it can also correspond to the loss of anterior nuances of the future perfect in the past.<sup>238</sup> Lastly, the unreal counterfactual sense stems from a future perfect value of the NAA LA gram additionally located in a past time frame. As already mentioned in section 5.1.2, such constructions – i.e. future perfects in the past – commonly evolve into past conditionals. Inversely, this means that in various languages, past conditionals not only express several modal meanings (e.g. unreal counterfactuality) but also function as future perfects in the past (this corresponds to the sense of their historical inputs) and indicate the idea of certainty or unavoidability, near or imminent completion of posterior events, observed from a past perspective. One should note that all the modal senses offered by the NAA LA gram in conditional apodoses can at the same time be viewed as examples of a modal contamination imposed by this explicitly modal environment.

<sup>238</sup> This would be analogous to the process whereby future perfects may lose their value of anteriority in a non-past time frame.

The structure of the NAA LA gram and its relation to the LA future and to other verbal formations built by means of the entity *naa* corroborates the mapping proposed above. It additionally enables us to determine the exact lexical source of the future cline along which the NAA LA form has travelled.

The most distinctive element in the NAA LA formation – which distinguishes this gram from the other future expression, viz. the LA locution – is *naa*. It is important to note that in Basse Mandinka the entity *naa* regularly expresses the idea of completion, anteriority and especially perfectivity of an event and activity. In fact, it is possible to argue that in Basse Mandinka one of the most important functions of the morpheme *naa* is the expression of a dynamic perfect and perfective aspect. The most common construction that employs the maker *naa* is the NAATA form. As has been explained in section 3.3, the NAATA form mainly expresses the senses of a perfect (present and past) and a perfective past. Within the dynamic framework, the gram has been mapped as a manifestation of the anterior cline. Less common – albeit by no means rare or isolated – are uses of the element *naa* with other verbal forms, for instance with the negative perfect and perfective past MAḌ (5.35.a), the modal future SI (5.36.a), the modal YE<sub>2</sub> form (5.37.a) and the B-Imperative (5.38.a). In all such uses, the morpheme *naa* emphasises the fact that a given action is completed (resultative perfect sense), anterior (sense of the present perfect of current relevance) and especially perfective (sense of a perfective aspect). This dynamic perfectal and perfective value of the element *naa* may be perceived if one compares a given “simple tense” (i.e. a verbal construction without *naa*) with its counterpart accompanied by *naa*. This interaction consists of the following: while a simple tense can express both perfectal/perfective senses and non-perfective (sometimes, even durative and progressive) senses (5.35.b, 5.36.b, 5.37.b and 5.38.b), the varieties extended by the entity *naa* are typically limited to the values of a perfect and/or perfective aspect (5.35.a, 5.36.a, 5.37.a and 5.38.a; see section 1.1.3.3). In all of the latter examples, the morpheme *naa* emphasises that a given action has been completed (the sense of a dynamic perfect) and/or that it was punctiliar and bounded (the sense of a perfective aspect):

- (5.35) a.    A    **maḅ naa ke**                   moo tilindiḅ       ti  
               he   MAḌ NAA become       person righteous   EXIS  
               ‘He did not become a righteous man’<sup>239</sup>
- b.    A    **maḅ ---- ke**                   moo tilindiḅ       ti  
               he   MAḌ           become       person righteous   EXIS  
               ‘He was not a righteous man / He did not become a righteous man’

<sup>239</sup> The English renderings are not too helpful since English lacks a genuine perfective aspect. The interaction between the perfective *naa* and an unmarked simple gram can better be perceived if one uses Polish translations. Polish is a language with an opposition of the perfective *versus* the imperfective that affects almost all the constructions and levels of the verbal system. In examples 5.35-38, the forms with *naa* are invariably rendered by the corresponding perfective constructions in Polish (*nie został* (5.35.a), *zrobi* (5.36.a), *usiądz* (5.37.a) and *zrób* (5.38.a)), while the simple forms without *naa* can be translated by means of both the perfective and imperfective expressions (*nie został/nie był* (5.35.b), *zrobi/będzie robił* (5.36.b), *usiądz/siadaj* (5.37.b) and *zrób/rób* (5.38.b)).

- (5.36) a. A    **si**    **naa**    a    **ke**  
 he    SI    NAA    it    do  
 ‘He will have done it / He will do it (completely)’  
 b. A    **si**    ----    a    **ke**  
 he    SI                    it    do  
 ‘He will do it’
- (5.37) a. Ite    **ye**    **naa**    **sii**    siiraŋo kaŋ!  
 you    YE<sub>2</sub>    NAA    sit    chair    on  
 ‘Sit down on the chair!’  
 b. Ite    **ye**    ----    **sii**    siiraŋo kaŋ!  
 you    YE<sub>2</sub>                    sit    chair    on  
 ‘Sit down on the chair!’
- (5.38) a. **Naa**    a    **ke!**  
 NAA    it    do!  
 ‘Do it!’  
 b. ----    A    **ke!**  
           it    do!  
 ‘Do it!’

From a typological perspective, future perfect formations usually employ morphosyntactic features which are used in order to derive a future tense and a perfect or perfective, at the same time. This means that in the Mandinka language, a future perfect category would be likely to combine formal characteristics of a future and those that are displayed by a prototypical perfect or perfective. On the one hand, as mentioned previously, the LA form most frequently functions as a future. In fact, it is the most prototypical expression of futurity in Basse Mandinka.<sup>240</sup> On the other hand, the entity *naa* is an exemplary vehicle of the sense of a perfect or perfectivity. As indicated above, particularly frequent, is its use in the NAATA form, although it may also be found in other constructions such as the MAI, SI, YE<sub>2</sub> and B-Imperative forms. Consequently, a formal merger between the LA construction and the element *naa* could be regarded as one of the most plausible sources of the future perfect sense in Basse Mandinka. From a formal perspective, the NAA LA gram is exactly a morphosyntactically “mingled” construction or an amalgamation of the LA (future) and the *naa* marker (perfect and perfective aspect). By doing so, its shape is fully compatible with the posited map. The underlying structure of the phrase *a be naa a ke la* would reflect the LA future of a lexical verb (in this case, of the predicate *a ke* ‘do something’; i.e. *a be a ke la* ‘he will do it’) and the perfect-perfective marker *naa*.

I have already mentioned that the marker *naa* is the only morpheme that differentiates the NAA LA gram from the LA “future”. This morphosyntactic dissimilarity has semantic implications fully comparable to the above-mentioned contrast that exists between the simple tenses and their *naa* varieties. In fact, in Basse Mandinka there is a difference in meaning

<sup>240</sup> The other common expression of futurity, viz. the SI form, is more modally marked.

between two context-free sentences<sup>241</sup> of which one includes the NAA LA form and the other uses the “simple future” in LA (cf. 5.39.a-b, below). The two Basse Mandinka grams offer two different connotations. Sentence 5.39.a is a simple statement about a future fact and corresponds to a future sense that may be both perfective and imperfective. However, sentence 5.39.b portrays the future event as certain and inevitable, or as perfective. Thus, the main contrast between the two Basse Mandinka formations involves the idea of certainty-inevitability and perfectivity. To put it simply, since *naa* is a highly grammaticalised marker of perfect or perfective aspect in Basse Mandinka and can be employed in various verbal constructions, it is also used in the LA future, deriving its perfectal or perfective counterparts and motivating other senses available along the future perfect path.<sup>242</sup>

- (5.39) a.    M    **be**            a    **ke**    **la**  
           I    NVP            it    do    LA  
           ‘I will do it / I will be doing it’
- b.    M    **be**            **naa**    a    **ke**    **la**  
           I    NVR            NAA    it    do    LA  
           ‘I will certainly do it / I will do it’

It is also important to observe that verbs with the meaning ‘come’ (just like the root *naa*) constitute one of the main sources of perfects (Bybee, Perkins & Pagliuca 1994:63-64, 67). This means that from a typological perspective, a movement verb similar to the English predicate ‘come’ are commonly employed to derive grams that evolve along a resultative path (especially along the anterior cline, which delivers perfects, perfectives and past tenses). This development is observed in the Basse Mandinka language where, as explained repeatedly, the verb *naa* ‘come’ is used to form a highly common perfect and perfective gram, viz. the NAATA construction (cf. section 3.3).

In light of all the evidence provided in this section, it is plausible that a portion of the semantic potential of the NAA LA form could be mapped by means of the future perfect cline. To recapitulate, the reasons that suggest this type of mapping are the following:

a) The NAA LA gram provides values that are typically available on the future perfect cline, including those that cannot be explained by making use of “simple” future paths such the venitive cline which will be dealt with in the next section (see the sense of a future perfect, perfective (future), and future of certainty and inevitability);

b) By locating its prototypicality in the area of future anteriority (future perfect) and, especially, perfectivity (perfective aspect),<sup>243</sup> the NAA LA formation interacts with a “simple future” LA. This corresponds to a typologically common behaviour whereby future perfect

<sup>241</sup> Such context-free values refer to “first-come-to-mind manifestations” of meaning and are usually understood as the most prototypical and frequent senses (Gilquin 2006:180). Of course, all uses are contextual (cf. section 1.2.2).

<sup>242</sup> Observe that the very source of the NAA LA form would thus be external, having arisen due to paradigmatic and analogical pressure. In this way, the first stage of the NAA LA form would directly correspond to a future perfect without the phase of a resultative future. This could, in turn, explain the absence of the sense of future resultativity in the semantic potential of the NAA LA construction.

<sup>243</sup> The other prototypical sense is the idea of future certainty and inevitability, which is one of the meaning extensions exemplary of future perfects.

morphology indicates perfectal and perfective future actions (in addition to the nuance of certainty) while a simple future form fails to do so;

c) Although infrequently, the NAA LA gram provides uses where the expressed event fails to refer to a future time frame (cf. false perfect and perfect of certainty) – these values are typical of the future perfect path and usually do not arise along future paths such as the modal or motion-based future clines;

d) The NAA LA formation uses a typologically regular morphosyntactic device in deriving future perfects and perfectives: a composition of a future (the LA gram) and perfectal-perfective morphology (*naa*);

e) From a typological perspective, verbs of coming (such as *naa*) are commonly used to derive perfectal and/or perfective grams that travel along the anterior path;

f) The entity *naa* is used as a common perfectal-perfective marker in Basse Mandinka (it is especially common in the NAATA form, but also appears in other constructions).

To conclude, the meaning of the NAA LA construction, its morphosyntactic properties and the interaction (both formal and semantic) with other grams in the verbal system jointly suggest that the networking of, at least, certain senses offered by this locution should be achieved by using the future perfect cline.<sup>244</sup>

#### 5.2.2.2 Venitive path

Although the mapping based upon the future perfect path and its past variety can account for a broad range of senses displayed by the NAA LA construction, this evolutionary scenario fails to provide an explanation for venitive and intentional uses of the form. In other words, neither venitive nor intentional values can be related to a stage on the future perfect cline and viewed as a meaning extension from the original future perfect (or future perfect in the past; or from a resultative future sense in case the development was stimulated internally). Consequently, these two values must be explained by making use of a different chaining template and, thus, a different path.

As explained in section 1.2.3.3 and 1.2.3.4, allative (including venitive) and intentional nuances typically arise due to one of the most common trajectory leading to the creation of future tenses – the so-called desire or movement path. Given its relevance for the NAA LA gram, the movement sub-cline of this evolutionary trajectory will be recalled.<sup>245</sup> The movement path specifies the grammatical life of future tenses that develop from verbs of movement, especially from predicates with the meaning ‘go’ and ‘come’. Accordingly, the original expression includes an allative semantic component (either ablative in the ‘go’-type or venitive in the ‘come’-type) from which a sense of aiming at and/or reaching a goal emerges. Subsequently, these values prompt an intentional nuance. Later, the formation

<sup>244</sup> Since the LA formation has been mapped by means of a future path, which has emerged from a predestination source, and since the NAA LA form is an elaboration of the LA gram being merely expanded by the perfectal-perfective morpheme *naa*, the NAA LA formation is also related to the predestination cline.

<sup>245</sup> The movement and desire clines are analogous differing only that they are derived from two distinct sources, i.e. motion verbs (movement cline) or expression implying desire (desire cline). All other stages and senses acquired in them are similar. It should be recalled that these paths are also modal clines, as they traverse various domains of modality, as well. As explained in section 1.2.3.3 and 1.2.3.4, in general terms, various modal and future paths are conceptually and diachronically related.

acquires the sense of prediction: at this stage, the grammatical subject may be non-human. If human grammatical subjects are involved, they lack control over a situation. During a posterior phase, an intentional future may develop into a general (simple) future tense. Even later, the gram can acquire modal senses, being, for instance, generalised in conditional apodoses (as a conditional) and protases, and in subordinate clauses (as a subjective). It has also been mentioned that future expressions derived from venitive predicates display certain additional properties. Namely, after the stage of an intentional meaning, ‘come’-futures typically develop the sense of an imminent future, expressing events that are just about to occur or that are on the verge of being occurring. The imminent (and, later on, proximate) future is understood as a stage between an allative (in this case, venitive) and intentional future, on the one hand, and a general (simple) future tense, on the other. In contrast with the meaning of prediction, this value emphasises the imminence of an activity and not the expectation.

The components of the semantic potential of the NAA LA form enable us to match this formation with all the stages of the venitive path: venitive proper, intentional, proximate and imminent future, future of prediction and simple future (see Figure 5.4, below). Additionally, just like the future perfect cline could be located in a past time frame, accounting for various past nuances of the NAA LA gram, the venitive trajectory and, hence, chaining based upon it, may be placed in a past time frame. In this manner, the venitive cline can provide an explanation and linking of the following values offered by the NAA LA locution: past allative (*he was coming to do something*), past intentional (*he was going to do something*), imminent future in the past (*he was just going to do something*), and past prediction (*something was going to occur*). Thus, the venitive cline in a past time frame accounts for the past venitive and past intentional values offered by the NAA LA form, which cannot otherwise be explained by the mapping based upon the future perfect path. The venitive cline located in a past temporal sphere may also justify certain modal senses (especially real and unreal counterfactuality) since, at later stages of this development, various epistemic values of probability and likelihood emerge. These epistemic senses may lead to similar modal outcomes (i.e. present and past conditionals) as was the case with the future perfect cline.

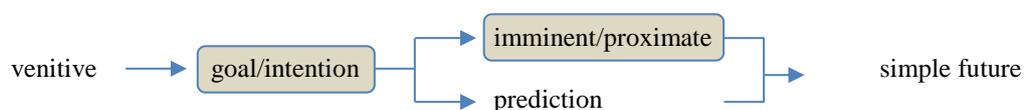


Figure 5.4: The map of the NAA LA gram – venitive-path senses

Formal characteristics of the NAA LA gram additionally confirm the proposed mapping. To be exact, as expected, the NAA LA locution is composed of the venitive verb *naa* ‘come’ – the most important and necessary component of grams travelling along the venitive path. In fact even nowadays, the structure of this locution may be related to an explicit venitive-intentional periphrasis, built on the verb *naa* ‘to come’, exemplified in (5.40.a-b). As will be argued subsequently, this expression may be regarded as the ancestor of the venitive type of the NAA LA gram and the source of its path. From a purely formal perspective, the venitive-

intentional periphrasis is almost identical to the NAA LA construction: it includes the predicator *be*, the verb *naa* ‘come’ and a lexical verb introduced by the infinitive marker *la*. The difference consists of the fact that the venitive-intentional expression frequently contains a second *la* element intervening immediately after the predicate *naa*. The sense of this expression invariably corresponds to a prospective venitive or intentional category: *I will come in order to do something* or *I was going to come in order to do something*.

- (5.40) a.     M     **be**    **naa**   **la**     **siinoo la**  
           I     NVP   come   LA     sleep   to  
           ‘I will come in order to sleep’
- b.     M     **be**    **naa**   **la**     bukoo **safee**   **la**  
           I     NVP   come   LA     book   read   to  
           ‘I will come in order to read a book’

The analysis of the morphosyntactic properties of the venitive-intentional periphrasis suggests that this analytical locution builds, in fact, on the LA future of the lexical verb *naa* ‘come’, which subsequently introduces another lexical verb (see examples 5.40.a-b). In dynamic-grammaticalisation terminology, the semantic potential of the LA gram has been networked as a manifestation of a future predestination path located in a non-past and past time frame (cf. section 5.1).<sup>246</sup> Thus, the venitive-intentional periphrasis is a venitive expression built around the predestination future cline – it is a “future” tense of the verb *naa*, which introduces another lexical verb. Due to the semantic properties of the LA form itself, the venitive-intentional periphrasis can be located both in a non-past and past time frame. This harmonises with the semantic map of the NAA LA expression, organised along the venitive path. In both cases (i.e. in the venitive-intentional and the NAA LA constructions), the venitive component constitutes the centre of the network from which, first, an intentional value and, later, other senses emerged.

It should also be noted that the infinitive marker *la* of the LA gram and, thus, the first element *la* in the venitive-intentional sequence in 5.40.a-b may be omitted. This stems from the fact that the infinitive marker *la* is optional in the LA future in the case of the verb *naa* ‘come’. As a result, the LA future of the predicate *naa* can be either *m be naa la* (with *la*) or *m be naa* (without it) ‘I will come’. When this “deletion” takes place in the venitive-intentional periphrasis, the entire locution becomes formally indistinguishable from the NAA LA construction.

To conclude, both formal and semantic correspondence between the NAA LA gram and the venitive-intentional periphrasis suggests the following: it is likely that the NAA LA expression originated from the said venitive-intentional periphrasis. Thus, the venitive sense constitutes the conceptual centre of the map from which other senses have expanded. Due to the grammaticalisation process and an optional deletion of the marker *la* (in cases where *la* governs the verb *naa*), the original sequence *a be naa la a ke la* was “simplified” to *a be naa a ke la*. This means that the construction with one element *la* is more grammaticalised than

<sup>246</sup> This means that the venitive-path NAA LA gram is related to the predestination-future cline travelled by the LA construction. An analogical connection has previously been posited for the future-perfect-path NAA LA.

the venitive-intentional expression with two such elements, since the reduction of form (either phonological or morphological) typically accompanies an increase in grammaticalisation. Nevertheless, if the speaker wishes to emphasise and explicitly express venitive and intentional senses, he or she may always use the overly venitive-intentional periphrasis (i.e. the locution with two *la* markers).<sup>247</sup>

### 5.2.2.3 Two conflating maps

The previous discussion suggests that all the components of the semantic potential of the Basse Mandinka NAA LA construction can be networked by means of two evolutionary scenarios: the future perfect path and the venitive path. Both the clines and the mappings based on them may be located in a non-past and past time frame, thus accounting for non-past and past shades of meaning, respectively. This dynamic definition bestows us the possibility to grasp the meaning of the construction in its entirety and represent it as a consistent and logical category: a summation of almost the entire lengths of the two paths, with the prototypicality peaks in the area of future certainty-inevitability, ‘almost’-perfect, future perfectivity (future perfect cline), intentionality-goal (venitive cline) and imminent-proximate future (both clines).

The fact that the total meaning of the gram is organised and arose along different clines is not odd and has already been observed in the majority of grams. It is in fact common that a formation evolving along a given path imposed by the input expression, also follows other clines that depart from this original “mother” or “matrix” trajectory. What is special about the NAA LA gram is that some identical portions of the semantic potential have arisen by meaning extensions prompted by two evolutionary scenarios and that the form may have derived from two conceptual and historical sources.<sup>248</sup>

This means that the NAA LA locution can be classified as a complex gram whose meaning is organised along two originally unconnected templates, which, however, due to a partial semantic overlapping and a morphological convergence yielded a single category. To be exact, the proposed mapping shows that the NAA LA form has two conceptual and, hence, diachronic sources (or original senses) from which other values have emerged by following two distinct paths. One input is the semantic domain of a future perfect, while the other is the venitive sense. On the one hand, the NAA LA gram originated from a future perfect locution where the entity *naa* – in accordance with its use in the NAATA form and in other verbal formations – is reinterpreted as a perfectal-perfective marker. As a prototypical future perfect construction (whose exemplary sense is that of future anteriority), the NAA LA gram underwent a development along the future perfect cline: it acquired the senses of a false perfect, ‘almost’-perfect, perfect of certainty, future (prediction) of inevitability and certainty, proximate and imminent future. On the other, the NAA LA gram derives from a venitive-

<sup>247</sup> This reconstruction of the formal and semantic origin of the NAA LA construction coincides with an analogous proposal formulated for a cognate form *béna* in Bambara whereby this future or prospective expression derives from a venitive periphrasis built on the verb *ná* ‘come’ (cf. Bird, Hutchison & Kanté 1977; for a more detailed comparative analysis between the Basse Mandinka NAA LA gram and similar constructions in Manding, see section 5.2.2.3 below).

<sup>248</sup> Compare a similar phenomenon in the modal map of the SI gram hypothesised in section 4.4.

intentional periphrasis, such as *A be naa la a ke la* ‘He will come in order to do it’. As a prototypical venitive construction (whose exemplary sense is that of the motion of coming), it experienced the evolution along the venitive path, incorporating the following values: goal/intention, prediction, proximate and imminent future. It is important to note that although the NAA LA form has acquired various meaning extensions typical of the future perfect and venitive paths – thus advancing on the two trajectories – it has not lost its original senses (with the exception of the resultative future value, which, as explained, may never have existed). It simply accumulated new values, expanding its semantic potential. No important reduction of the semantic space may be observed yet.

Although the two clines and maps that are organised along them are distinct and lead to different semantic domains, they also overlap generating similar senses. Namely, the values of a proximate and imminent future are shared by the two templates and, thus, may have arisen by following each of the two clines. The sense of a general futurity (simple future) is also available on the two paths. Additionally, the nuance of prediction emerges along the two clines, even though the future perfect trajectory typically represents the idea of prediction as being accompanied by the undertones of certainty and inevitability. Accordingly, the two maps are qualitatively similar: they principally draw from the domains of futurity and intersect at determined sections.

One may postulate that in Basse Mandinka, the two maps have merged. Despite the two mappings that originate from distinct cognitive inputs, the NAA LA construction is viewed by native speakers as a unified and single form (although with a rather extensive polysemous surface) and not as two independent forms. This conceptual “fusion” of the two mappings – or in other words, the confusion and merger between the two sources and networks – could be favoured by two facts. First as far as the semantics is concerned, both sources lead to the acquisition of the sense of an imminent/proximate future and to the value of prediction. Thus, as already explained, the semantic potentials of the constructions evolving along the venitive and the future perfect path semantically intersect. Second, with respect to the morphology, the identification of the future perfect source with a venitive construction and its path could be enhanced by the fact that the venitive expression can delete the second element *la*, becoming formally identical with the locution built on the perfectal-perfective marker *naa*. As a result, due to a semantic and formal proximity, the two periphrases merged into a single and highly polysemous form. The NAA LA form could hence be viewed as an example of morphological convergence, whereby locutions that derive from different inputs and whose maps involve distinct clines become superficially identical.<sup>249</sup>

The confusion of the two original locutions and the two maps may also have stemmed from the fact that the elements *naa* used in the two input expressions (i.e. both in the perfectal-perfective expression and the venitive locution) corresponds to the identical verb *naa* ‘come’.

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<sup>249</sup> As mentioned previously, this process is by no means infrequent. For instance, it has occurred in Slavic and Semitic languages. One of the most evident examples is provided by the Biblical Hebrew *yiqtol* form which derived from three different Proto-Semitic inputs (and thus followed three different paths): the resultative *\*yáqtul* (resultative path), the reduplicative progressive *\*yaqattal* (imperfective path) and the modal *\*yaqtúl* (modal path; for details, see Andrason 2010a, 2012f, 2013a).

Even if hypothetically the venitive periphrasis is more original, the fact that the Basse Mandinka language has developed a perfectal-perfective *naa* series (in which the morpheme *naa* has been reanalysed as a perfectal-perfective marker) may have altered the regular running of the venitive path, directing it towards a channel typical of a future-perfect cline. In this manner, although the direct and internal conceptual source of the NAA LA form corresponded to a venitive expression, the *naa* perfectal-perfective series could be viewed as another indirect and external input. In this way, the idiosyncrasy of the language – the environment in which the NAA LA gram has been evolving – significantly affected the trajectory of this formation (on this issue, related to complexity, non-linearity sensitivity to initial conditions, see section 7.3.1).

In order to propose a wave model, the two maps of the NAA LA formation developed previously must be simplified, unified and represented in a more linear manner. Only by resorting to this procedure, which constitutes a theoretical approximation, can the waves of the LA and NAA LA grams be compared. In this representation, the general stages of futurity (or a broad future path) will be used as values of the horizontal *x*-axis. The first stage includes the sense of venitive motion (evolutionarily akin to agentive senses of the modal and the future clines). The second stage refers to the senses of an intentional or a modal future. The third stage contains the general future use, such as the imminent, the proximate, the certain and inevitable futures as well as the perfective and simple future. The fourth stage corresponds to highly advanced uses of futures as syntactical modality (subjunctives and conditionals). The problem arises when attempting to locate the senses of a future perfect and related values, such as an ‘almost’, false and certain perfect. Given the four-stage structure of the *x*-axis, the most logical option is to situate these senses in the second stage, i.e. after the first stage where the modality and motion are profiled and before the third stage where the simple (non-perfectal) values are typical. The correlation of the future perfect use with the second stage of futurity can also be supported by the fact that perfectal senses are sometimes interpreted modally, i.e. as evidentials (cf. perfect of certainty) or as “counterfactual” perfect (cf. ‘almost’ and false perfects).

If the four-stage granularity is adopted, the wave of the NAA LA gram is raised in the second and third stages (I represent the third stage as prototypical while I am cognisant that the NAA LA gram is usually limited to the perfective future). The values of the first stage are semi-prototypical whereas those of the fourth stage are non-prototypical. The semi-prototypicality of the values of the first stage stems less from the NAA LA form itself, but rather reflects the fact that speakers can always use a literal venitive expression *be naa la* + base + *la*.

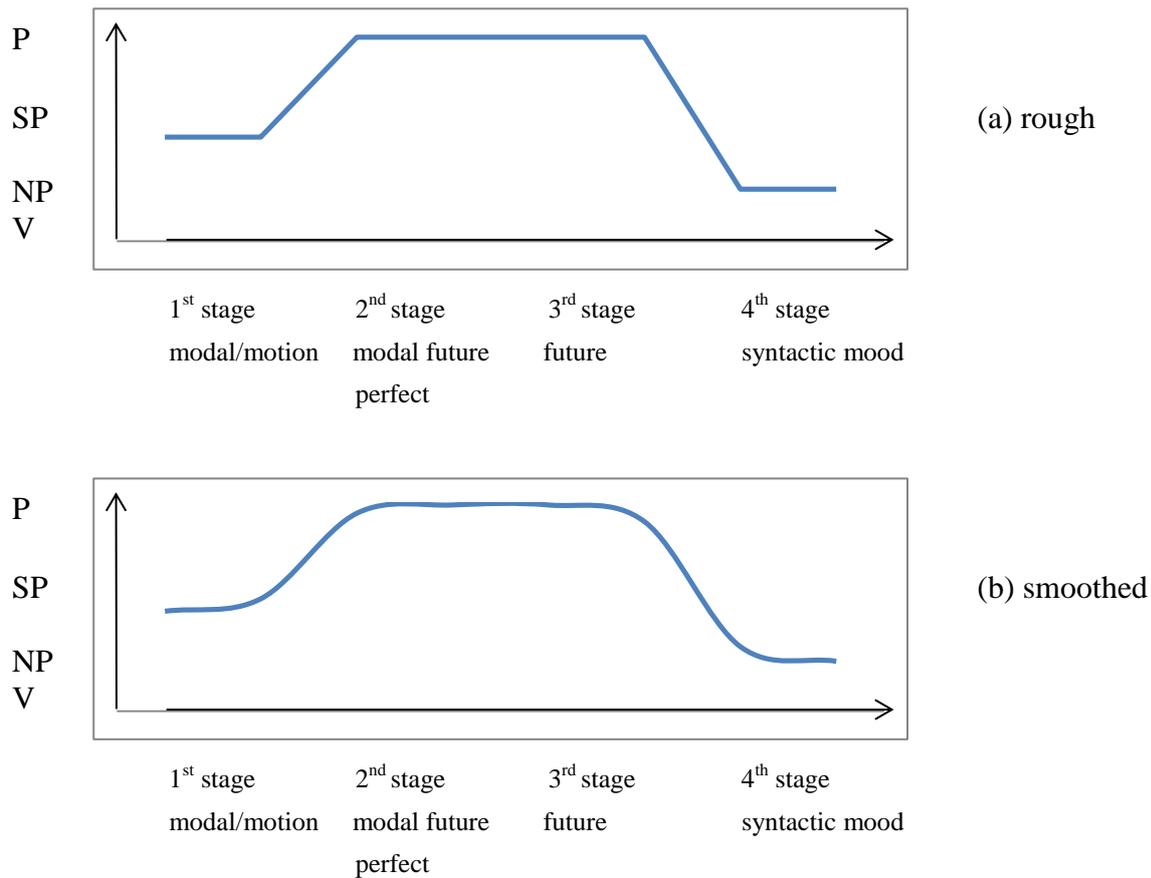


Figure 5.5: The semantic network of the NAA LA gram – wave model

I have mentioned that, besides being derived by means of the entity *naa* ‘come’, the NAA LA gram is a formation built upon the LA future. It is either a perfect-perfective variety of the LA gram (i.e. the LA gram in the *naa* block of forms) or a LA form of the *naa* verb (i.e. the verb *naa* in the LA future). This means that cognitively (conceptually and diachronically), the NAA LA formation is, at least slightly, posterior to the LA locution. This fact will be important for the comparison of the waves traced by the LA and NAA LA grams on the future stream (cf. section 5.3).

The understanding of cognate forms in related languages, especially in Bambara, coincides with the mapping developed above. To begin with, traditional explanations of two future forms built on the verb *naa* in Bambara, i.e. *béna/béna* and *ná*, will be reviewed. Samassekou (1981) proposes that the former formation is an inchoative future or indicative non-completed (“l’indicatif inaccompli”; see also Blecke 1988/2004:14). Koné (1984:14) defines the *béna/béna* form as a definite and properly temporal future. Similarly, according to Tera (1984), the *béna/béna* future should be understood as an unmarked or neutral future (“futur non marqué ou neutre”) or as a simple future which does not require any additional semantic specification or contextualisation. Blecke (1988/2004:39-40) emphasises that the *béna/béna* form denotes certain-to-occur future activities, while modal senses of probability and counterfactuality appear exclusively in the proximity of the lexeme *tùn* ‘then’. In a similar vein, Idiatov (2000:13-15) postulates that the *béna/béna* construction expresses the

value of certitude, especially if it refers to an immediate (i.e. proximate) future sphere. In such cases, the formation expresses actions or situations that will occur soon and inevitably. However, this author importantly notes that the *béna/béna* future may likewise convey the idea of intention. This intentional value derives from its venitive use (Bird, Hutchison & Kanté 1977). Rozhansky (2002) classifies the gram as an intentional future.<sup>250</sup>

As for the locution with the sole *ná* morpheme (i.e. a construction with no *bé/bé* auxiliary), Brauner (1977:385-388) defines it as a general, indefinite and extended future. According to Tera (1984:32), the form with *ná* expresses future events – either close or remote – which are viewed as inevitable or as results of certain conditions. Thus, the idea of futurity conveyed by the *ná* formation is certain and/or inevitable and inversely fails to include a modal undertone of uncertainty (cf. also Idiatov 2000:16; see also Dumestre 1999:13).

The semantic potential of the *béna/béna* form (as well as the variety with the sole item *ná*) consists of two – to an extent separated and in some regions disjunctive – sets of values. On the one hand, the formation is viewed as an expression of future certainty, especially if indicating proximate and immediate future events. On the other hand, it may also express intentional and venitive senses. These two ranges of values of the cognate forms in Bambara coincide with two sets of semantic potentials of the NAA LA gram in Basse Mandinka: one related to the idea of certainty and immediacy (and their extensions in accordance with the future perfect cline) and the one related to the idea of intention derived from the venitive sense (and their extensions along the venitive cline).<sup>251</sup> This fact provides additional support for the two-map networking of the semantic potential of the NAA LA form, as proposed in this section. However, as counter-evidence, it must be noted that Manding varieties do not provide direct cognate forms which would show a formal merger of a future form (cf. the Basse Mandinka LA) and a perfectal-perfective marker *naa* (such as in *naata*), triggering a future perfect meaning (see further below in this section).

Venitive periphrases built around the verb *nà* ‘come’ or its cognates are highly common in Manding. They are found in three morphosyntactic variants: 1) *yéna/béna* (or *bína*) + base (Finingakan, Baralakan, Folokakan, Gbelebankakan, Tudugukakan, Vandugukakan, Nowolokakan, Sienkokokan, Karanjankan, Siakakan, Koyagakan, Korokan, Sagakakan, Nigbikakan, Jula of Kong, Jula Véhiculaire,<sup>252</sup> Mæeka, Maninka of Bafing and Gangaran,<sup>253</sup> Kita Mandinka<sup>254</sup> and Bambara); 2) *na* + base (Finingakan, Korokakan, Wojenekakan, Bodugukakan, Siakakan, Sagakakan, Nigbikakan, Bolon, and Bambara mentioned above); 3) *y/bV* + stem (*yéa* in Tenegakan, *yaa* in Maukakan, *ya* in Worodugukan and Kanikakan; cf. also *yé/bé* in Niokolo Maninka; Tröbs 2009:214-215; see also Sangaré 1984:320, Keïta 1984:58, Creissels 1987/1988:21, Braconnier 1991, Dembelé 2006:50,

<sup>250</sup> One may also mention the position defended by Houis (1981:18, 47) who classifies the periphrasis with the verb *nà* ‘come’ as an “éventuel”, a form which is external to the system, in contrast to the “absolutive” and central future in *bé*.

<sup>251</sup> The proximate future sense also belongs here.

<sup>252</sup> See, for instance, *Ŋ béna séwéri ké* ‘I am going to write something’ (Sangaré 1984:320; cf. Braconnier 1991).

<sup>253</sup> *Fanta bana datɔxa domu a ye(na) miran nɔxɔlu ku* ‘If Fanta eats breakfast, she will wash the dishes’ (Dembelé 2006:50).

<sup>254</sup> See, for example, *mùsú bé nà yèlè* (Keïta 1984:58; cf. Creissels 2009).

Creissels 2009).<sup>255</sup> All such constructions usually function as affirmative futures (ibid.). Maninka of Niokolo also uses a periphrasis that is identical to the Basse Mandinka NAA LA gram (*náa* + base + *lá*). As in Basse, this construction functions as a near future (“future proche”): *Ð be náa sáatée lée lu lá kuuñáa folá saañiŋ* ‘I will now talk about the organisation of the villages’ (Creissels 2013b:75).

The formations in other Mande languages that are derived from a verb with the meaning ‘come’ such as *naa*, typically express two types of prospective values: nearest or proximate future and intention to conduct an action (for instance Soninke, Kagoro, Dzuun, Bobo in Babaev 2011:13). As in Manding, in many cases, such periphrases do not contain the non-verbal predicator: Bobo (*À nà dùgó tùgó* ‘He will sow millet’; Le Bris & Prost 1981:246), Dzuun (*Mùn nà à jón dēyn dēyn* ‘We will eat it little by little’; Solomiac 2007:263), Seenku (*N na dyo m̀* ‘I will drink water’; Prost 1971:53), Soninke (*A na goro xunbane* ‘He will grind tomorrow’; Urmanchieva & Plungian 2006 in Babaev 2001:13), and Vai (*Mɛnui naa salaŋ nama so a* ‘The people are about to build a new bridge’; Heydorn 1971:179). In various cases, the element *la* is absent (e.g. Bobo, Dzuun, Seenku or Soninke).

According to Tröbs (2009:216-217), type (1) *yéna/béna* is less grammaticalised than types (2) *na* and (3) *y/bV*. Types (2) and (3) exhibit morphophonemic erosion: loss of the locative copula *yé/bé* (*yéna/béna* > *na*) or the loss of the consonant *n* and merger of vowels (*yena* > *yɛa* > *yaa* > *ya*).

Because of its commonness, the (*bé/yé*) *nà ... (la)* “future” periphrasis is reconstructed as a proto-Western-Mande gram and viewed as an exemplary venitive type of prospective and future grams (cf. Babaev 2011:13-14). According to Babaev (2011:14), the ancestor of the element *naa* in the NAA LA gram, the predicate *\*nà* was still understood as lexical (i.e. as the verb ‘come’), not grammaticalised as an auxiliary or a tense-taxis-aspect marker. This harmonises with the fact that *naa* can still be used as a lexical verb in the periphrasis *be naa la* + stem + *la* in Basse and that the NAA LA gram is, in general, less advanced than the LA form. As a result, the reconstruction of the NAA LA formation as a venitive-path gram is corroborated by comparative studies. Basse Mandinka would conform to the typical way of deriving future tenses in Manding and Western Mande.

However, it must be noted that no future-perfect-path NAA LA formation has been proposed as a shared heritage of Western-Mande. Nor has the perfectal-perfective morpheme *naa* (grammaticalised from a homophonous venitive verb) been posited for other languages of the Mande or Manding family. However, given the creation of an entire set of perfectal-perfective formations in Basse Mandinka (and given the use of the cognates of the most common form in the perfectal-perfective NAA class, i.e. the NAATA gram), the original ‘come’-periphrasis could have been reinterpreted as a subtype of the NAA perfectal-perfective system, thus setting it simultaneously on an alternative evolutionary trajectory, i.e. a future-perfect cline. Therefore, in light of all the presented arguments, the two path mapping is still plausible in Basse Mandinka and does not stand in conflict with maps utilising one path developed for other dialects (this is related to the issue of complexity and will be discussed in section 7.3.1).

<sup>255</sup> See also a similar construction in Kagoro: *Mùsú nà tóbìlì là* ‘A woman will cook’ (Vydrin 2001:138). In Bambara of Kolona, the predicative marker of a future tense is *ní* (Dumestre & Hosaka 2000:14).

### 5.3 The future stream

In Basse Mandinka, there are only two grams that by having travelled along a future path (or its variant) have reached the stage of a regular expression of a certain type of futurity: the LA and NAA LA forms. Although these constructions have not developed along identical clines – as they emerged from different inputs – they can be compared and arranged on the general, inclusive, future stream.<sup>256</sup>

The LA gram covers three stages of a general future path: the modally coloured future (i.e. a future with the nuance of intentionality), the simple future (both perfective and imperfective) and the syntactic modality (subjunctive values in the subordinate *jannij* clauses and conditional uses in apodoses). Since the prototypicality peak is located in the zone of a simple future, the LA gram has been defined as a well-advanced future-path formation, the principal expression of futurity in Basse Mandinka. This profound grammaticalisation motivates the use of the LA gram as a future perfect. In addition, all the values can appear with a past temporal reference. Overall, the modal component (both modally coloured future and syntactic modality) is less relevant in the semantics of the LA gram than its genuine future or prospective values. However, the importance of the modal character of the formation increases if one considers its relatively common use in conditional periods, where it expresses apodotic values of real factuality, real counterfactuality and unreal counterfactuality. These senses can be explained both as regular extensions of a future, a future in the past and a future perfect in the past to conditional values and as results of the process of modal contamination. These two developments may in fact be related, additionally motivating the progression of the LA future towards the domain of subjunctives and conditionals. By identifying the possible lexical source from which the LA gram of the future path has emerged, it has been argued that the formation constitutes an example of a future predestination cline and a concomitant modal contamination path activated in apodoses and possibly in subordinate *jannij* clauses.

The NAA LA form is an example of a complex development along two paths, the venitive path and the future perfect path that have arguably emerged from two sources (of which the former may be direct-internal and the latter indirect-external). It is thus a conglomerate of two input cognitive schemas with their – at least initially – independent maps. First, the NAA LA form covers all the stages of the future perfect path with the exception of a future resultative sense. The prototypicality zone is located in the areas of a perfective future, proximate/imminent/certain/inevitable future and ‘almost’-perfect. The said values can also be placed in a past time frame and mapped by an analogous template. The three – rather poorly represented – values available in conditional apodoses (real factuality, real counterfactuality and unreal counterfactuality) correspond to further extensions of the future perfect cline, additionally stimulated by the modal environment, thus constituting a type of modal contamination as well. Given that the LA formation has emerged from a predestination source, and that the NAA LA form is an elaboration on the LA gram by expanding it by means of the perfectal-perfective morpheme *naa*, the NAA LA gram has

<sup>256</sup> For the accommodation of the SI construction on the future stream, see further below in this section.

been said to be additionally related to the predestination input: it is a perfectal-perfective subtype of the future predestination path.

However, the NAA LA form was also mapped by means of the venitive path. To be exact, the gram covers all the stages of this evolutionary scenario: venitive proper, intentional, proximate and imminent future, future of prediction and simple future. These senses can likewise be located in a past time frame. The prototypicality peak of this wave of the NAA LA formation corresponds to the intermediate section of the cline: the modal future (intention-goal) and the non-modal, more temporally oriented future (proximate, immediate, certainty and inevitability). The venitive path, located in a past temporal sphere, conditional apodoses and subordinate clauses, also accounts for certain modal senses: especially for real and unreal counterfactuality and values of probability and likelihood.

As a result, the dynamic definition of the NAA LA gram has been equalled with a summation of almost the entire length of the two paths, with the prototypicality peaks in the area of the second stage (modally coloured future) and the third stage (non-modal future, although usually limited to a perfective aspectual force) of a general future path. It is a relatively well developed gram of a future cline which, however, still preserves its more original values of motion and/or perfectness. The fourth stage of futurity – syntactic mood – is very poorly represented, which suggests a less profound development than was the case with the LA gram that, as explained, must have been an earlier category. It is from the LA gram that the NAA LA formation emerged.

By adopting a coarse-grained perspective and rounding so that the two dissimilar developments would fit into a similar macroscopic template (a general future cline), the LA form may be viewed as the first wave on the future stream, while the NAA LA gram corresponds to the second wave. The LA wave is older. It has advanced further on the stream and, at the same time, abandoned the original section – the predestination value typical of the first stage (observe that this value was still available in the 19<sup>th</sup> century; Macbrair 1842). On the contrary, the NAA LA form is a younger gram. It has progressed less on the stream – it is very infrequent in uses typical of the fourth stage, but inversely quite commonly found in functions exemplary of the initial section of the stream (venitive; cf. Figure 5.6, below). This means that although in this representation the attacking crests of the two waves have reached the same area (i.e. the third stage of futurity), the overall topologies of the two grams suggest their respective greater (LA gram) and lesser (NAA LA gram) advancement.<sup>257</sup> However, one should bear in mind that – even though located within a major stream towards futurity – the two grams develop along different sub-streams: the LA form evolves along the predestination stream whereas the NAA LA gram develops along the anterior-predestination stream (i.e. future-perfect cline) and venitive stream simultaneously.

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<sup>257</sup> As will be explained in the next paragraph and Figure 5.7, the peaks of the two waves are in fact located in different sections of the stream: the LA gram exhibits its peak in the stage of a simple future while the NAA LA form does so in the stage of a perfective future.

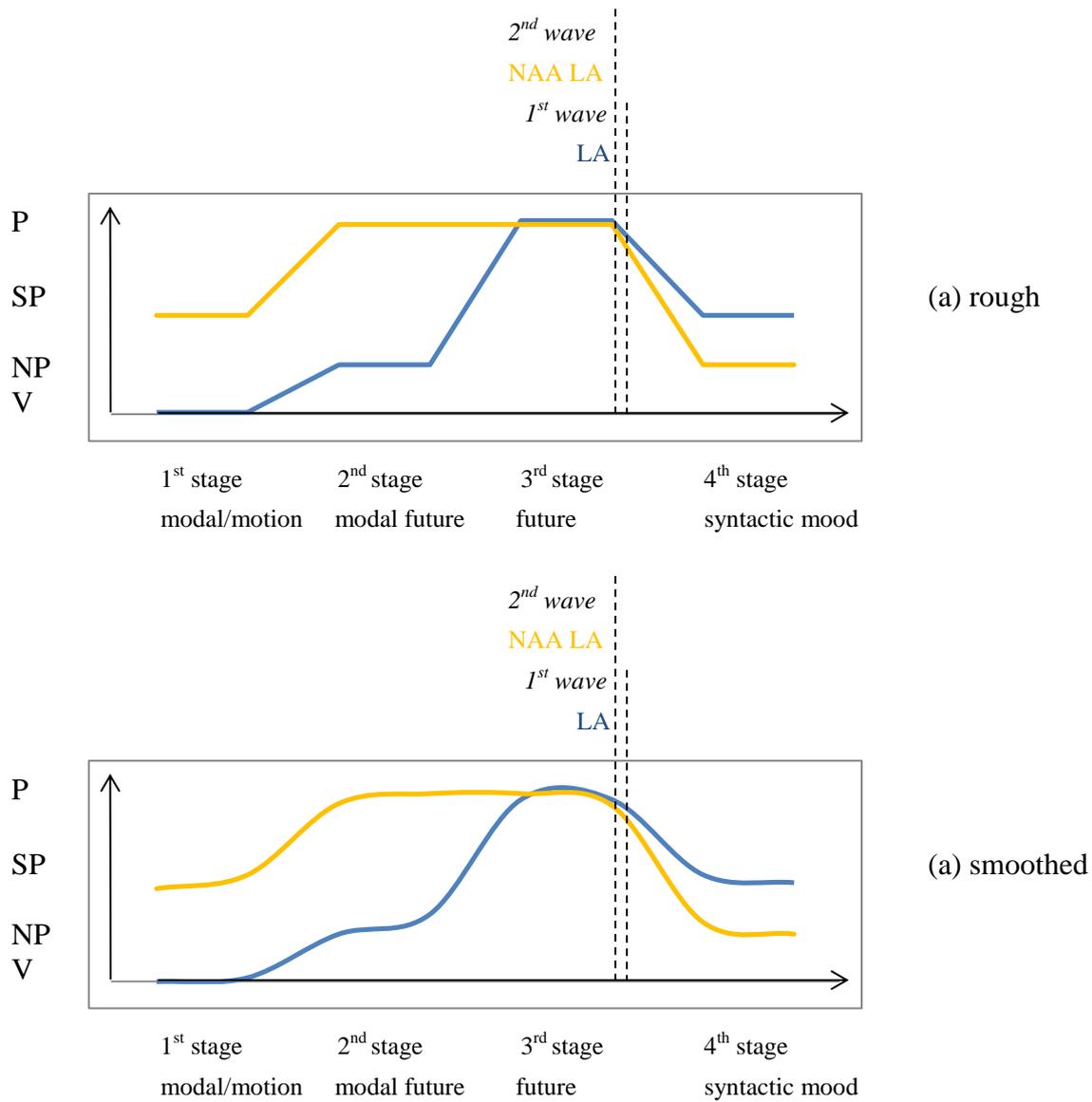


Figure 5.6: The travel-ness of the future-path stream – the LA and NAA LA grams (four stages)

In order to render the consecutiveness more evident and show that the positions of the peaks of the two waves are in fact dissimilar, the third stage can be divided into two sub-stages: the perfective and the simple (broad) future. If this approximation is adopted, the NAA LA formation is less advanced (the prototypicality peak reaches the stage of a perfective future) than the LA form (the prototypicality peak reaches the stage of a simple future).

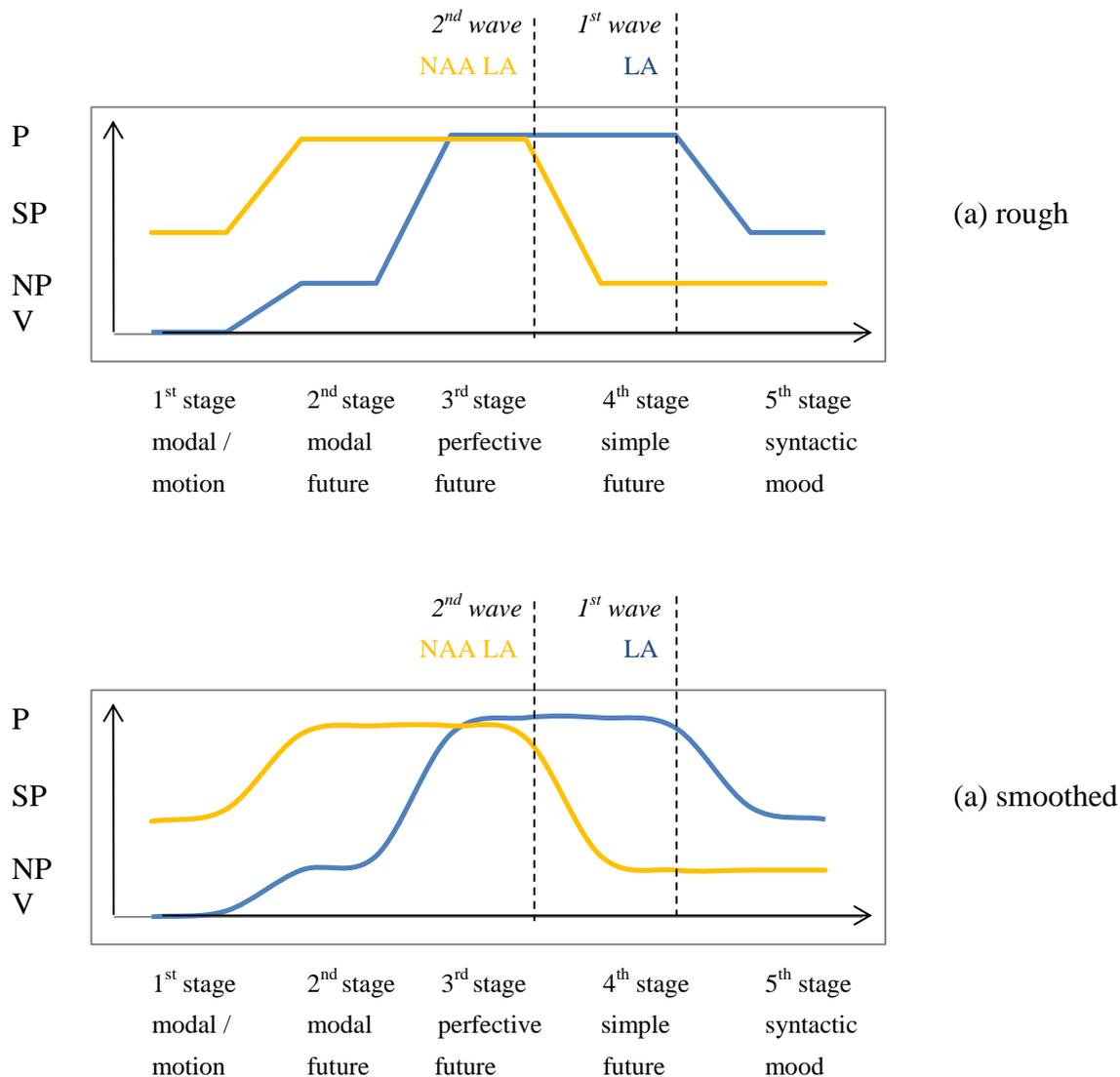


Figure 5.7: The travel-ness of the future-path stream – the LA and NAA LA grams (five stages)

If prototypicality zones are mutually compared, the LA gram can be associated with the idea of general futurity (approaching the grammatical prototype to a simple future tense) while the NAA LA form can be identified with a modal future (intention), values of future certainty-inevitability and proximity-imminence, and the sense of a perfective future. Although the venitive nuance of motion can be viewed as strongly associated with the NAA LA gram (observe that the wave of the NAA LA gram greatly surpasses that of the LA form in the first stage), it is in fact the expression *be naa la + stem + la* (i.e. the periphrasis with two elements *la*) that is the most prototypical means of conveying the venitive value in Basse Mandinka.

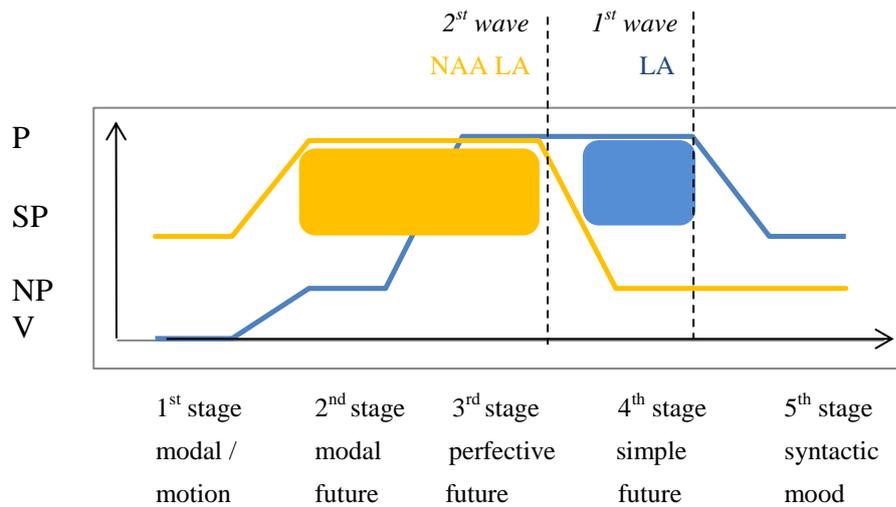


Figure 5.8: Competition and prototypicality association on the future path – the LA gram versus the NAA LA gram

Apart from the LA and NAA LA formations analysed in this chapter, there are three other grams that can convey ideas related to the domain of futurity in Basse Mandinka: the SI gram (see sections 2.5 and 4.4), the NOO gram (see section 4.1) and the ÑANTA gram (see section 4.2). Although these three constructions have not been classified as grams of a genuine future path, they can be incorporated into the model of a future stream because, as explained in sections 1.2.3.1, 1.2.3.3 and 1.2.3.4, various modal paths and the imperfective path in its advanced stage (i.e. the paths along which the SI, NOO and ÑANTA formations travel) are inherently related to future paths or to the idea of futurity.

The SI gram has been defined as an advanced imperfective- and/or modal-path gram with the peak of its wave located in the area of modal futurity, futurity and syntactic modality. If the imperfective-path mapping is correct, the first stage may be ignored, as the formation would have emerged from an imperfective input and not from an explicitly modal source. Nevertheless, as explained in section 2.5, it is possible that the modal uses of the SI gram (typically limited to the context of *noo* and *fo*) correspond to the first stage of a genuine modal path. Namely, the SI locution could have descended from an original modal periphrasis characterised by the sense of ability and intention (motion), thus being an example of a modal cline (cf. section 1.5 and 4.4). If the SI form is located on the general future stream, which hosts the LA and NAA LA grams, its wave covers the entire length of the *x*-axis, raising its shape in the first (modality),<sup>258</sup> second (modal future), third (future) and fourth (syntactic modality) stages. Accordingly, it is more advanced than the NAA and NAA LA locutions.

In sections 4.1 and 4.2, it has been demonstrated that the NOO and ÑANTA constructions are non-advanced modal-path grams with their prototypicality zones and wave crests in the area of agentive and speaker-oriented modality. These values roughly correspond to the first stage of the future stream (modality). The NOO and ÑANTA grams can also be

<sup>258</sup> This holds especially true for speaker-oriented and epistemic modality. However, the agent-oriented modal nuances are also well documented, particularly in the company of the words *fo* and *noo*.

used as modally coloured futures (or futures of possibility and probability) corresponding to the English expressions with the auxiliary *may* (*It may rain tomorrow*). Nevertheless, the two formations are significantly less advanced than the NAA LA, SI and LA grams.

For the sake of transparency, only one stage of modality has been distinguished in the figure below. Since at this granularity level the first stage includes any types of modality (agentive, speaker-oriented and epistemic) the waves of the NOO/ ÑANTA and SI grams are equally lifted. However, as has been explained in section 4.5, the wave of the NOO/ ÑANTA forms is less advanced (these constructions specialise in agentive modality) whereas the SI gram is more advanced (it specialises in speaker-oriented and epistemic modality). This difference may only be maintained in a more fine-grained representation. Additionally, the stage of futurity does not distinguish between a perfective and simple future. Thus, the wave peaks of the LA and NAA LA grams appear as equally advanced.

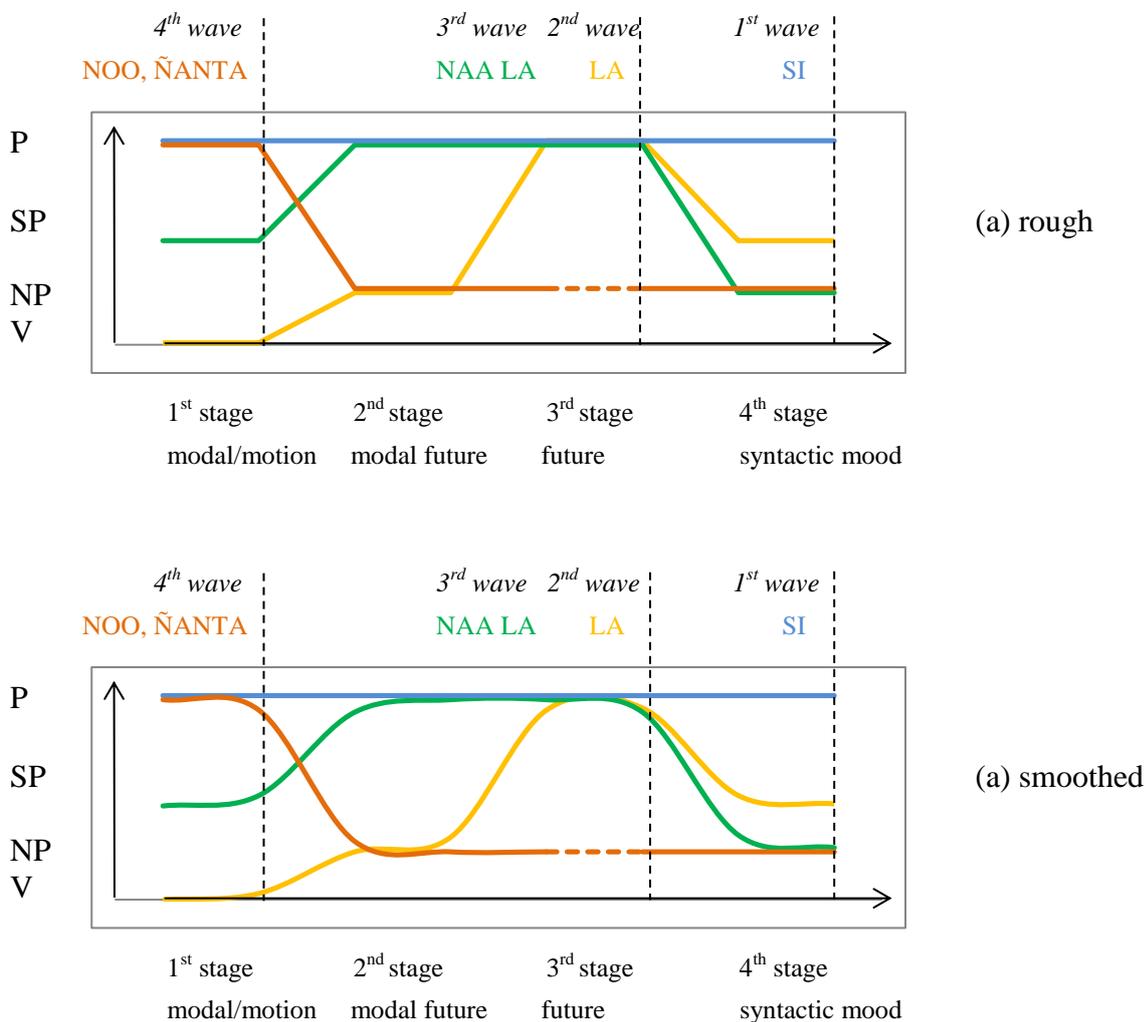


Figure 5.9: The travel-ness of the modal-future stream – the LA, NAA LA, SI, ÑANTA and NOO grams

The interaction of the topologies and, especially, prototypicality peaks of the SI, LA, NAA LA, NOO and ÑANTA grams gives rise to the following associations of these constructions

with semantic domains. The ÑANTA and NOO formations (the most recent wave) are typically equalled with modality (the first stage). Even though the SI form frequently expresses these values, it is usually less associated with the modal domain (at least, at this level of granularity) and more with the domain of a modal future.<sup>259</sup> This may stem from an extremely extended peak of the wave of the SI formation and its coexistence, at this stage, with the more confined NOO and ÑANTA waves. The area of a modal future (the second stage) is inhabited both by the SI and NAA LA form. The former specialises in the values of possibility and probability, while the latter in nuances of intention, certainty and inevitability. However, since the NAA LA gram is much less common overall than the SI form, the wave of the former (at least in its modal future function) seems to be “overcome” by the wave of the latter. As a result, it is the SI construction that tends to be equalled with the expression of a general modal future in Basse Mandinka. Out of twenty informants interviewed on this topic, all but one defined the SI gram as modal future or future. All classified the NOO and ÑANTA locutions as modal grams.<sup>260</sup> The perfective future domain – the first sub-phase of the third stage (a future) – is specific to the NAA LA gram, while the LA form tends to be associated with a simple future value. Nevertheless, given the scarcity of the NAA LA locution, the relevance of this domain for speakers seems to be much less than the importance of the idea of a general futurity. As for this general future sense, it is the LA gram that is usually viewed as a prototypical means of conveying it. Indeed, when asked to provide exemplary means of expressing a future tense, fourteen informants suggested the LA gram. Six selected the SI formation. Lastly, the SI locution is the most regular expression of the senses available in the fourth stage (syntactic modality) where its wave overcomes all the other waves. Although no speaker defined the SI gram as a syntactic modality,<sup>261</sup> when asked to complement an exemplary subordinate clause, all of them employed the SI construction.<sup>262</sup>

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<sup>259</sup> However, it is also associated with the domain of speaker-oriented and epistemic modality if this modal stage is rendered more fine-grained (cf. section 4.5).

<sup>260</sup> Observe that if the distinction is made between agentive modality and speaker-oriented/epistemic modality, the NOO and ÑANTA grams are usually associated with the former sense, while the SI gram is associated with the latter values (cf. section 4.5).

<sup>261</sup> This may obviously stem from the high schemacity of this use and its more theoretical linguistic foundation.

<sup>262</sup> The informants were asked to choose only one form from the ÑANTA, NOO, LA, NAA LA and SI gram. It should be noted that in this “test”, the YE<sub>2</sub> gram was not an option.

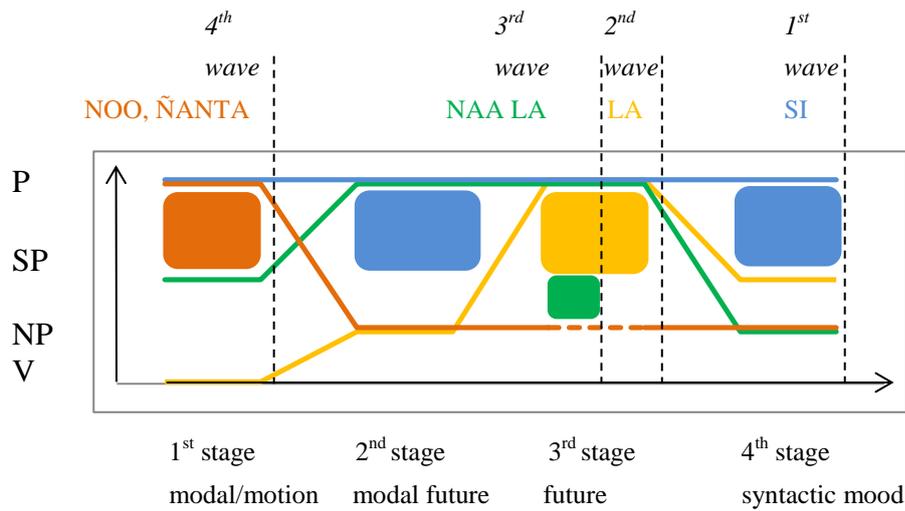


Figure 5.10: Competition and prototypicality association on the future path – the LA, NAA LA, SI, ÑANTA and NOO grams

The possible associations, discussed in the previous paragraph, demonstrate that a part of the semantics of the gram depends not only on its own intrinsic properties, but also on the environment in which it exists. In particular, the meaning of a gram is contingent on prototypicality peaks of the other grams traveling along the same or similar paths, and thus on the structure of the stream in which it is embedded.



## CHAPTER SIX

## MODAL-CONTAMINATION-PATH MODULE

## 6. Modal-contamination-path module

The present chapter provides an analysis of the last type of verbal grams in Basse Mandinka. The semantic maps of these constructions make use of the evolutionary scenario of modal contamination. First, two formations whose meaning is entirely networked by means of the modal contamination cline will be examined: the B-IMPR gram (section 6.1) and the YE<sub>2</sub> gram (section 6.2). In addition, a group of locutions that have been analysed in the previous chapters (KA, SI, YE<sub>1</sub>, TA, LA and NAA LA grams) will be studied (section 6.3). Although these constructions principally belong to other streams – as they have been mapped by means of other evolutionary templates – they offer uses that can be explained and connected to the dominant portions of their meaning by using the modal contamination cline. Thus, a part of their semantic potential has arisen due to the phenomenon of modal contamination.

In this chapter, I will follow the procedure adopted previously in the dissertation, which consists of the following steps: discussion of structural properties of a gram; presentation of a detailed review of senses, each one being illustrated by examples extracted from the database; and the formulation of a dynamic definition of the gram in terms of a kinetic map and wave. Lastly, in section 6.4, a holistic model of the module of constructions organised along the modal contamination path will be proposed and portrayed as a stream of consecutive waves.

## 6.1 The base-Imperative gram

The category of an imperative is expressed in Basse Mandinka by means of a verbal base, which is the most elementary and least morphosyntactically complex form among all the verbal constructions. For this reason, the locution that regularly carries the imperative force will be referred to as the base-Imperative gram (abbreviated as B-Imperative or B-IMPR) in order to differentiate it from an imperative function or sense that can be conveyed by other constructions (especially by the SI and YE<sub>2</sub> grams but also, even though in a softer way, by the ÑANTA and NOO forms).

Since verbal bases – like most categories of the Basse Mandinka verbal system – can be transitive or intransitive depending on whether the direct object overtly appears in the immediate position before them, the B-Imperative can also be either transitive or intransitive. Accordingly, the B-Imperative of transitive bases must contain the object (*A safe!* ‘Write’ or *A ke!* ‘Do it!’), whereas with intransitive bases, the object cannot be expressed (*Naa!* ‘Come!’ and *Wuli!* ‘Get up!’). In the case of reflexive verbs, the reflexive pronoun *i* is preserved in the B-IMPR form (*I doŋ!* ‘Dance!’, *I bori* ‘Run!’ or *I deyi!* ‘Be quite’).

The B-IMPR gram is only found in the second person. Although in the singular the B-Imperative commonly appears without any pronominal person marker, it may be headed by the emphatic pronoun of the second person *ite* ‘you’: *Ite wuli!* ‘You [singular] get up!’, *Ite*

*naa!* ‘You [singular] come!’ or *Ite a ke!* ‘You [singular] do it!’. In the plural, the B-IMPR gram typically employs the plural pronoun – either the non-emphatic pronoun *al(i)* or the emphatic pronoun *alito/elu* or its variations: *Al taa!* ‘You [plural] go!’, *Al naa!* ‘You [plural] come!’, *Al sii!* ‘You [plural] sit down!’, *Ali a domo!* ‘You [plural] eat it!’ or *Ali i deyi* ‘You [plural] be quiet’.

The negative variant of the B-Imperative – corresponding to a category of a prohibitive – is derived by placing the entity *kana* in front of the base: *Kana naa!* ‘Don’t come!’ and *Kana a ke!* ‘Don’t do it!’. It should be noted that the imperative can be formed from dynamic roots (cf. above) as well as from static and adjectival bases: *Beteyaa!* ‘Be good!’, *Ite maadiyaa* ‘You [singular] be happy!’ or *Alitel bamban!* ‘You [plural] be strong!’.<sup>263</sup> Thus, there are no constraints on the type of roots or constructions that may appear in the B-Imperative. The sole criterion is the semantic and pragmatic appropriateness.

### 6.1.1 Semantic potential

#### 6.1.1.1 Grammatical tradition

The B-IMPR gram has commonly – and unsurprisingly – been viewed as an exemplary category of an imperative (Macbair 1842:20, Hamlyn 1935:23, Rowlands 1959, Gamble 1987:11, Colley 1995:7-8, Creissels 1983, Lück & Henderson 1992, WEC 2002, Creissels & Sambou 2013:75). Probably due to its exemplary imperative behaviour, the construction has not been dedicated much study and the semantic analysis of this gram has usually been limited to the above mentioned statement. To be exact, Macbair (1842:20-21) proposes that the B-IMPR locution is an ‘imperative mood’, one of the forms that can express the imperative function. A similar opinion is maintained by Hamlyn (1935:23-34) who views the B-IMPR gram as one of the four constructions that are able to carry the sense of orders and commands, the remaining ones being the SI, YE<sub>2</sub> and NAÑTA forms. He proposes that the B-IMPR gram has a stronger value than imperative uses offered by the other locutions. In particular, it is less polite than the SI and YE<sub>2</sub> formations employed in the directive function. Gamble (1987:11-13) merely equates the B-IMPR gram with the category of imperative.

In addition, as far as the syntax of the B-IMPR form is concerned, Gamble observes that the formation can be preceded not only by pronouns of the second person plural but also by singular pronouns. The observation may already be found in the study published by Creissels (1983a) who correctly notes that when a pronoun is used in the singular, it is the emphatic variety that is employed (*Ite taa!* ‘Go!’). On the contrary, the simple non-emphatic pronoun is regularly deleted (*Taa!* ‘Go!’). This property was subsequently interpreted by Creissels & Sambou (2013:75-76) as an indicator of the fact that in the affirmative the subject’s position of the B-IMPR gram is empty (cf. also Wilson 2000:113).

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<sup>263</sup> On the marker *kana*, its variants, relation to the verb *nà* ‘come’ and possible origin, see Creissels (1997b:19-20) and Tröbs (2009:238-239).

## 6.1.1.2 Evidence from Basse

As already mentioned, the B-IMPR gram is the principal means of conveying the imperative function in Basse Mandinka. Thus, it introduces orders – typically direct and strong – addressed to the second person singular (6.1.a-b) and plural (6.1.c).

- (6.1) a. Dookuwo **ke!**  
work do  
'Work!'
- b. I daa **yele!**  
your mouth open  
'Open your mouth!'
- c. Ali a **jiibee!**  
you it look.at  
'Look at it!'

The order can refer to an immediate or more distant (even remote) future. In the former case, the activity conveyed by the B-Imperative is to be performed right now (6.2.a-c), while in the latter it is required to be only accomplished later (6.3.a-c).

- (6.2) a. Al **sii** silaŋ!  
you sit now  
'Sit down now!'
- b. Laamini **wuli!** N lafita sii la jee!  
Lamin get.ip I want sit.down to there  
'Lamin get up! I want to sit down there!'
- c. I **deyi!** N lafita misikoo laamoyi la!  
REFL be.quite I want music listen to  
'Be quite! I want to listen to the music!'
- d. A pareeta. A **domo** saayinj!  
it is.ready it eat now  
'It is ready. Eat it now!'

- (6.3) a. Bukoolu **naati** saama!  
books bring tomorrow  
'Bring the books tomorrow!'
- b. Ñiŋ kewo **faa** niŋ n seyita!  
this man kill when I have.returned  
'Kill this man when I return!'
- c. Motoo **waafi** jaari!  
car buy next.year  
'Sell the car next year!'
- d. Ñiŋ **karaŋ** niŋ m faata!

this read when I am.dead  
 ‘Read this when I am dead!’

The B-Imperative can also express orders that are supposed to be repeated and can be viewed as to be performed in an iterative or habitual manner:

- (6.4) a. **Taa** Gambia Desemba karoo le kono!  
 go Gambia December month FOC in  
 ‘Go to Gambia in December!’ (cf. Polish translation that employs the imperfective imperative form *jeźdźij*)
- b. Mandinkakano **karaj** luŋ-wo-luŋ!  
 mandinka.langage study every.day  
 ‘Study Mandinka every day!’ (cf. Polish translation that employs the imperfective imperative form *studiuj*)
- c. **Taa** marisewo to somandaa-wo-somandaa  
 go market to every.morning  
 ‘Go to the market every morning!’ (cf. Polish translation that employs the imperfective imperative form *chodź*)

The above-mentioned meaning prompts the use of the B-Imperative in generic stipulations, laws and atemporal prescriptions:

- (6.5) a. Toña **fo!**  
 truth tell  
 ‘Tell the truth!’
- b. I faamaa niŋ i baamaa **horoma!**  
 your father and your mother respect  
 ‘Respect your father and mother!’
- c. Ali **laa** Alla la!  
 you believe God in  
 ‘Believe in God!’

The B-Imperative is limited to the uses of the second person singular and plural and, hence, cannot be directed to the first and third person (see examples 6.6.a-b). In such instances, different verbal forms must be employed: typically the SI, YE<sub>2</sub> and MAA grams as well as the NAÑTA or even NOO locutions for milder commands and request (see again examples 6.3.c-d).

- (6.6) a. \*Ate **naa!**  
 he come  
 Intended meaning: ‘May he come / Let him come!’
- b. \*Nte **taa!**  
 I go

Intended meaning: ‘Let me go!’

- c. A **ye naa!**  
He YE<sub>2</sub> come  
‘May he come / Let him come’
- d. **Da taa** m baamaa yaa!  
I-YE<sub>2</sub> go my mother to  
‘Let me go to my mother’

In order to stress a given command conveyed by the B-Imperative form, the particle *ko* is used:

- (6.7) a. Laamini, **naa** ko!  
Lamin come PARTL  
‘Lamin, come!’
- b. Faatu, **sii** ko!  
Fatu sit.down PARTL  
‘Fatu sit down!’

Inversely, if one wants to slightly soften an order, the particle *baŋ* is added:

- (6.8) a. **Wuli** baŋ!  
get.up PARTL  
‘Get up!’
- b. **Naa** baŋ!  
come PARTL  
‘Come!’

If one wants to render the order expressed by the B-Imperative even more mildly, he or she typically uses the word *dukaree* ‘please’:

- (6.9) a. A **dii** n na dukaree!  
it give me to please  
‘Give it to me please!’
- b. Ali **duŋ** jaŋ dukaree!  
you enter here please  
‘Please enter here!’

Finally, although the order conveyed by the B-IMPR gram can be both perfective and imperfective, the perfective variant can explicitly be expressed by using the marker *naa* (cf. section 5.2.2.1)

- (6.10) a. A **ke!**  
it do

‘Do it’ (cf. the Polish translation that can employ both the imperfective and perfective imperative forms *rób* and *zrób*)

- b. Naa a ke!  
NAA it do

‘Do it’ (cf. the Polish translation that employs the perfective imperative form *zrób*)

### 6.1.2 Dynamic map

Being limited to one function, the semantic potential of the B-IMPR locution alone is not sufficient to posit a path with which the meaning of the gram could be mapped and its origin determined. Nevertheless, it is clear that one must deal with a cline that leads to the domain of deontic-directive, speaker-oriented modality.

Imperatives usually arise by following two evolutionary scenarios: they constitute more advanced stages on a modal path (most commonly obligation or desire-movement clines) or emerge due to modal contamination. Even though the semantic potential of the B-IMPR form cannot ultimately determine which one of these two principal possibilities is more likely, it does constitute the first evidence for hypothesising the path to which the gram would belong. Namely, the very fact that the B-Imperative is exclusively employed in one function and consequently does not offer senses located on the genuine modal paths – the values that could witness more original stages of the development are entirely missing – suggests that the modal contamination may be more probable. Since polysemy is the norm in languages, verbal grams typically offer more than one meaning: they preserve older senses or provide uses that, albeit nowadays uncommon, will likely be frequent in posterior developmental phases. This phenomenon apparently fails to exist in the semantic potential of the B-IMPR gram, as no sense other than the imperative characterises this formation. However, limited semantic potentials of verbal constructions may emerge, if their rise has been triggered by using a given form only in a strictly determined context. Such a phenomenon occurs during modal contamination. In fact, a consistent use of a gram in a specific context is a necessary condition for the modal contamination path and stimulus for other meaning extensions that may (although they do not have to) be developed subsequently.

The other piece of evidence that may be used in determining the cline of the B-IMPR gram is its form. As explained in section 6.1.1, the B-IMPR construction is not marked by any morpheme, either an affix or an independent predicator, being formally undistinguishable from a verbal base. In Basse Mandinka, the verbal base is the simplest form of a verb and constitutes the quotation form of it. From a functional perspective, verbal bases in Basse Mandinka – if accompanied by the entities *la* or *ka* – are similar to the category of an infinitive. The morphemes *la* and *ka* are usually analysed as infinitive markers (Creissels & Sambou 2013) although they probably derive from a postposition (*la*) and a conjunction (*ka*). In general terms, the element *la* appears in cases where the base follows a verb that, if a noun is to be used, requires the postposition *la* (*N lafita taa la Banjul* ‘I want to go to Banjul’ versus *N lafita bukoo la* ‘I want the book’). The infinitive marker *ka* is found where the ideas of goal-purpose (*N naata jaŋ ka a ke* ‘I came here to do it’) or coordination (*Moolu be siirin*

*jee ka domoroo ke ñoo la* ‘People are sitting there and eat together’) are profiled. In addition, the complex [base + *la*] is found in certain verbal grams (e.g. the LA form; section 5.1) where the old postposition has been grammaticalised as a genuine infinitive marker. Lastly, the sequence [*ka* + base] may function as a topicalised and/or dislocated subject (*Ka naa Gambia, a maŋ koleyaa* ‘To come to Gambia is not difficult’).<sup>264</sup> In fact, bare infinitives, which are morphologically undistinguishable from bases, also (although less commonly) occur in Basse Mandinka, for instance with the verb *taa* ‘go’ (cf. also Creissels 2013b:61-62)

Since the modern infinitives are in most cases bases extended by elements that originally were postpositions or conjunctions, one may hypothesise the following: at the time where the infinitive markers were postpositions or conjunctions (i.e. where they were not grammaticalised as infinitive markers), the infinitive might have corresponded to the base itself. In other words, the base would have functioned as an infinitive (for instance, for topicalisation, as the subject of a sentence or in other exemplary functions of infinitives). In this manner, the three categories (base, infinitive and imperative) would exhibit the same morphological shape, as they still have in the contemporary Basse Mandinka language.<sup>265</sup> Their functional difference – i.e. the use as a base, infinitive and imperative – would originally have been motivated by the environment, be it syntactic (in the infinitival function, the base was introduced by the postposition *la* and conjunction *ka*) or pragmatic (in its imperative function, the base appeared in the context of an order or a command). What happened in the history of Basse Mandinka and Manding is that the infinitively-used base incorporated the morphemes *la* and *ka*, which in turn became infinitive markers. In fact, in many cases the distribution of the *la* and *ka* infinitives in Basse Mandinka still reflects the origin – the *la* infinitive descends from the sequences where the base was probably headed by the postposition, while the *ka* infinitive might have derived from purpose clauses. This process is crosslinguistically frequent and may be illustrated by the infinitive grams in English (where the preposition *to* became an infinitive marker) and in Icelandic (where the preposition *að* was generalised; cf. Fischer 1996, 1997, 2007 and Haspelmath 1989).

This morphological similarity (if not a total identity) of the categories of the base, on the one hand, and the imperative and the infinitive on the other (as explained, the infinitive is an elaboration of the base, descending from an infinitively-used base) is highly important. This significance stems from the typological fact whereby infinitives – which are commonly the simplest and quotation forms of verbs (just like verbal bases) – quite naturally lend themselves to being employed with the force of a directive deontic modality and may develop into imperatives. To be exact, linguistic typology demonstrates that the use of infinitive forms to express deontic values (direct and indirect orders, commands, obligations, desires and prescriptions) is highly common in the world’s languages (Aikhenvald 2010:55-56, 281-288, 351). Particularly frequent is the practice of using an infinitive to address the second person singular or plural and hence of employing infinitives in the function of an imperative. Similarly widespread is the use of infinitives as alternative or, even, paradigmatic prohibitives (negative imperative). On the contrary, cases where an imperatival infinitive form is directed to the first and third person – although available – are significantly less

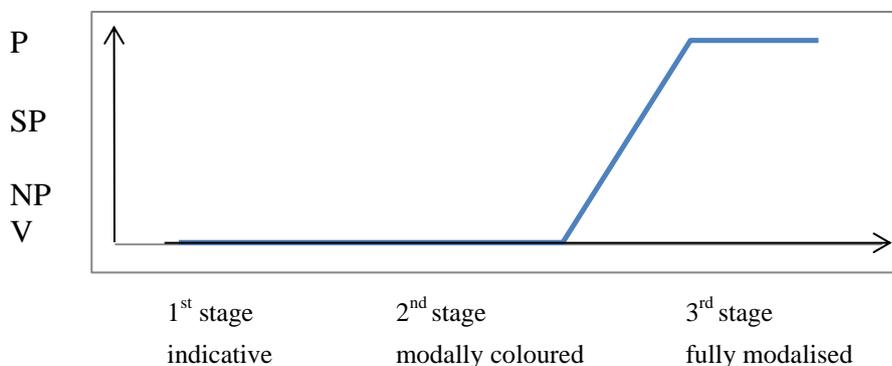
<sup>264</sup> Some functions that are typical of infinitives are carried out by verbal nouns.

<sup>265</sup> I refer to the morphological form of the predicate, where the infinitive markers *la* and *ka* are disregarded.

typical. Another extremely common deontic or directive use of infinitives appears in instances where the construction introduces generic instructions and prescriptions (Aikhenvald 2010:281).

From an evolutionary perspective, typological studies show that infinitives, originally non-command forms, are characteristically employed with a deontic force (in semantically, syntactically or pragmatically deontic contexts), and that due to this compatibility with and customary occurrence in deontic environments, they may give rise to properly deontic categories, especially to imperatives and prohibitives (Aikhenvald 2010:351, Van der Merwe & Andrason 2014).

The acquisition and generalisation of a deontic force by original infinitives stems from the process of modal contamination, which consists of four main phases: 1) non-modal source employed in a modal environment; 2) the non-modal gram is associated with modal values available in the modal context in which it is used (modally coloured indicative); 3) modal uses are regularised, non-modal readings become no longer available and an old indicative gram is identified with a mood restricted to the context from which it emerged (a mood with no or minor indicative uses); and 4) a modally contaminated gram is “emancipated” from the explicitly modal milieu and may be used independently. In the case of the B-IMPR gram, one can argue that the non-modal form (base-infinitive) has been fully modalised in an explicit modal context of commands. In this environment, only the modal force is available nowadays. In other environments, the verbal base has acquired different properties. Accordingly, the B-IMPR formation should dynamically be defined as an advanced – third stage or fully modalised – gram of the modal contamination path.



(a) rough

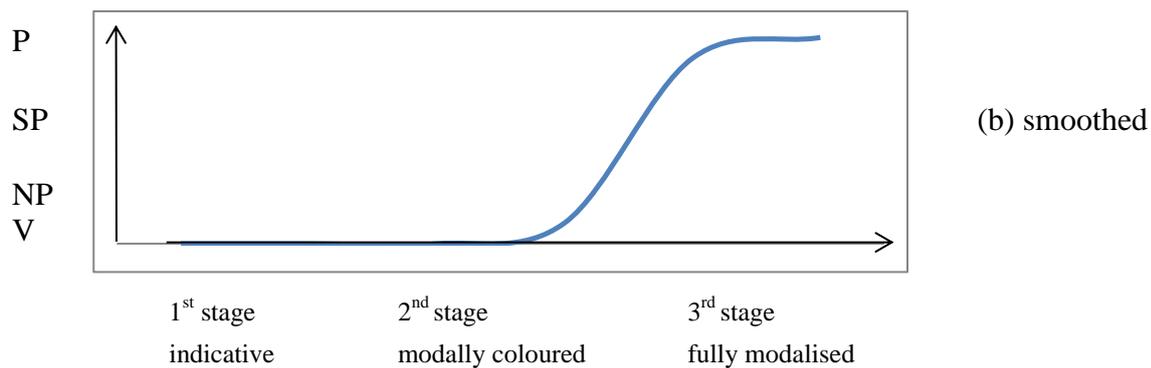


Figure 6.1: The wave model of the B-IMPR gram – modal contamination cline<sup>266</sup>

Although the evolutionary scenario posited above – and the mapping based upon it – is the most plausible given the available data, one could conceivably imagine yet another possibility. Namely, it is possible that the B-Imperative derives from a more complex gram – even initially a periphrasis – with different semantic properties (e.g. a modal or future gram). Due to the process of grammaticalisation, the original explicit marking (affix or predicative morpheme) has been lost and the shape simplified to the degree that it has become identical to the form of a verbal base. Even if this is possible, the hypothesis cannot be corroborated by any concrete evidence and therefore should be regarded as significantly less probable. This theory is also less likely because if it is true, it would presuppose a formal convergence of originally dissimilar grams. To be exact, although morphosyntactically distinct in the beginning, the B-Imperative and the verbal base (from which the infinitive emerged) would have become identical due to independent phonological and morphological reductive processes. Even though such developments are crosslinguistically attested (cf. the merger of three *yiqtol*-morphologies in Biblical Hebrew; Andrason 2013a or the merger of the Aorist and Imperfect in Old Polish; Długosz-Kurczabowa & Dubisz 2003), they rather constitute exceptions than tendencies. *Summa summarum*, the common ancestor of the base-infinitive and B-Imperative seems to be more plausible.

The properties of the imperatives in Manding are fully consistent with the characteristics of the B-IMPR gram, exhibiting a morphological shape that is undistinguishable from the base or the bare infinitive (at least in the singular; cf. Creissels 1986:13). For instance, in Standard Bambara and well as in its dialects (e.g. Bambara of Kolona), the marker of the imperative is  $\emptyset$ , the form being identical in the singular to the verbal base: *Finin jò tà* ‘Take your clothes’ (Dumestre & Hosaka 2000:18). The same situation can be observed in Maninka of Niokolo where the imperative is identical to the base. In the singular, the pronoun is not expressed: *Álimeetóo sáη η yey!* ‘Buy me cigarettes!’ (Creissels 2013b:26, 42). On the contrary, the imperative plural is marked by a pronominal: *Álu η só godóo la* ‘Given me some money’ (Creissels 2013b:42-43; for other comparable

<sup>266</sup> For the sake of transparency and, especially, due to the difficulty of interpreting certain evidence, the fourth stage will be disregarded in this figure and in the subsequent comparison of the grams of the modal-contamination stream (cf. sections 6.2 and 6.4, below).

cases, see Kagoro (Creissels 1986), Korokan (Creissels 1987/1988:22-23), Kita Maninka (Keïta 1984:61)). In addition, in some Manding/Mande languages, the imperative plural exhibits its own predicative marker, for instance *yé* in Bambara *á yé nà yàn* ‘Come [pl.] here!’ (Blecke 1988/2004:41; cf. Dumestre 1999:11) and in Bozo (*áá yè bé!* Lauschitzky 2007:39).

## 6.2 The YE<sub>2</sub> gram

The next gram of the modal contamination type is the YE<sub>2</sub> formation. In section 3.2, I have analysed a verbal locution which employs the marker *ye* (*ɲa* and *ɲà* in the first person singular and plural respectively) – the so-called YE<sub>1</sub> formation. Basse Mandinka possesses in its verbal repertory another construction built of the morpheme *ye* (or *ɲa* and *ɲà* in the first person singular and plural) and the base of a lexical verb which, in order to be distinguished from the YE<sub>1</sub> form, will be referred to as a YE<sub>2</sub> gram:

- (6.11)        A        **ye**        **naa!**  
                   he        YE<sub>2</sub>     come  
                   ‘May he come!’

The two formations are morphologically undistinguishable. Their main difference – besides a clearly distinct semantic potential and thus dynamic mapping (see section 6.2.1 below) – concerns their syntax: while the YE<sub>1</sub> gram is only derived from transitive roots (intransitive constructions regularly appear in the TA locution; 6.12.a), the YE<sub>2</sub> form can be found both in transitive and intransitive constructions (6.12.c-b):

- (6.12) a.        A        **ye**        a        **ke**  
                   he        YE<sub>1</sub>     it        do  
                   ‘He has done it / He did it’  
           b.        A        **ye**        **taa!**  
                   he        YE<sub>2</sub>     go  
                   ‘May he go! / Let him go!’  
           c.        A        **ye**        a        **ke**     ite     **ye!**  
                   he        YE<sub>2</sub>     it        do     you     for  
                   ‘Let him do it for you!’

The two grams can also be differentiated morphosyntactically in the negative. Whereas the entity *kana* (6.13.a) is employed to negate the YE<sub>1</sub> form, the predicator *maŋ* (6.13.b) appears as the negator of the YE<sub>1</sub> locution.

- (6.13) a.        A        **kana**        **naa!**  
                   he        KANA        come  
                   ‘May he not come! / Let him not come!’  
           b.        A        **maŋ**     **naa**

he      MAḶ    come  
 ‘He has not come / did not come’

Additionally, the YE<sub>2</sub> formation may be distinguished from the YE<sub>1</sub> gram by placing the modal particle *fo* at the beginning of the sentence, before the subject (6.14.a). Inversely, the YE<sub>1</sub> can be overtly differentiated by using the focalisation particle *le* (6.14.b):

- (6.14) a.      Fo      a      **ye**      **naa!**  
                  OBL he      YE<sub>2</sub>      come  
                  ‘May he come’ / ‘Let him come’
- b.      A      **ye**      a      **ke**      le  
                  he      YE<sub>1</sub>      it      do      FOC  
                  ‘He has done it’

As was the case with the YE<sub>1</sub> gram, the YE<sub>2</sub> formation admits three alternative variants of the marker employed for the first person singular or plural. Besides the form *ḡa*, one frequently finds a by-form *na*. Less common are two other variants, viz. *ne* and *ñe*. Although the frequency of all these alternative forms is distinct, all of them are usually accepted. One should also note that all types of roots – be they dynamic, static or adjectival – are acceptable and preserved as such in the YE<sub>2</sub> construction (i.e. no modification of the lexical aspect of the predicate is observed).

## 6.2.1 Semantic potential

### 6.2.1.1 Grammatical tradition

The Mandinka YE<sub>2</sub> gram has typically been viewed as an imperative or subjunctive category (cf. Rowlands 1959). Macbrair (1942:21) classifies it as one of the modes of the imperative and exhortation, corresponding to the English constructions *let him* and *let’s*. Hamlyn (1935:23-24) closely follows this view, identifying the gram with imperative and exhortative functions. However, he claims that the gram is supposedly limited to intransitive constructions. Creissels (1983a) defines the YE<sub>2</sub> locution as an affirmative projective, the negative variant of which (a prohibitive form) is always introduced by *kana*. A similar array of values has been observed by Gamble (1987). According to Gamble (1987:18, 22), the YE<sub>2</sub> gram can express exhortations (equivalent to *let’s* and *let me*), the idea of seeking permission (corresponding to *shall I?*), orders (following an overt imperative form, i.e. the B-Imperative) and purposive nuances in subordinate clauses (*so that*). Colley (1995:11) classifies the YE<sub>2</sub> locution as a subjunctive (equivalent to *let*), especially common with the first and third person singular and plural. Lastly, Creissels & Sambou (2013:74) term the gram as an affirmative subjunctive (see also Wilson 2000:113). They correctly note that the subjunctive YE<sub>2</sub> can be both transitive and intransitive. As far as the meaning is concerned, the gram expresses orders (or prohibitions in the negative), exhortations (in the first person) and

permission (again in the first person accompanied by the particle *baŋ*). It is also extensively employed in subordinate clauses (Creissels & Sambou 2013:74-75).

#### 6.2.1.2 Evidence from Basse<sup>267</sup>

In clauses that are not subordinate, and when directed to the second person singular or plural, the YE<sub>2</sub> formation is commonly found in an imperative function: it expresses orders and commands directed to a single interlocutor or to a group of them. Most frequently, the gram is headed by an overt imperative form, viz. the B-Imperative. This indicates that it can exhibit the same force (or strength of an order) as the B-IMPR gram – it is not necessary a milder or more polite variant.

- (6.15) a.      Wuli,            i        **ye**    **taa!**  
                  stand.up    you    YE<sub>2</sub>    go  
                  ‘Get up and go!’
- b.      Wuli, i        **ye**    **sayi**    suwo    kono  
                  get.up    you    YE<sub>2</sub>    return    house    in  
                  Get up and go to your house
- c.      Naa    i        **ye**    domodaa    **taa**  
                  come    you    YE<sub>2</sub>    domoda    take  
                  ‘Come and take the domoda’
- d.      Ñiŋ    kewo    faa,    i        **ye**    doo        **bula!**  
                  this    man    kill    you    YE<sub>2</sub>    another    leave  
                  Kill this man, leave the other!

Since orders may also be introduced by the SI gram (cf. section 2.5), the YE<sub>2</sub> formation in the sense of an imperative may also follow the SI form:

- (6.16)      Ali    **si**    a        **samba**    naŋ,    ali    **ye**    a        **faa**  
                  you    SI    him    bring    to.here    you    YE<sub>2</sub>    him    kill  
                  ‘Bring him here and kill him!’

The action conveyed by the YE<sub>2</sub> gram can also be directed to the first person. In the singular, the use of the YE<sub>2</sub> suggests two things. First, if the subject of the sentence does not control the condition enabling him or her to perform an activity, the YE<sub>2</sub> construction indicates that the person seeks the permission to execute it (6.17.a-b). Second, in case the speaker does control the conditions of performance of an action, the YE<sub>2</sub> locution expresses the concept of encouragement or incitement given to him or herself (6.17.c).

- (6.17) a.      Kana    loo    jaŋ!    **Da**    **duŋ**    suwo    kono!  
                  Do.not stay    here    I-YE<sub>2</sub>    enter    house    in

<sup>267</sup> The evidence presented in this section draws from my article “The meaning of the YE constructions in Basse Mandinka” published in *Philologia 10* (cf. Andrason 2012g).

- ‘Don’t stay here. Let me enter into the house’ (cf. the imperative of permission in Polish *Daj mi wejść*)<sup>268</sup>
- b. Laamin!      m      bula,    **ŋa**    **taa!**  
Lamin          me      leave I-YE<sub>2</sub> go  
‘Lamin, leave me, let me go!’ (cf. the imperative of permission in Polish *Daj mi iść*)
- c. **Da**    ñiŋ    **jiibee!** (when being alone and talking to himself)  
I-YE<sub>2</sub> this    see  
‘Let me see’ (cf. the exhortative locution in Polish *Niechaj spojrzę*)

When used with the first person plural, the YE<sub>2</sub> gram typically conveys an exhortative value, introducing encouragements or urgings. The subject – a person viewed as an individual or as a member of group – directs orders and suggestions to him- or herself, or to the group in which he belongs (6.18.a-b). The pronoun *ali* marks the expression as inclusive. Sometimes, however, it may also be used to seek the permission from the person who has the authority to control the action and who does not need to belong to the group referred to by the pronouns *ŋà* ‘we’ (6.18.c). Instead of the inclusive marker *ali* or *al* ‘we all’ very commonly the word *mol* [mol] is used (6.18.d). This element is derived from the lexeme *mool(u)* [mo:l(u)] ‘people’. However, *mol* has been grammaticalised as an alternative inclusive hortative pronoun. An overt indication of this may be its short vowel, in contrast to the long vowel of the lexical source (cf. section 1.1.3.3).

- (6.18) a. Ali    **ŋà**                    ñiŋ    motoo **saŋ!**  
we-all we-YE<sub>2</sub>            this    car    buy  
‘Let’s buy this car!’ (cf. the imperative of the first person plural in Polish *kupmy*)<sup>269</sup>
- b. Ali    **ŋà**                    domoroo    **ke!**  
we-all we-YE<sub>2</sub>            eating        do  
‘Let’s eat!’ (cf. the imperative of the first person plural in Polish *jedzmy*)
- c. Tubaaboo!    **ŋà**                    a    **faa!**  
boss            we-YE<sub>2</sub>            him    kill  
‘Boss, let us kill him’ (cf. the imperative of permission in Polish *daj dam*)
- d. Mol    **ye**    **taa**  
we-all YE<sub>2</sub>    go  
‘Let’s go’

<sup>268</sup> The English translations by means of the expression with *let* do not differentiate between these two senses. On the contrary, the Polish language possesses two grams that makes this difference explicit: the sense of an imperative of permission is overtly expressed by the locution with the verb *dać* ‘to give’, while the exhortative meaning is conveyed by the periphrasis built on the particle *niech(aj)*.

<sup>269</sup> Once more, the English translations with the auxiliary *let’s / let us* do not overtly distinguish between these two values. However, the explicit distinction can be shown in the Polish language which differentiates between the exhortative sense (in this function, the imperative of the first person plural is used) and permissive sense (in this function, the periphrasis with the verb *dać* ‘to give’ is used).

The YE<sub>2</sub> gram can also be found with the third person singular and plural. In this case, the formation very frequently introduces commands and orders, functioning as an indirect deontic-directive category of jussive.

- (6.19) a. A    **ye**    **naa!**  
           he    YE<sub>2</sub>    come  
           ‘Let him come!’ (cf. the imperative in Polish *niech / daj mu*)
- b. Ìtolu **ye**    **taa!**  
           they YE<sub>2</sub>    go  
           ‘Let them go’ (cf. the imperative in Polish *niech / daj im*)
- c. N    teerimaa    **ye**    a    **ke**    i    ye  
           my    friend    YE<sub>2</sub>    it    do    you    for  
           ‘Let my friend do it for you!’ (cf. the imperative in Polish *niech / daj mu*)

However in certain instances, rather than functioning as a deontic-directive category of a jussive, the YE<sub>2</sub> form seems to approximate an optative mood. In such cases, the locution expresses wishes, desires or hopes as for the present-future situation and not orders or suggestions directed to someone. This use has its parallels in the English construction with the verb *may* (*May you live long!* or *May God help you!*), in the Polish expressions with the particle *oby* (*Oby przyszedł!* ‘May he come!’) in contrast to the previously discussed jussive sense which can be translated with the locutions *let him* or *niech/daj mu*, in English and Polish respectively.

- (6.20) a. A    **ye**    **faa!**  
           he    YE<sub>2</sub>    be.dead  
           ‘May he die / May he be dead’ (I wish he would die; cf. the optative expression in Polish *oby umarł*)
- b. A    **ye**    **bambaŋ!**  
           he    YE<sub>2</sub>    be.strong  
           ‘May he be strong!’ (I wish him this; cf. the optative expression in Polish *oby był silny*)

Such wishes may also refer to a past state of affairs that is currently irreversible. In this use, the gram has an unreal counterfactual force:

- (6.21) A    **ye**    **naa**    nuŋ!  
           he    YE<sub>2</sub>    come    then  
           ‘May he have come then!’ (but he did not come; cf. the past optative expression in Polish *oby był przyszedł*)

The optative sense can be made overt by means of using the exclamatory expression *Alla maa* (cf. section 4.3)

- (6.22) a. **Alla maa** a **ye ke** moo bete ti  
 God MAA he YE<sub>2</sub> be person good EXIS  
 ‘By God, may he become a good person!’
- b. **Alla maa** ì ñaalu **ye finki**  
 God MAA their eyes YE<sub>2</sub> be.blind  
 ‘By God, may their eyes be blind!’

In all the uses mentioned thus far, the YE<sub>2</sub> gram offers two types of meaning. On the one hand, the locution conveys a deontic-directive sense, a suppletive (with the first and third person singular and plural)<sup>270</sup> or alternative (in the second person singular and plural) form of the imperative. On the other, it offers an optative value, common with the first and third person. Apart from these two main uses, the YE<sub>2</sub> formation may appear in another function. The YE<sub>2</sub> gram is extensively found in subordinate final clauses, introducing a broad spectrum of more specific values which can all be embraced under a single term of a purposive subjunctive: the proposition with the relevant YE<sub>2</sub> form indicates intentions, goals or desires to be accomplished. The clause to which the YE<sub>2</sub> construction belongs is usually linked to the principal clause by means of a conjunction, such as *fo* (6.23.a) and *puru* ‘in order that, so that’ (6.23.b). It should be noted that the purposive value can also be located in a past time frame (6.23.b).

- (6.23) a. Ì be Laamini daani kaŋ fo a **ye naa** jaŋ  
 they NVP Lamin ask on so.that he YE<sub>2</sub> come here  
 ‘They are asking Lamin to come here (lit. so that he would come)’
- b. Dà a faa puru **ŋà** a la buŋo **soto**  
 we.did him kill so.that we-YE<sub>2</sub> he of house have  
 ‘We killed him to have his house (lit. so that we would get)’

The purposive subjunctive value may also be found in subordinate clauses headed by the conjunction *ko* ‘that’:

- (6.24) A ye a fo n ye ko **ŋa naa**  
 he did it tell I for that I-YE<sub>2</sub> come  
 ‘He told me to come (lit. so that I would come)’

It is possible to argue that in asyndetic dependent clauses – i.e. in clauses which are headed by other main clauses but are not marked as subordinate by any conjunction – the YE<sub>2</sub> gram offers a purposive-subjunctive sense comparable to its use in overt subordinate clauses, discussed above. In such cases, the idea of goal or purpose is carried out by the YE<sub>2</sub> gram without the help of an adjacent conjunction.

- (6.25) a. Dalasi taŋ dii n na, **ŋa taa** mbuuroo saŋ na

<sup>270</sup> The use of the YE<sub>2</sub> gram after the B-Imperative can also be viewed as a suppletive imperative since the B-IMPR gram does not usually appear in a sequential position.

- dalasi ten give me to I-YE<sub>2</sub> go bread buy to  
 ‘Give me ten dalisis to go to buy the bread (lit. so that I may go to buy)’
- b. N lafita i **ye** kurutoo **kara** n ye  
 I want you YE<sub>2</sub> trousers sew me for  
 ‘I want you to sew trousers for me (lit. so that you sew)’
- c. N lafita i **ye** **kendeyaa**  
 I want you YE<sub>2</sub> be.healthy  
 ‘I want you to be healthy (lit. so that you may be healthy)’

This usage is especially common if the YE<sub>2</sub> formation is introduced by the verb *ko* ‘say’:

- (6.26) a. A ko **ŋa** n na joobaloo joo  
 he said I-YE<sub>2</sub> I of debt pay  
 ‘He said [that] I should pay my debt’
- b. A ko i **ye** taa  
 he said you YE<sub>2</sub> go  
 ‘He said [that] you should go’

One should note that when used in dependent clauses (either syndetic or asyndetic), the YE<sub>2</sub> gram is commonly found after harmonic predicates, i.e. after verbs expressing modal ideas of wishes and orders (*lafi* ‘want, wish’, *a daani* ‘ask’, *suula* ‘need’, etc.) as well as after verbs of speaking (*a fo* ‘say’). However, the YE<sub>2</sub> construction may also follow predicates that are not harmonic with subjunctive modality (e.g. *a dii* ‘give’; on the issue of harmonic and non-harmonic verbs, see Bybee, Perkins & Pagliuca 1994:212-230). It is important to observe that the use of the YE<sub>2</sub> gram – together with the SI locution – is compulsory in the subjunctive environment, especially in subordinate clauses introduced by *puru* and *fo*. Additionally, in this syntactic milieu, the YE<sub>2</sub> formation is usually void of any deontic or optative senses typically found in main clauses.

### 6.2.2 Dynamic definition

The evidence shows that the YE<sub>2</sub> gram is invariably modal. The construction offers three main values: deontic-directive, optative and subjunctive. When used in a deontic-directive function, depending on the person to whom a given sentence is addressed, it approximates a category of an imperative (with the second person), a jussive (with the third person) and a deontic exhortative (with the first person). As a deontic-directive category, the locution constitutes a suppletive paradigm of the imperative in cases where the B-Imperative is not used: in the first and third person and in the second person after the B-IMPR or the SI gram. As an optative, it can be directed to any person, introducing real factual (referring to a future time frame), real counterfactual (referring to a present time frame) and unreal counterfactual (referring to a past time frame) wishes and desires. In dependent subordinate clauses (including asyndetic ones), the YE<sub>2</sub> formation is employed with the force of a compulsory

purposive subjunctive category. In this context, it fails to convey deontic, exhortative and optative nuances, typical of the uses in main clauses.

It is clear that the semantic potential of the YE<sub>2</sub> gram principally concerns the domain of speaker-oriented modality (directive: imperative, jussive and exhortative), optative mood and subjunctive uses, which correspond to intermediate and advanced stages of a general cline to modality (at least, in the model where the extensions towards futurity are disregarded). Thus, by employing a template generated by a broad modal path (or any origin), a possible map of the senses offered by the YE<sub>2</sub> construction can be formulated in the following way:

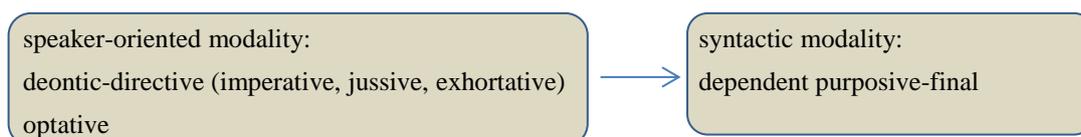


Figure 6.2: The map of the semantic potential of the YE<sub>2</sub> gram – modal cline<sup>271</sup>

The question arises as to which path leading to modality could be used in order to map the semantic potential of the YE<sub>2</sub> gram. As explained previously, modal formations develop by following two major developmental scenarios. They usually result from the genuine modal path or emerge as products of a modal contamination. Following the first possibility, a core verbal modality originates in explicit agentive modal expressions that connote the idea of ability, obligation, desire, intention or movement generating genuine modal paths (Bybee, Perkins & Pagliuca 1994:240-241). By doing so, they acquire speaker-oriented modal senses and epistemic values, giving rise to modally coloured and simple future uses. Subsequently, modal expressions spread to subordinate phrases where, functioning as subjunctives, they can survive for a longer time even if they have disappeared from the main clauses (cf. section 1.2.3.3). However, modal constructions may also have their roots in non-modal inputs, for instance in present tenses or in resultatives and perfects (Haspelmath 1998:41-45). This is the process of modal contamination which has been presented in the section dedicated to the discussion of the B-Imperative and mentioned on other occasions. As explained in detail in section 1.2.3.5, this process consists of four stages: 1) an indicative gram appears in a modal context; 2) the form, mainly used as an indicative, displays a regular modal value associated with the context in which it appears; 3) an original indicative gram is entirely identified with the modal value of the environment and no indicative uses are available; and 4) a modally contaminated gram is freed from the context which generated a given modal sense and may be employed in contexts unmarked for modality, yet conserving the already incorporated modal meaning. Among exemplary environments that set in motion the process of modal contamination of originally non-modal constructions, scholars identify hypothetical periods (protases and apodoses), broadly understood contexts of order and command (which can be marked semantically, syntactically or pragmatically), and syntactically dependent (syndetic

<sup>271</sup> It is important to emphasise that this map is based on the synchronic variation of senses. For a diachronic foundation, see further below in this section.

or asyndetic) clauses (especially, subordinate final clauses and clauses introduced by verbs such as *want*, *wish*, *order*, *say* or *think*).

As mentioned above, the subjunctive uses (developed both along the genuine modal path and modal contamination path) tend to first arise when a verb in a dependent clause follows an introductory main-clause predicate expressing the idea of desire, command, thinking, asking, and/or saying. These introductory predicates are, therefore, harmonic with the modal meaning conveyed by a dependent clause which they head. At a later evolutionary stage, subjunctives can be generalised with non-harmonic predicates, i.e. with predicates which do not force a modal interpretation, thus spreading to other types of subordinate clauses. It should also be noted that at advanced developmental stages, subjunctives fail to make any semantically transparent contribution to the dependent clause in which they stand – they rather function as highly schematic forms, compulsory in a determined syntactic environment. This means that if they derive from modal grams – themselves originated in agentive modal expressions or developed due to modal contamination – this modal value is typically absent in subjunctive uses (Bybee, Perkins & Pagliuca 1994:214, 217-218).

Given the semantic potential offered by the YE<sub>2</sub> gram as well as in light of certain diachronic and comparative facts, I will argue that the YE<sub>2</sub> formation could be mapped by means of a modal contamination path.

First, because of the semantic properties described in section 6.2.1.2, it is plausible that the YE<sub>2</sub> gram descends from a non-modal input that has been fully modalised in imperative contexts – and identified with this type of modality – giving rise to an entire deontic-directive gamut of senses (jussive and hortative) and optative senses. In the contemporary Basse Mandinka language, the YE<sub>2</sub> construction can be viewed as emancipated since it marks the modality by itself with no other overt modal markers necessary. These modal values may, in turn, have motivated the use of the YE<sub>2</sub> form in dependent syntactic environments where, nowadays, it appears both after harmonic and non-harmonic predicates. In this subordinate context, the gram is almost regularly void of its deontic, exhortative and optative nuances. In fact, in final clauses introduced by *puru* and *fo*, the use of the YE<sub>2</sub> form is compulsory. In clauses with *ko* and in asyndetic dependent clauses, the use of the YE<sub>2</sub> gram is also compulsory if the meaning to be conveyed is purposive. In this context (i.e. with *ko* and in asyndeton), it is the verbal form itself that marks the entire clause for subjunctive modality of purpose, distinguishing it from other *ko* and asyndetic clauses that introduce non-final senses. However, at a very early stage, the modal contamination could have concerned the dependent syntactic context as well, before the gram was modalised as a deontic-directive and as an optative mood in main clauses.<sup>272</sup> Overall, the semantic behaviour of the YE<sub>2</sub> form is fully consistent with the evolutionary scenario predicated by a modal contamination path.

Second, the hypothesis of the modally contaminated origin of the YE<sub>2</sub> construction is plausible because the gram offers uses that emerge in two environments typical of modal contamination, i.e. in the context of orders or commands and in subordinate clauses.

<sup>272</sup> As in many instances where the domain of modality is involved, more than one evolutionary process may have been operating. In this case, the generalisation of the deontic-directive and optative senses may have contributed to the modal contamination in dependent contexts and to the development towards the category of a subjunctive. A similar development has been posited for the Semitic modal *\*yaqtul* and the Hebrew “short” *yiqtol* (Andrason (e)).

Third, another fact that suggests the modal contamination of the YE<sub>2</sub> gram rather than an evolution along a genuine modal cline is the incompatibility of this formation with any type of agentive modal value. The YE<sub>2</sub> construction also fails to convey epistemic and future senses. These three classes of meanings (agentive, epistemic and future) regularly emerge if a gram develops along the modal cline (cf. chapter 4). Since the polysemy is a crosslinguistic norm, one would expect that at least one of these values would have been offered by the YE<sub>2</sub> formation, even on very rare occasions. The fact that this does not occur renders the mapping of the YE<sub>2</sub> gram by means of a genuine modal cline implausible.

Lastly, as will be argued in this section, the comparative and diachronic evidence does not enable us to relate the morpheme *ye* in the YE<sub>2</sub> gram to any explicitly modal input. The entity *ye* cannot be traced to a word that would convey the nuance of ability ('can', 'be able'), obligation ('must'), desire ('want') or movement ('go/come'). This makes a modal-path mapping even more unlikely.

In order to corroborate the hypothesis of modal contamination – which as explained seems to be more plausible than the theory of a genuine modal cline – one should relate the YE<sub>2</sub> gram to a non-modal input from which the formation emerged due to inferences triggered by the context. Thus, the confirmation of the proposed mapping boils down to the determination of what type of the modal contamination the YE<sub>2</sub> gram has undergone. This, in turn, requires the answer to one question: what is the origin of the YE<sub>2</sub> form and, hence, of the *ye* element?

According to one view, the entity *ye* is a copula grammaticalised from the imperative of the verb *yé* (*a je* in Mandinka) 'to see'. From copula uses, it had developed into an auxiliary in progressive and later habitual (imperfective) constructions (Creissels 1997a:12, 1997b:10). The other position argues that *ye* shares its origin with the non-verbal predicator *be* (i.e. the two forms are etymologically related) and derives from a copula of a non-verbal origin (Kastenholz 2003:37-41). A similar opinion is maintained by Tröbs (2003:3-4, 6), who defends a diachronic connection between *ye* and *be*, tracing their origin to an existential verb that has lost its verbal properties and has become defective (for a discussion of this development, see also Babaev 2011:11-12). The reconstructions proposed above are all plausible for the morpheme *ye* used as a copula and as an auxiliary element in progressive constructions. Since progressives are grams of the imperfective-path type and can develop into broad imperfectives and presents, the YE<sub>2</sub> gram in Basse Mandinka could be viewed as an example of the modal contamination of old presents. However, when undergoing the process of modalisation, old presents commonly offer epistemic and future uses, which are both absent in the case of the YE<sub>2</sub> formation. This fact would render this type of modal contamination unlikely (for a similar opinion, see Tröbs 2009:238, who regards the old-present hypothesis of the modal *ye*, and thus of the YE<sub>2</sub> gram, as speculative and unlikely).

What I suggest is that the entity *ye* in the YE<sub>2</sub> gram is diachronically related to the morpheme *ye* in the YE<sub>1</sub> form and, hence, that the two locutions derive from the same source (cf. also Creissels 1997b:20). Although there is no consensus on the origin of the *ye* in the YE<sub>1</sub> gram, most scholars argue the following: The gram derives from an expression consisting of a topicalised noun phrase accompanied by a postposition and a noun phrase, which constitutes the subject of a verb that, in turn, expresses an intransitive resulting state.

This locution was gradually reinterpreted as a transitive perfect and later as a perfect and past (cf. Bird & Kendall 1986, Creissels 1997a, 1997b and Kastenholz 2003; see section 3.2). An analogous scenario has been posited for the YE<sub>2</sub> gram. To be exact, Creissels (1997b:19-20) and Tröbs (2009:236-237) propose that the optative marker (in Creissels' terminology JE, JA, LA), and thus *ye* in the YE<sub>2</sub> gram, derives from a periphrasis that corresponds to the French expressions such as *À lui de jouer* and *À toi de trouver une solution* (Creissels (1997b:16, 20) or to the German periphrases *An/auf/durch Peter zu spielen/Geschirr zu spülen* (Tröbs 2009:237). In this original construction, the oblique noun or the pronoun was reinterpreted as the subject and the postposition as a modal marker. Accordingly, the element *ye* in the two YE constructions derives from a postposition that has been reinterpreted as a predicative TTAM marker. The syntactic schemas that lie behind the two YE constructions are thus identical. Because of a modal context in which it was employed, the postposition *ye* and the proto-YE gram acquired a modal force, thus being an exemplary case of modal contamination. When modal contexts were not involved, the postposition *ye* developed into the perfect/perfective/past following the resultative path (cf. Tröbs 2009).

In the input locution from which the YE<sub>2</sub> gram has emerged, the verbal item (that nowadays surfaces as the base) is usually reconstructed as an infinitive (cf. Creissels 1997a:16, Tröbs 2009:237). In the original source of the YE<sub>1</sub> gram, the verbal slot is claimed to have been conveyed by a verbal base that expressed a resultative proper sense, i.e. a base with a resultative value. Formally, at least in the original YE periphrases, the base and the infinitive might have been indistinguishable (cf. section 6.1 and the morphological sameness of the base and infinitive postulated at earlier diachronic stages). Consequently, not only the morphosyntactic but also lexical value of the sources of the YE<sub>1</sub> and YE<sub>2</sub> gram would be identical. Both would have developed from a periphrasis: *to* [ye] *x* [object/receptor] *y* [subject/patient] *write* [resultative/perfective base/infinitive]. However, it is not unconceivable (and in fact, typologically likely) that what nowadays appears as a base might have been in both cases an overt resultative form, perhaps a participle. In an explicit modal context, the conceptual metaphor *to him, the letter [is] written* has developed into a mood (*to him the letter should be written* > *he should write the letter*) while in a non-modal context, it developed into a perfect, perfective and past (*to him the letter is/has been written* > *he has written / wrote the letter*). The former type of development would be a case of modal contamination whereas the latter would be an example of a resultative path. Even if the original periphrases involve infinitives/bases instead of the resultative participle, the split and the development towards modality and perfect(ivity) would be analogous. An original non-modal resultative form would have developed into a perfect and a past. A morphosyntactically identical, non-modal form, which was used in a modal context, would have evolved into a mood (Tröbs 2009:237).

If the YE<sub>1</sub> and YE<sub>2</sub> constructions derive from a common ancestor (most likely a resultative proper locution) the YE<sub>2</sub> gram must be related to the resultative origin of the YE<sub>1</sub> form. The question is then how a resultative non-modal input can develop into a directive and optative form.

It is a well-known fact that resultatives or, more correctly, anterior-path grams, may evolve into moods, including directive and optative modality. First of all, anterior path

formations commonly develop into subjunctives. This usually happens in conditional protases where they may deliver real factual (present or future subjunctives), real counterfactual (past subjunctives) or unreal and counterfactual (pluperfect subjunctives). This evolution may be illustrated by the development of subjunctives in modern Romance languages, such as Portuguese, Spanish and French (see also the use of TA and YE<sub>1</sub> in conditional protases discussed in sections 3.1 and 3.2). However, anterior-path grams can also evolve into deontic-directive categories (e.g. imperative, jussive and exhortative) and optatives. From a crosslinguistic perspective, this phenomenon is relatively common. It may be illustrated by the Semitic form *yaqtul* (Akkadian *-iprus* or Arabic *yaqtul*), Semitic *qatal(a)* and the Classical (Middle) Egyptian perfective *sdm.f*, as well as by the Polish perfective past (*napisał*) and impersonal past (*napisano*) – all of the grams are original anterior-path formations (resultatives, perfects and/or past) that have also acquired modal values and function as subjunctives, imperatives, jussives, hortatives and optatives.

I will explain in detail the case of the Semitic *yaqtul* formation(s), which can be used as a typological parallel of the relations between the YE<sub>1</sub> and YE<sub>2</sub> grams. In the Semitic family, there are two grams referred to as short *yaqtul* forms. These formations are morphologically identical. However, one of them is an advanced resultative-path gram (with most of its semantic potential organised along the anterior cline) while the other is a modal-contamination gram (typically used as a jussive and/or optative, as well as, in some languages, as a protatic and/or purposive subjunctive). It has been argued that the two grams derived from a common ancestor, i.e. from a resultative proper input. Although genetically related, the two constructions have split due to their profound grammaticalisation. This split is best viewed in Biblical Hebrew where the two grams became entirely independent formations, i.e. *way-yiqtol* (a resultative-path *yaqtul* was additionally marked by the prefix *wa(y)-*: וַיַּעַשׂ אֱלֹהִים אֶת-הַרְקִיעַ וַיַּבְדֵּל בֵּין הַמַּיִם: ‘So God made the dome and separated the waters’; Gen 1.7) and jussive *yiqtol* (a modal-contamination-path *yaqtul*: וַיֹּאמֶר אֱלֹהִים יְהִי אוֹר: ‘And God said: let it be light’; Gen 1.3). In Arabic, however, the two grams exhibit the same morphology, i.e. *yaqtul*, as they did in Proto-Semitic; for details, see Andrason 2011b, 2012f, 2013a, 2013g; see also Smith 1991, Kienast 2001, Lipiński 2001 and Kouwenberg 2010). They are de facto treated as a single category, but with two sets of meanings: modal (أذهب للسوق ‘Let me go to the market!’ and لا تكتب ‘Don’t write’; Haywood & Nahmad 1965:128; see also Wright 1896-1898/2005:41) and indicative, mostly perfect and past (ولم يكن قد كتب إليها منذ ‘I have not written to him for a long time’ or لم لعب ابدا كرة القدم ‘I have never played football’; Danecki 1994:161, Andrason 2011b, 2012f).

A similar schizoid nature of original resultative-path grams can be found in Polish. Polish possesses a formation – the “*l*-past” *napisał* – that, in its most typical use, functions as a present perfect and definite past (*Cezar podbił Galię w 58 p.n.e* ‘Caesar **conquered** Gaul in 58 BCE’; Andrason 2013g:26). However, the same construction may be employed with a deontic force introducing commands (*Poszedł stąd!* ‘**Go away** (from here)!’; Andrason 2013g:26). The same behaviour can be observed in the case of the impersonal past formed by means of the suffix *-no* (which derives from a resultative participle; cf. section 3.1.2): *Zamordowano go w 1945* ‘He was murdered in 1945’ versus *Zrobiono mi to przed 5!* ‘Do it by 5 pm!’ (Andrason 2013g:27).

The relation between the YE<sub>1</sub> and YE<sub>2</sub> grams could be regarded a typological equivalent of the fate of the above-mentioned grams in the Semitic family and in Polish, being an example of a bifurcated diachrony. A resultative non-modal input developed following two main evolutionary scenarios. In accordance with the “regular” trajectory of resultatives – i.e. by following the anterior and simultaneous path – it has developed into a perfect, a perfective, a past and a stative. However, due to a modal use in the explicitly modal context of orders and wishes, the modal sense – initially contextually induced – has been generalised and stabilised. With time, the two contextually conditioned variants evolved separately, splitting the original gram into two independent categories: one of a resultative-path type (YE<sub>1</sub>)<sup>273</sup> and the other of a modal-contamination-path type (YE<sub>2</sub>). This proposal would be consistent with the semantic potential of the YE<sub>2</sub> gram and its morphology. That is to say, the formation offers directive and optative uses but no agentive modal, epistemic and future senses. It would also explain why the YE<sub>2</sub> gram is morphologically undistinguishable from the YE<sub>1</sub> form, a resultative-path gram (cf. a similar phenomenon in Semitic and Polish).

If the YE<sub>1</sub> and YE<sub>2</sub> grams are genetically related and the YE<sub>2</sub> form corresponds to a modal contamination of the resultative input, one additional question must be answered. Why can the YE<sub>2</sub> construction be intransitive while the YE<sub>1</sub> gram is exclusively transitive? This may be explained by taking into consideration the relation between the YE<sub>1</sub> form and TA locution. It is likely that at the beginning, the YE<sub>1</sub> gram indicated the receptor or goal of the action that was portrayed as a topicalised object. This was subsequently reanalysed as a subject, while the subject (patient) of the verbal clause was reinterpreted as the object. This is a common typological scenario for resultative expressions developing into perfects. At this initial stage, the YE<sub>1</sub> form would differ from the TA gram by the fact that the former could express both the receptor/goal and the patient of the action (something like *for him it (is) written*) while with the latter, it only expressed the patient (*it (is) written*). Thus, the two constructions could have been in a complementary distribution: if the receptor/goal was necessary to be expressed, the YE<sub>1</sub> gram was used. In a contrary case, the TA form could be used. Later, this contrast and distribution have been reanalysed as transitive versus intransitive. By doing so, the expansion of the YE<sub>1</sub> locution to intransitive uses (a construction such as *\*\*a ye naa* with the meaning ‘he has come/came’) has been “blocked” by the TA gram which served this purpose. However, in modal contexts of orders and wishes, where the YE<sub>2</sub> had developed more freely, no such constraint ever existed. Consequently, the transitive pattern (directly derivable from the resultative input) has been extended by analogy with the valency principle of the Mandinka language: if the object is not expressed the construction is intransitive.

It is also conceivable that the YE<sub>2</sub> and YE<sub>1</sub> grams derive from two originally unrelated inputs. In this case, rather than a diachronic split of a single category into two constructions, one would witness the opposite, i.e. the merger of two categories – at the beginning possibly with a distinct morphology and/or syntax – into one formation (as already mentioned this type of development happened in Biblical Hebrew and in Old Polish). However, while bifurcation is typologically common, a merger is less so, as it greatly

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<sup>273</sup> The YE<sub>1</sub> gram of the resultative path has also undergone its own modal contamination in conditional protases (cf. section 3.2.2).

depends on random (from the paths' perspective) phonological and morphological changes.<sup>274</sup> As the hypothesis of two sources is extremely speculative while that of a shared source (or at least partially shared) is corroborated by at least some pieces of evidence, I consider the latter significantly more plausible.

As a final point of the discussion of the YE<sub>2</sub> gram, I will consider some comparative evidence. In Manding, the *ye*-type of modal grams is found in Maukakan, Finangakan, Korokan (see the “projective” *yá*: *É yá n zòmì* ‘Il faut que tu me previennes’ and *Ála yá dén` bálo* ‘May God make the child live’; Creissels 1987/1988), Wojenekakan, Bodugukakan, Folokakan, Gbelebankakan, Tudugukakan, Vandugukakan, Nɔwɔlokakan, Sienkokokan, Worodugukan, Kanikakan, Karanjankan, Siakakan, Nigbikakan, Jula of Kong, Jula Véhiculaire (Subjunctive *yè* + verb; Braconnier 1991), Manyá, Maninka and Niokolo Maninka (Tröbs 2009:232-234). For instance, in Maninka of Niokolo, the element *ye* (homonymous with the perfect(ive)-stative marker *ye*) is used as an affirmative subjunctive conveying a deontic-direct or optative value: *Á baabá ye náa!* ‘Let him enter’ or *Ñij sunkutúnj ñe taya!* ‘Let this girl leave / May this girl leave’ (Creissels 2013b:42).

In some dialects, a morpheme with the vowel *a* (either *a* or *ya*) is used. The variety *a* occurs in Tenegakan, Maukakan, Baralakan, Worodugukan, Kanikakan, Karanjankan, Nigdbikakan (Tröbs 2009:232-233; cf. also the use of *ɲa* in (Basse) Mandinka and in Maninka of Niokolo). The variety *ya* appears in Koyagakan (*A ja tya* ‘May he leave, may he go’; Creissels 1997b:5), Korokan, Sagakakan and Jula of Kong (Tröbs 2009:233-234).<sup>275</sup>

It should be noted that in various Manding dialects, optative or subjunctive nuances are not expressed by a type of *ye* morpheme but rather by a *ka*-type predicative marker. This situation appears in Bambara (*ká/kà*), Kita Maninka (*ká*), Mɛɛka (*ká*), Kagoro (*ká/kà*) and Xasonka (*xà*; Tröbs 2009:233-234; see also Keïta 1987:69-70, Creissels 1986 and Vydrin 2001; observe that in Yalunka the “projective” marker *qá* is used).<sup>276</sup> According to Tröbs (2009:235-236), the *ka*-type and *a*-type formations (but not the *ya*-type) are related (cf. also Creissels 1982:13). Derive (1990:24) proposes that the *ya*-type is a result of the fusion of the *ye*- and *a*-types.

For example, in Bambara, deontic-directive and subjunctive meanings are regularly expressed by the construction composed of the morpheme *ká/kà*. This gram is used both in main and subordinate (dependent) clauses and with a similar range of senses to the YE<sub>2</sub> gram of Basse Mandinka: *Ôn bé à fɛ̀ kà ò fò áw yé á ká ò fàamu* ‘I will tell you this so that you understand’ (Dumestre 1979:13), *Û ká dòn* ‘Let them enter’, *À ká sùgi* ‘Let him sit down’, *Dùgu-tigi kó bée ká bó* ‘The village chief told all the people to leave [that they leave]’ (Koné 1984:17 and Blecke 1988/2004:19, 41, 64-66). As far as the element *yé* is concerned, apart from being employed in Bambara in the transitive perfective/past construction (a cognate of the YE<sub>1</sub> gram in Basse; cf. section 3.2), it is commonly used as a predicative marker in

<sup>274</sup> Of course, these changes are not random *sensu stricto*.

<sup>275</sup> Some dialects (e.g. Maukakan, Worodugukan, Kanikakan, Karanjankan and Nigdbikakan) exhibit two alternating morphemes: *ye* and *a*. The former appears with pronouns. The latter is found with nouns (Tröbs 2009:232-235).

<sup>276</sup> In Lele, the optative is expressed by means of the predicative marker *ní*: *í ní dàwa sàwa bi* ‘prends trois houé’ (Vydrin 2009b:47). In Vai, the sequence *ì* + verb stem + low tone is used as a hortative (a formally identical to the habitual-incompletive form; Tröbs 2014).

sentences such as *Madu yé dùgu-tigi yé* ‘Madu is the village chief’ (Blecke 1988/2004:43, 70). One should note that the morpheme *yé* also appears in the imperative, where it marks the form for plural: *á yé nà yàn* ‘Come here!’ (Blecke 1988/2004:41) or *á yé í jò* ‘Wait!’ (Blecke 1988/2004:36; see also Houis 1981). The predicative marker *yé* is also used in the imperative plural in Bozo (Lauschitzky 2007:39; see section 6.1.2).

To conclude, given the semantic potential of the  $YE_2$  gram and its state of modalisation, it is possible to posit the following wave model of this construction. If the horizontal  $x$ -axis is organised along the four stages of modal contamination, the  $YE_2$  form mainly corresponds to the third stage of contamination and possibly, to a much lesser degree, to the fourth stage. The  $YE_2$  gram has been fully modalised in deontic and speaker-oriented uses as well as in purposive clauses introduced by *puru* and *fo* (which might also have arisen from imperative, jussive, exhortative and optative senses). However, it is conceivable that uses after the verb *ko* ‘say’ and the conjunction *ko* ‘that’ correspond to a partial emancipation from an entirely harmonic purposive context (i.e. with the conjunctions *puru* and *fo*) to a non-harmonic environment.<sup>277</sup>

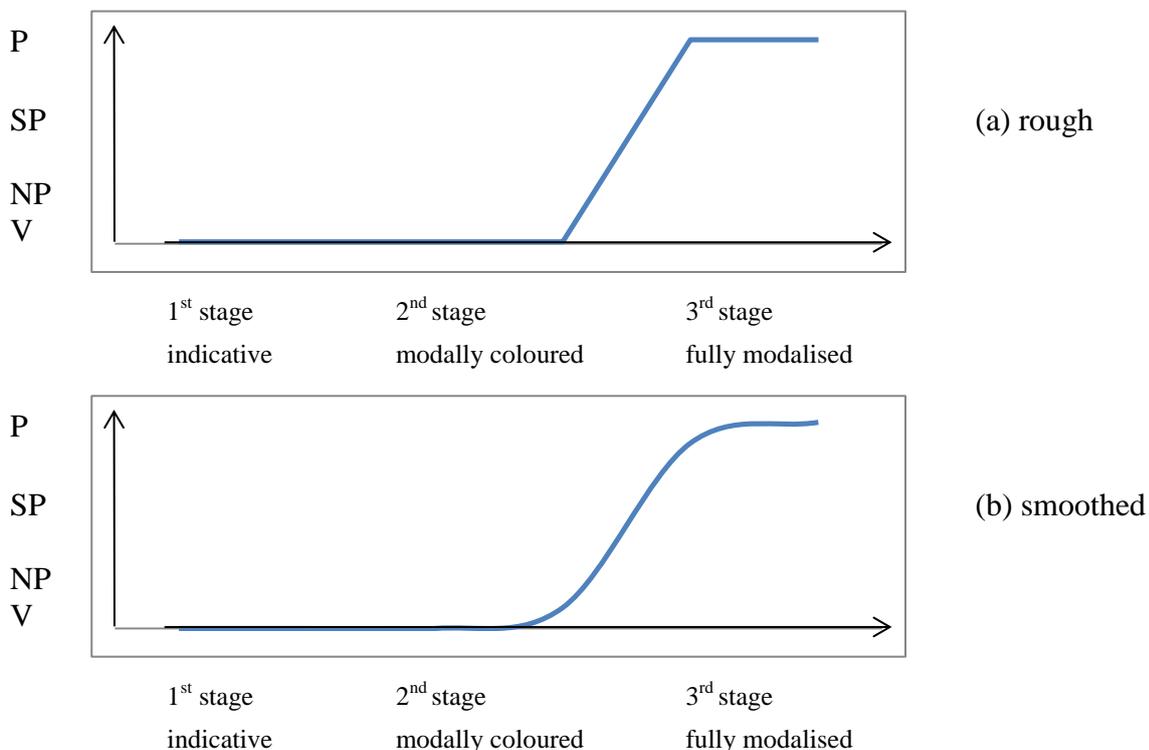


Figure 6.3: The wave model of the  $YE_2$  gram – modal contamination cline

### 6.3 Other modal-contamination grams

Apart from the B-IMPR and  $YE_2$  grams, whose semantic potentials are entirely determined by the modal-contamination cline, there are various constructions in Basse Mandinka that, albeit being mainly networked by other paths, also make use of the trajectory of modal

<sup>277</sup> Once more for the sake of simplicity and due to the difficulty of interpreting certain evidence, the fourth stage of modal contamination has been disregarded in this representation (cf. sections 6.1 and 6.4).

contamination. Such locutions are: the KA, SI, TA, YE<sub>1</sub>, LA and NAA LA forms. All of these grams have previously been studied in detail and the role of the modal contamination in their respective mappings explained carefully. In this section, I will recall the most relevant information concerning the modal contamination path in the maps of these formations. In this manner, it will be possible to accommodate all of them on the modal-contamination stream (cf. section 6.4).

The KA form is a semi-advanced imperfective-path gram (cf. section 2.4). However, on very sporadic occasions, this locution appears with a modal force (similar to the category of a subjunctive) in certain subordinate clauses: final-purposive (*fo*), temporal (*jannij*), and comparative (*ko*) clauses (cf. section 2.4.1.2). This use is extremely rare and in some cases a non-modal (progressive and/or habitual) interpretation is also possible. This corresponds to the initial stage of modal contamination, where a non-modal gram is sometimes used in an explicit modal environment, receiving possible, although not entirely compulsory, modal interpretation. To conclude, the KA formation is principally an indicative imperfective-path gram. Only under well-determined conditions and very infrequently, it offers modal shades of meaning, which themselves still seem to be optional.

The SI construction has been defined as a highly advanced imperfective-path gram – an old present. The most important part of its semantic potential is related to modality (cf. section 2.5). Even though the deeply modal character of the SI gram stems from meaning extensions available on the imperfective path (e.g. the modal path of habituais), it can also be a result of modal contamination. As explained in section 2.5.2, both processes jointly collaborate in intensifying the modal core of the SI formation, as the two of them are related to semantic domains of modality. Since more than one path collaborate in the transformation of the SI gram into a mood, it is difficult to determine which sense has emerged on which path. It is more likely that various domains have been developed by following meaning extensions available along more than one cline.

Nevertheless, the SI construction does offer modal nuances that typically emerge due to modal contamination: subjunctive uses in subordinate final and temporal clauses, real factual and real/unreal counterfactual senses in conditional apodoses, and imperative values available in the context of commands and orders. All such environments constitute exemplary milieus where old presents develop into moods and all of them are also typical of the SI gram. Since the modal character of the SI gram is clearly dominant and old indicative senses located on the imperfective-path are extremely rare, it is possible to argue that the modalisation of this formation has almost concluded – the SI construction has been fully modalised in contexts typical of modal contamination. As a result, the SI gram can be classified as mainly located in the third stage of modal contamination, where modal senses are the most prototypical although non-modal uses are still, even though infrequently, found (for details, see section 2.5).<sup>278</sup>

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<sup>278</sup> However, the modal type of the SI construction can also be found in “neutral” contexts – distinct from the environments mentioned above – where it is the verbal form itself that constitutes the primary means of conveying a modal nuance. This could be a testimony of a further progression on the modal contamination cline, i.e. towards the fourth stage of emancipation. Observe that the SI gram may also have emerged due to a genuine modal cline (cf. section 4.4).

The TA gram is a relatively advanced resultative-path gram (cf. section 3.1). However, certain senses offered by this form are products of modal contamination. These values have arisen in one of the most typical contexts for modal contamination, i.e. in conditional protases. In other words, the TA construction is an example of a semantic contamination of the resultative input – which has otherwise evolved along the resultative path – imposed by the modal context of conditional protases. In accordance with typological principles, a present and/or present-perfect sense of the indicative TA form, when adapted to a protatic context, has been reinterpreted as real factual modality (akin to a future). The past type of the indicative TA gram has been reshaped in conditional protases as the expression of real counterfactuality, while its pluperfect variety has been reanalysed as unreal counterfactuality. Although the TA gram is predominantly indicative and its modal readings are restricted to explicit modal environments (i.e. to the conditional protases), it is clear that in this context, the TA form has been fully modalised – in protases with *nij*, the senses of factual or counterfactual modality have practically become compulsory and non-modal readings are no longer possible. Consequently, the process of modal contamination can be viewed as located in its intermediate second stage, where the gram, which otherwise is typically employed as an indicative, offers an evident and obligatory modal force in certain contexts marked for modality. The contextually induced modal value is relatively common and compulsory.

The modal values of the YE<sub>1</sub> form have been mapped in an analogous manner as was the case with the TA gram. The YE<sub>1</sub> construction is a relatively advanced resultative-path gram. The modal shades of meaning offered by the YE<sub>1</sub> gram have been developed in an explicit modal context, i.e. in conditional protases introduced by *nij*. The non-past-time YE<sub>1</sub> form has been reinterpreted as an expression of real factual modality; the simple and durative past YE<sub>1</sub> gram has given rise to a counterfactual real sense; and the pluperfect type of the YE<sub>1</sub> gram has prompted a counterfactual unreal value. Similarly to the TA formation, the modal senses of the YE<sub>1</sub> gram are limited to the explicitly modal milieu and, thus, fail to appear in environments that are not overtly marked for modality. However, in the modal contexts of protases, the YE<sub>1</sub> form is obligatorily modal, while non-modal readings are virtually impossible. Thus, although the process of modal contamination has not concluded yet and the form is mainly indicative, it is relatively well-marked – modal readings are quite frequent and, in the contexts where they arise, compulsory. This corresponds to the intermediate or the second phase of modal contamination (for detail, see section 3.2).

The LA gram has been defined as a future-path formation. In effect, its entire semantic potential can be explained by means of a future path. However, the LA form offers regular real and unreal counterfactual modal readings in conditional apodoses (functioning as a present conditional and a past conditional) and possible modal senses (real factual and/or real counterfactual) in subordinate *jannij* clauses (approximating the category of a subjunctive).<sup>279</sup> By doing so, the gram could also be an example of modal contamination that is imposed by the explicit modal environment: modal apodoses and subordinate temporal clauses. As explained, both contexts are typical environments where modal contamination occurs. However, since futures – in particular futures of modal origin such as the LA

<sup>279</sup> The real factual senses found in conditional apodoses are equivalent to the value of a future.

construction – are always somehow related to the idea of modality, the process of modal contamination of a future-path gram, on the one hand, and the regular meaning extension to ideas of modality stimulated by its own “genetic” modal character, on the other hand, can be viewed as conflating. Both jointly strengthen the modal string in the meaning of a future-path gram such as the LA formation. In other words, even though modal senses of real factuality and real/unreal counterfactuality provided by the LA form in conditional apodoses and subordinate clauses can be explained as having arisen due to modal contamination, all of them may also be understood as reflecting the last stage of future tenses, where such grams evolve into syntactic moods. If the LA gram is to be accommodated on the modal contamination path, it could correspond to the second stage, where the non-modal gram (in this case a future-path form)<sup>280</sup> is regularly modal in an explicit modal environment. Such modal readings are both frequent and obligatory (cf. section 5.1).

Lastly, the NAA LA gram offers modal values that can be explained as a regular development of a future in the past and future perfect in the past, to conditionals (both present and past) and as well as an example of modal contamination. Although, the categories of a future in the past and future perfect in the past can *per se* develop into conditionals, in Basse Mandinka, the conditional nuances offered by the NAA LA locution are typical in apodoses and in certain subordinate clauses, which constitute exemplary contexts of modal contamination. As a result, the two processes seem to be related, motivating together the progression of a future-path gram – such as the NAA LA formation – towards the domain of modality (in this case towards the category of subjunctives and conditionals). In dynamic terms, the NAA LA gram can be viewed – just like the LA form – as matching the second stage of modal contamination.

#### 6.4 The modal contamination stream

In this chapter, I have discussed grams whose entire semantic potential (cf. the B-IMPR and YE<sub>2</sub> forms) or a part of it (cf. the KA, SI, TA, YE<sub>1</sub>, LA and NAA LA forms) can be mapped by means of the modal contamination path. It should be emphasised that the modal contamination cline is quite distinct from the other paths. It does not offer a model of a unique, unidirectional, entirely repeatable semantic development in the way the other clines do. In contrast to the other paths, it cannot be used to network senses into a map. The modal contamination path rather encompasses all possible evolutions during which non-modal inputs develop into moods due to certain contextual uses. By doing so, it can map any type of semantic potential and in any imaginable semantic order. It can also lead to different outputs, for example to subjunctives (in particular, in protases and other subordinate clauses), conditionals (especially in apodoses), imperatives, optatives, directives, etc. To conclude, what the modal contamination path does is the following: it explains the relation of the modal component of a gram to its non-modal uses and/or non-modal origin.

This means that semantic potentials offered by grams which arose due to the modal contamination cannot be compared on the stream – what is compared is the overall relation of

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<sup>280</sup> As emphasised on various occasions, futures are typically related to the domain of modality. Thus, an indicative character of the LA gram constitutes a certain degree of approximation.

the gram to a broadly understood domain of modality. Inversely, although formations classified as modal-cline grams may provide uses which cannot be mapped as consecutive stages on a single semantic path, the macroscopic model of modal contamination enables us to accommodate all of them on a single stream. In this manner grams of different origin and completely distinct semantic properties can be compared and interrelated as waves.

First, by using the evolutionary template of modal contamination as a mechanism that explains the entire, uniquely modal, semantic potential of a gram, the meanings of the B-IMPR and YE<sub>2</sub> constructions can be elucidated. The former corresponds to the modal contamination of an infinitival base in the context of direct orders, while the latter is an example of the modalisation of a resultative input in deontic-directive environments (both direct and indirect) as well as in final clauses.<sup>281</sup> Second, the modal contamination cline can be employed to relate the modal values offered by, at least originally, indicative grams – such as the KA and SI forms (imperfective-path grams) as well as the TA and YE<sub>1</sub> (resultative-path grams) – to the non-modal parts, either marginal or dominant, of their semantic potentials. To be exact, modal uses of the KA form stem from a subtle and optional modal contamination of a semi-advanced (relatively young) present in subordinate (final and temporal) clauses. The subjunctive values offered by the SI form in subordinate clauses (final-purposive and temporal clauses) and the conditional senses found in apodoses have emerged as a result of the modal contamination of an old present.<sup>282</sup> The uses of the YE<sub>1</sub> and TA formations in conditional protases are examples of a modal contamination of a resultative input. Third, the modal contamination cline also enables us to justify determined senses offered by grams that are inherently related to the idea of modality (future-path grams: LA and NAA LA). To be precise, the conditional values of the LA and NAA LA constructions have been explained as having emerged due to the modal contamination activated in apodoses besides constituting a regular meaning extension of futures to modality.

Consequently, although all the above-mentioned grams are related to the phenomenon of modal contamination, from a dynamic grammaticalisation perspective, they are all clearly distinct. They derive from entirely different sources and have been modally contaminated in distinct environments. These two factors impose a specific type of the semantic development exhibited by each formation. As explained above, the B-IMPR gram has emerged from an infinitive-base used in directive contexts. The YE<sub>2</sub> gram is a resultative-path gram modalised in directive (both direct and indirect) and dependent environments. The KA locution is an imperfective-path gram slightly modally contaminated in subordinate clauses. The SI form is an imperfective-path gram profoundly modalised in subordinate clauses and apodoses, as well as in directive (both direct and indirect) milieus. The TA and YE<sub>1</sub> constructions are resultative-path grams modally coloured in conditional protases.<sup>283</sup> Lastly, the LA and NAA LA formations are future-path (and/or future-perfect-path) grams whose contamination has principally occurred in conditional apodoses.

<sup>281</sup> As explained in section 6.2, it is also possible that the subjunctive uses correspond to meaning extension arising from deontic-directive and optative values found in main clauses (cf. Figure 6.2).

<sup>282</sup> As already explained in sections 2.5 and 4.4, since the semantic potential of this gram is nowadays profoundly modal, several of its modal senses may in fact be mapped by means of a genuine modal path, viz. the ability or movement type.

<sup>283</sup> Observe that in Bambara their modalisation also concerns the exclamatory environment of *Alla maa!*

The modal contamination path of a coarse-grained structure enables us to dynamically compare all these grams even though their modal semantic potential is dissimilar and all of them derive from entirely different sources:

- a) The B-IMPR is defined as an advanced – fully modalised – gram of a modal contamination path, corresponding to the third stage of this evolutionary scenario: the non-modal form (base or infinitive) has been fully contaminated in an explicit modal context of direct commands. In this environment, only the modal force is available nowadays. In other environments, the verbal base has acquired different properties and developed into an infinitive by incorporating the entities *la* and/or *ka*. As a result, the original form has split into two or more grams: a modal one (B-IMPF) and non-modal ones (base and infinitive).
- b) In a similar vein, the YE<sub>2</sub> gram is a deeply modalised gram matching the third developmental phase on the modal contamination cline. Namely, in the context of direct and indirect commands and/or wishes, as well as in dependent clauses (final and temporal), a non-modal input has fully been identified with the idea of modality, giving rise to deontic-directive, optative and subjunctive senses. In such modal environments (including the subordinate clauses), the use of the gram is obligatory. In fact, just like the B-IMPF gram, the YE<sub>2</sub> construction is the form that marks a sentence overtly for modality.
- c) The SI form – if it is a descendant of an old present – corresponds to the third stage of the modal contamination. Modal senses are the most prototypical in the semantic potential of the gram, although non-modal uses are still (very infrequently) found. In modal contexts (especially, in subordinate and dependent clauses), the use of the formation is compulsory. In environments that are unmarked for modality, the SI gram is the form that introduces the modal nuance overtly to the sentence. However, given that the SI form does preserve indicative values, it can be viewed as slightly less advanced than the B-IMPR and YE<sub>2</sub> constructions.
- d) The TA and YE<sub>1</sub> grams can both be defined as matching the second phase of the modal contamination cline: the gram, which otherwise is typically employed as an indicative, offers a regular and obligatory modal force in a context clearly marked for modality. In such an environment, non-modal readings are usually impossible. In general, although modal uses play a less important role in the overall semantic potential of the grams, they are by no means rare or exceptional.
- e) The LA and NAA LA formation can likewise be viewed as grams of the second stage of modal contamination. While the modalisation of the TA and YE<sub>1</sub> locutions applies to their use in conditional protases, the contamination of the LA and NAA LA formations have taken place in apodoses. In these contexts, which are relatively frequent, the modal reading of the two constructions is obligatory. One should again note that the LA and NAA LA constructions – being future-path grams – are inherently related to the modal domain. Thus, their modal values arguably arising from the modal contamination may also have been products of regular meaning extensions available along the future cline.

- f) Finally, the KA construction can be defined as a gram of the first stage of modal contamination where a non-modal form can sometimes be used in a modal environment, receiving a possible, but not obligatory, modal interpretation.

This information enables us to design a dynamic representation of the modal-contamination stream with three consecutive waves. The first and oldest wave carries three grams: the B-IMPR, YE<sub>2</sub> and SI forms. It has reached the advanced third sections of the stream. The three constructions coexist on the wave mainly because they relate to different semantic spheres of modality. The B-IMPR form concerns direct orders, the YE<sub>2</sub> gram involves indirect orders or direct sequential orders as well as wishes (optative), and the SI locution mainly relates to apodotic conditionals (as well as epistemic uses, e.g. possibility, probability and necessity, which however are not in principle related to the modal contamination treated here).<sup>284</sup> However, in the area of subjunctive modality (especially in final and temporal clauses), the YE<sub>2</sub> and SI grams overlap, exhibiting the same force. Additionally, the SI construction overlaps with the B-IMPR and YE<sub>2</sub> forms in the domain of directive-deontic modality because, just like the B-IMPR gram, it can express direct non-sequential orders and, just like the YE<sub>2</sub> gram, it can introduce indirect orders. The second wave transports the TA, YE<sub>1</sub>, LA and NAA LA grams and reaches the second region of the stream. Once more, the grams specialise in specific types of modality. The TA and YE<sub>1</sub> forms are protatic moods (intransitive and transitive respectively), while the NAA and NAA LA locutions correspond to apodotic moods (the latter is much less common and is usually limited to unreal counterfactuality). It should be noted that in the apodotic conditional function, the LA gram overlap with the SI form. Lastly, the most recent wave brings towards modalisation only one form, i.e. the KA gram. Being historically the youngest wave, it is still confined to the first stage on the stream. The relation of the three consecutive waves can be schematised in the following manner:

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<sup>284</sup> These values may correspond to regular modal extensions along the ability path of habituais. It should be noted that in the domains of epistemic modality, possibility and probability, the SI gram partially overlaps with the NOO and ÑANTA formations.

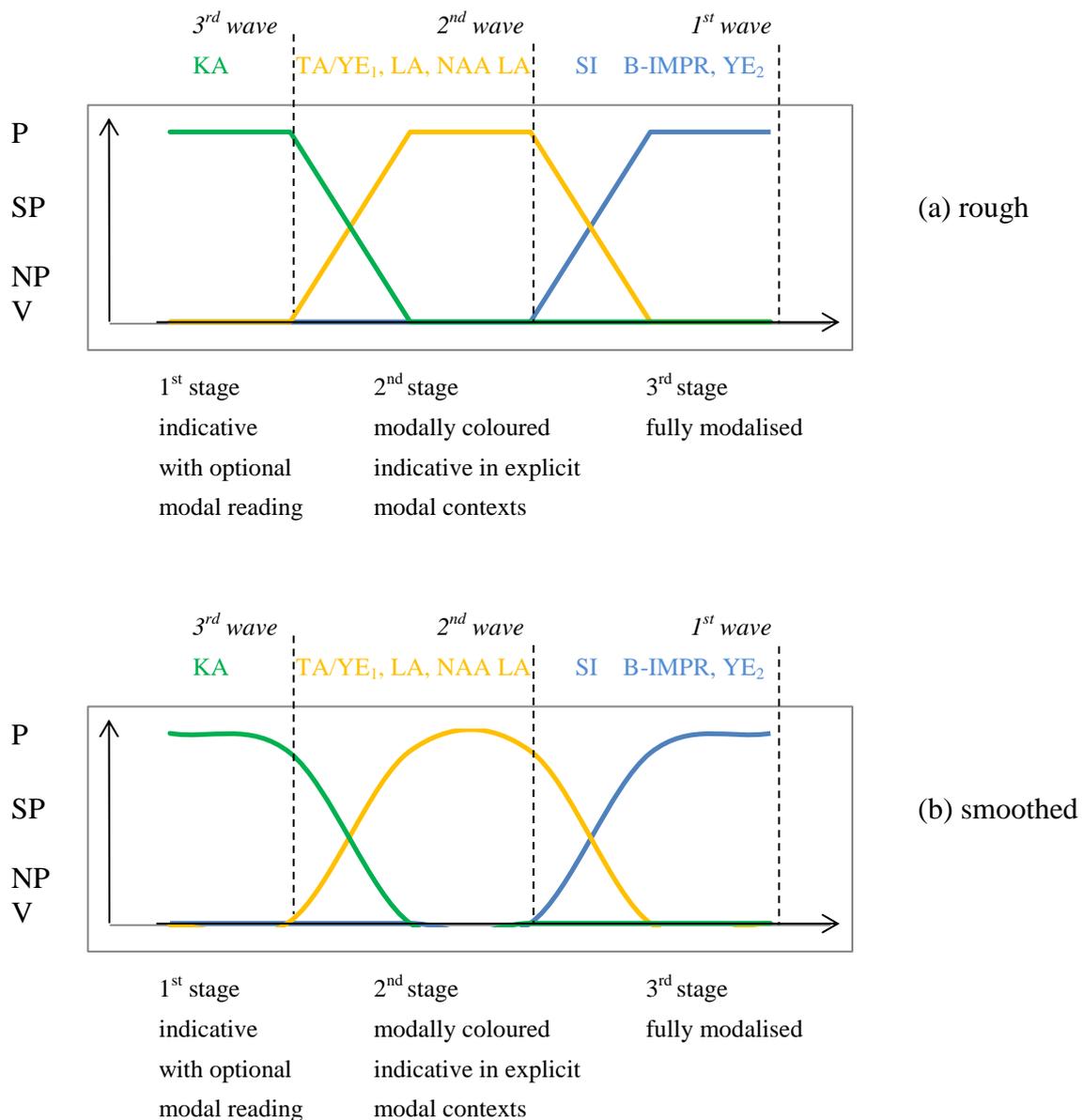


Figure 6.4: Travel-ness of the modal-contamination path

The representation developed above (based on the modal contamination path) suggests the type of cognitive associations which may arise for each set of the constructions. The grams of the first wave are associated with the meta-domain of mood (third stage). The formations of the second wave are viewed as indicatives with important modal uses (second stage). The only construction of the third wave is equalled with the indicative (first stage):

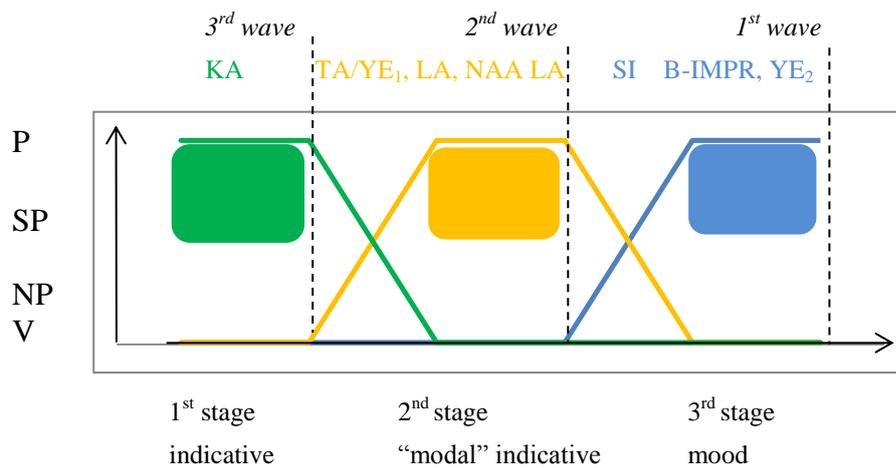


Figure 6.5: Prototypicality associations of the modal-contamination-path grams

At a more fine-grained level, the second and third waves can be divided into more detailed undulations, each typical of a determined modal domain associated with a given gram. The B-Imperative is associated with a non-sequential directive (imperative), the  $YE_2$  construction with an indirect and a direct-sequential directive (sequential imperative, jussive and exhortative) and an optative, and the LA form (if limited to modal uses) with an apodotic conditional (just like the NAA LA gram, which is however very infrequent). The prototypicality association of the SI construction is more complex. The form is principally identified with the area of speaker-oriented modality (direct-non-sequential and indirect-non-sequential directives) and the modal future (cf. sections 4.5 and 5.3). Accordingly, it overlaps and interacts with the  $YE_2$  and LA constructions. To be exact, although the SI and LA grams both express the idea of futurity, the modal future associations of the SI gram are dominant, thus contrasting with the LA form – the SI gram is viewed as modal, while the LA construction is perceived as a more “objective” (less modally coloured) future. Furthermore, even though the SI and  $YE_2$  forms are viewed as directives, the SI construction is typically non-sequential, in contrast to the  $YE_2$  gram, a more sequential form.

## CHAPTER SEVEN

## CONCLUSION

## 7. The system

The present chapter constitutes the final stage of the research and provides the most macroscopic level of analysis. After recapitulating the principal results of the study dedicated to the individual grams – themselves defined by their internal behaviour (section 7.1.1) or by their situation in the immediate context (section 7.1.2) – the holistic model of the verbal system of Basse Mandinka will be designed in terms of an ocean of streams (section 7.2). As will be evident from the subsequent discussion, this model is complex in the sense of complexity theory. On the one hand, in this representation, the Basse Mandinka verbal system exhibits properties typical of complex organisations found in the physical universe (section 7.3.1). On the other hand, the model possesses itself meta-traits characteristic of scientific representations developed for complex systems (section 7.3.2). Accordingly, by complying with the theoretical treatment of real-world systems defended by complexity science, the model will be demonstrated to defy the structuralist, modernistic representations, traditionally practised in grammatical studies.

## 7.1 The main results of the study

## 7.1.1 A gram as a wave on a stream – the gram's topology

If we analyse the Basse Mandinka verbal system from the most macroscopic perspective, the evidence provided in the previous chapter enables us to represent it as a composition of five major streams: the imperfective stream, the resultative stream, the modal stream, the future stream and the modal contamination stream. Each stream hosts a certain number of grams that, given their internal properties (i.e. qualitative and quantitative maps), have been represented as waves travelling along a shared evolutionary channel. In this manner, the underlying internal formative characteristics of a gram have enabled us to provide a synchronic definition of a given construction and determine its position on the stream. To put it differently, the microscopic properties offered by a gram on individual occasions have been used in order to deliver its macroscopic classification in terms of a wave positioned on a channel.

The imperfective stream hosts five formations that are grouped into three consecutive waves. The first wave carries the SI form. The overall topology and the prototypicality peak of this wave are the most advanced, having practically abandoned the genuine imperfective path and travelled towards further extensions such as modality and futurity. The second wave or the KA form produces a less advanced map and prototypicality peak, as it mainly corresponds to the intermediate section of the imperfective cline, in particular habituality, with only marginal modal extensions. The third wave is shared by three forms, i.e. the KAI, NomKAI and NomLA constructions. The topologies and prototypicality peaks of these

grams are non-advanced, being located at the initial sections of the channel, i.e. in the area of simultaneity and progressivity. The synchronic differences between all the grams of the imperfective stream stem from their different historical ages: the gram of the first wave is the oldest, while the grams of the third wave are the youngest, with the gram of the second wave being of intermediate maturity (for detail, see section 2.6).

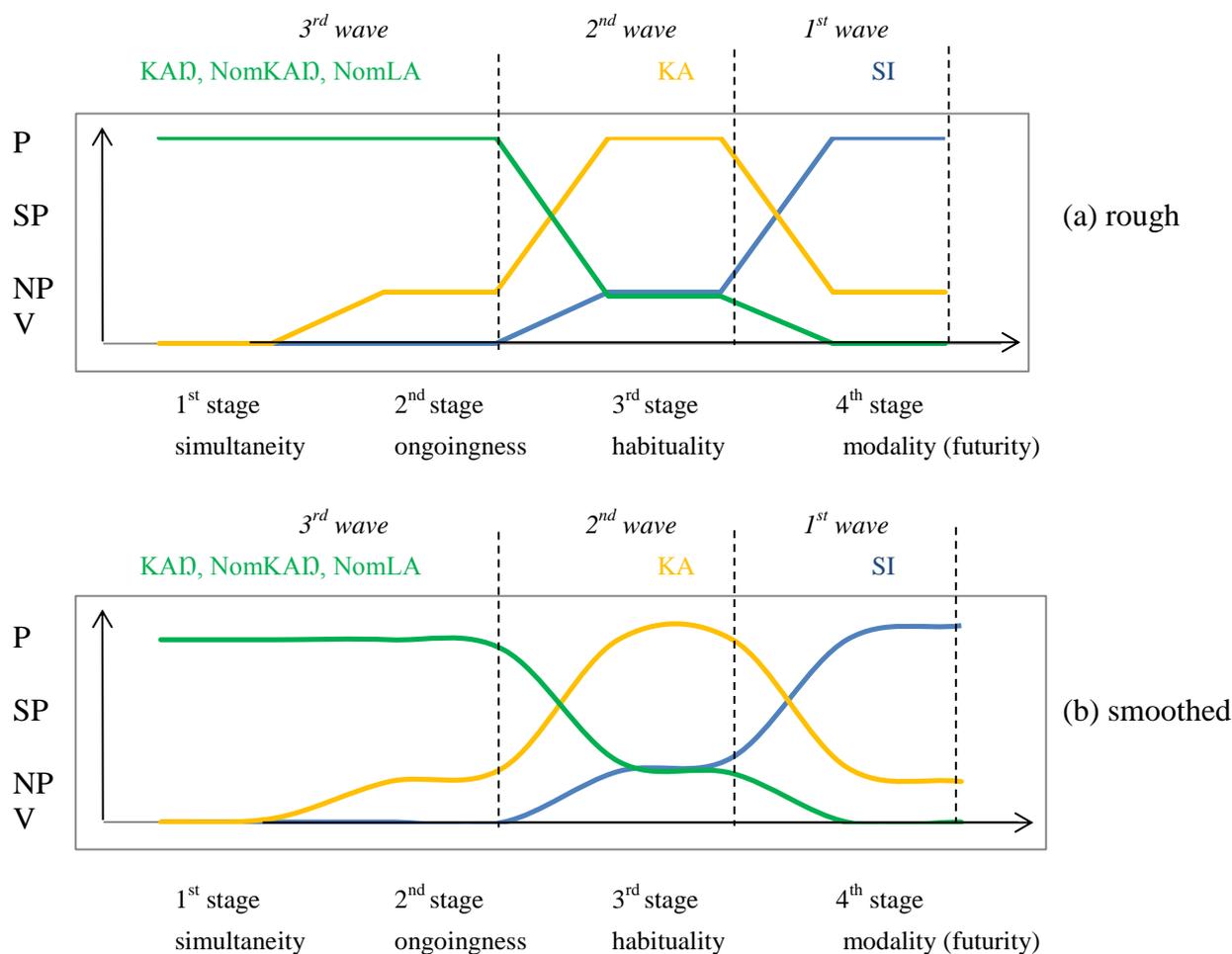


Figure 7.1: The imperfective stream<sup>285</sup>

The resultative stream is composed of three more microscopic channels, namely the anterior, the simultaneous and the evidential stream. The anterior stream hosts five constructions organised in three consecutive waves. The first wave comprises the TA, YE<sub>1</sub> and BANTA grams. The topologies and prototypicality peaks of these forms are the most advanced – they have reached the furthest sections of the anterior cline, such as a perfective past and/or a non-perfective past. The TA and BANTA grams have generalised the final stage of the anterior cline as one of their prototypicality areas, while the YE<sub>1</sub> construction has abandoned the original phase of a resultative proper. The second wave or the NAATA form exhibits a less advanced map and prototypicality peak, being confined to the stages of a perfect and a

<sup>285</sup> In the case of the SI gram, the further extensions located outside the imperfective path also include the domain of futurity.

perfective past. The third wave carries the RIIJ gram. The topology and prototypicality peak of this form are the least advanced, mostly matching the initial stage of a resultative proper. Although the TA, YE<sub>1</sub> and BANTA grams are treated as constituting a single wave, they may also be viewed as two distinct, more microscopic undulations, parts of a bigger wave by which they are all carried ahead. This holds especially true for the BANTA gram, which is formed by means of the TA gram and, hence, must be historically posterior to the TA construction. In addition, it actually travels along a different sub-channel of the resultative stream, i.e. the evidential cline. However, from a synchronic topological perspective, as far as the tense-taxis-aspect properties are concerned, the BANTA formation exhibits the advancement degree that is equivalent to the evolutionary progress shown by its predecessor – the TA gram (for a detailed discussion, see section 3.6).

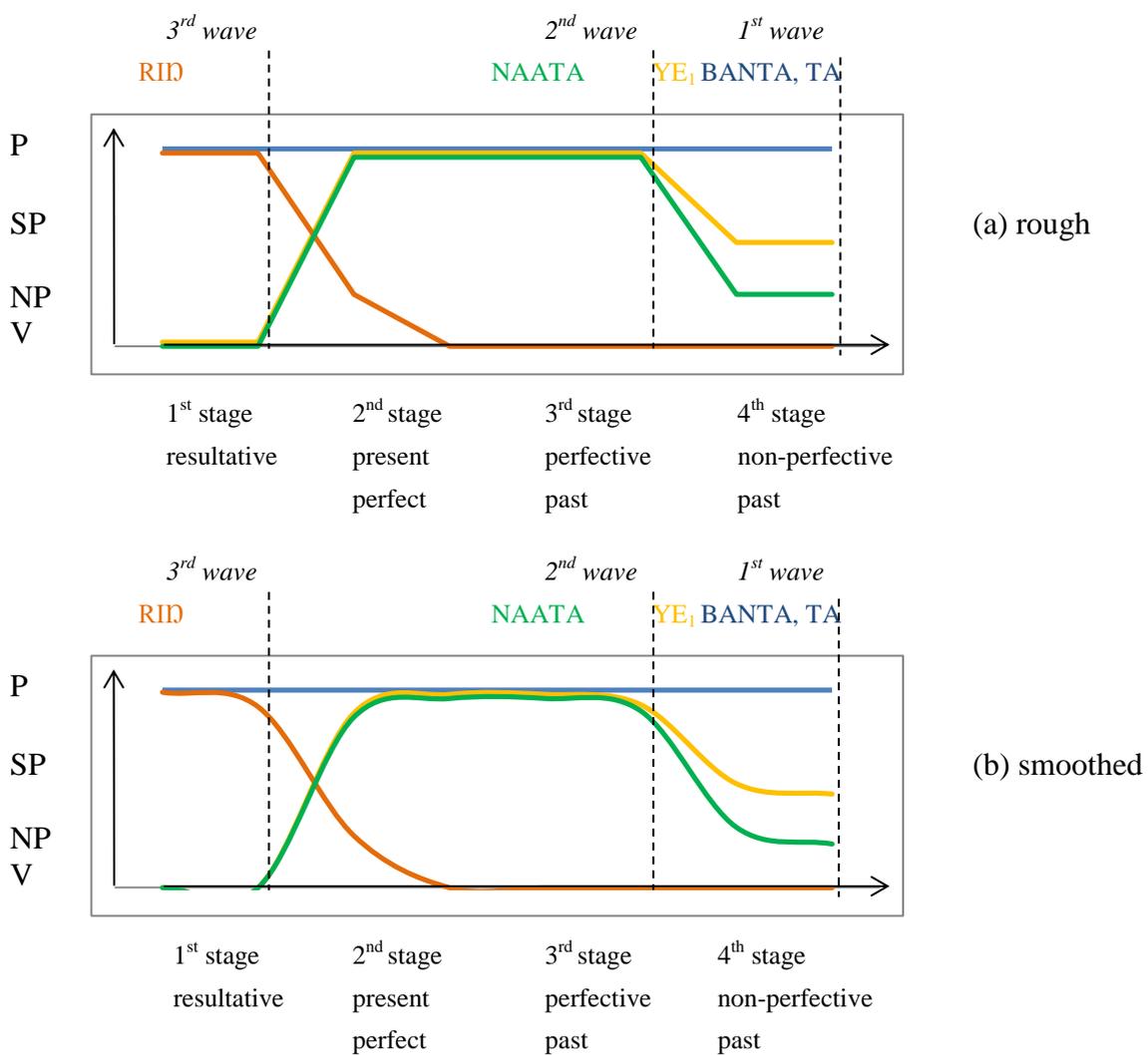


Figure 7.2: The anterior stream

The simultaneous stream hosts only four grams out of the five that inhabit the anterior channel, i.e. the YE<sub>2</sub>, TA, BANTA and RIIJ forms. In accordance with the general degree of development exhibited on the anterior stream, the TA, BANTA and YE<sub>1</sub> grams seem to be

the most advanced. Among the three formations, the  $YE_1$  gram may be viewed as the most progressed, while the TA and BANTA forms seem to be more conservative. The RII construction is even more conservative. Similarly to its position on the anterior stream, the RII form constitutes the last and the youngest wave on the channel (cf. section 3.6).

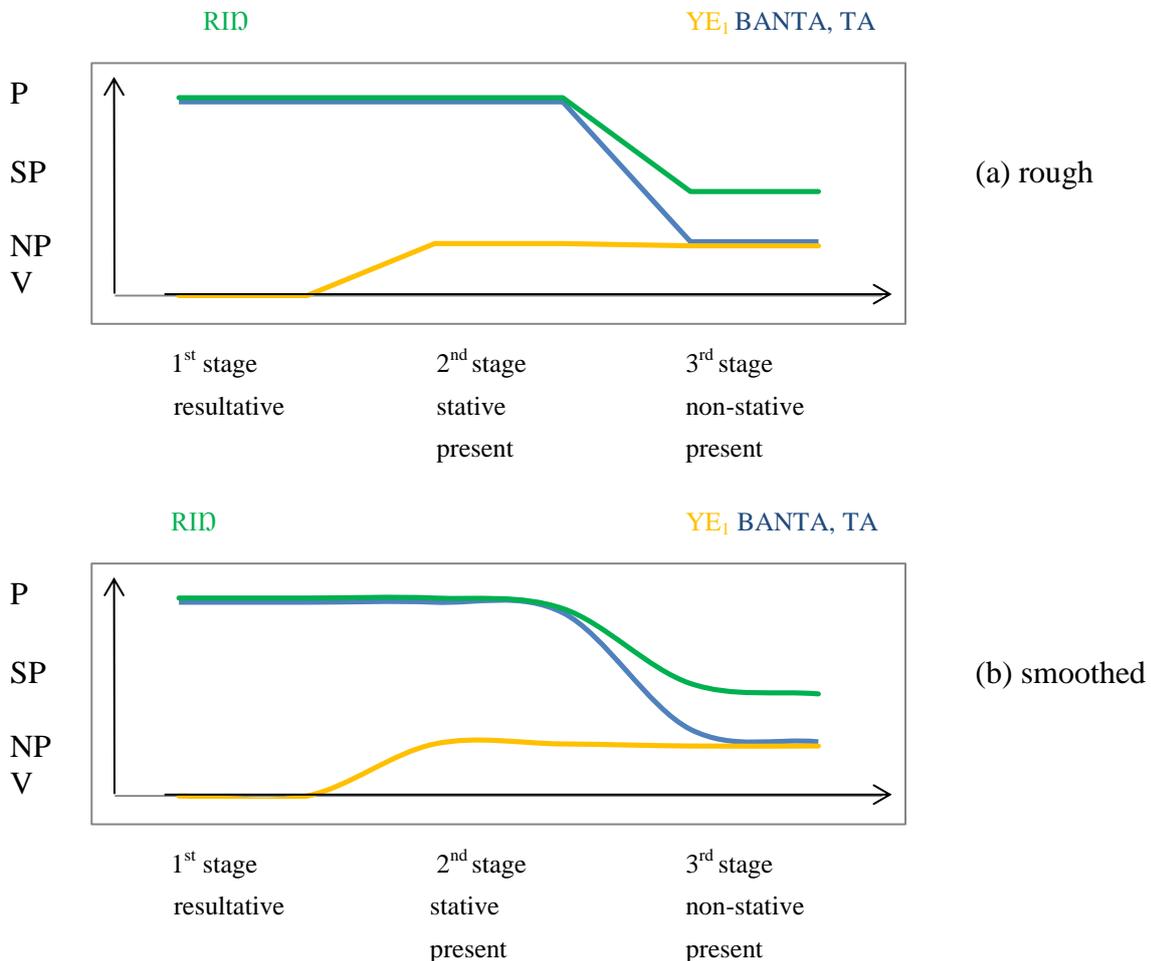


Figure 7.3: The simultaneous stream

With respect to the evidential stream, this channel hosts two grams: the first wave or the BANTA form (its topology and prototypicality peak are the most advanced, covering almost the entire length of the cline, in particular, the final stage of epistemic modality) and the second wave or the NAATA form (its map and prototypicality peak exclusively cover the pre-formative stage of the cline, i.e. the section where the sense of non-control is profiled). Thus, the correlation of waves on the evidential stream matches the order on the anterior stream, where the BANTA form is more advanced than the NAATA gram (cf. Figure 7.2, above; for details see section 3.6).

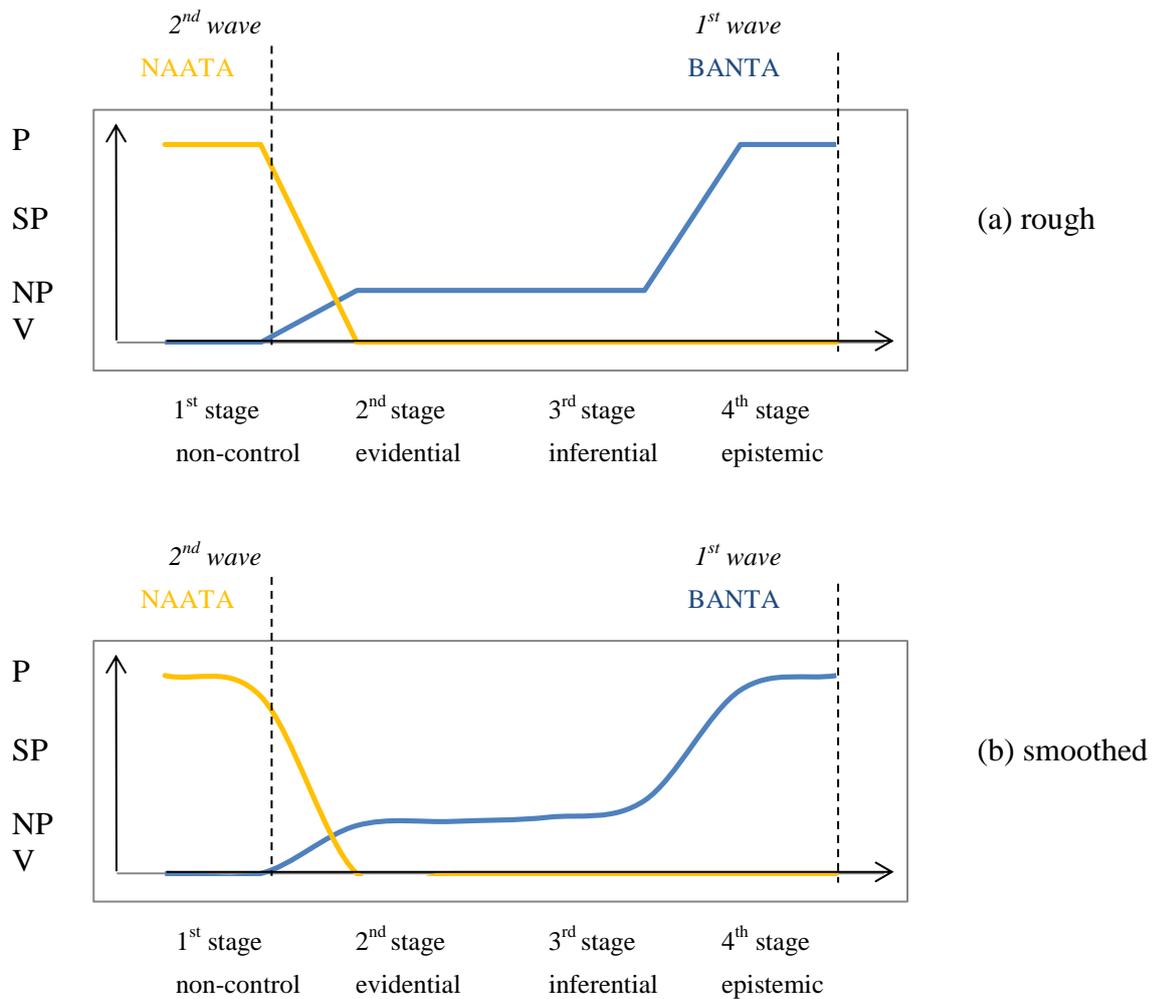


Figure 7.4: The evidential stream

The modal stream constitutes a highly complicated part of the Basse Mandinka verbal system. It contains grams that can cover different areas of modality and therefore are very different at a fine-grained level of analysis. However, from a coarse-grained perspective, they may all be located on a single stream, where only four stages of modality are distinguished. If the domain of futurity is excluded from the model and the intermediate (or the second) phase is split into two consecutive sub-stages (speaker-oriented and epistemic modality), the modal stream hosts four constructions organised in three consecutive waves. The first wave carries the SI gram. The overall topology and prototypicality peak of this construction are the most advanced, typically covering the intermediate and final stages of the stream (speaker-oriented, epistemic and syntactic mood), while agentive modal senses are common only in the company of the elements *noo* and *fo*. The second wave or the MAA gram locates its global topology and prototypicality peak in the intermediate section of the stream, i.e. in the stage of a speaker-oriented mood. Finally, the third wave, represented by the NOO and ÑANTA grams, is the least advanced. The overall topologies and peaks of prototypicality of these formations cover the initial and intermediate fragments of the stream, i.e. the areas of agentive and speaker-oriented modality (cf. section 4.5).

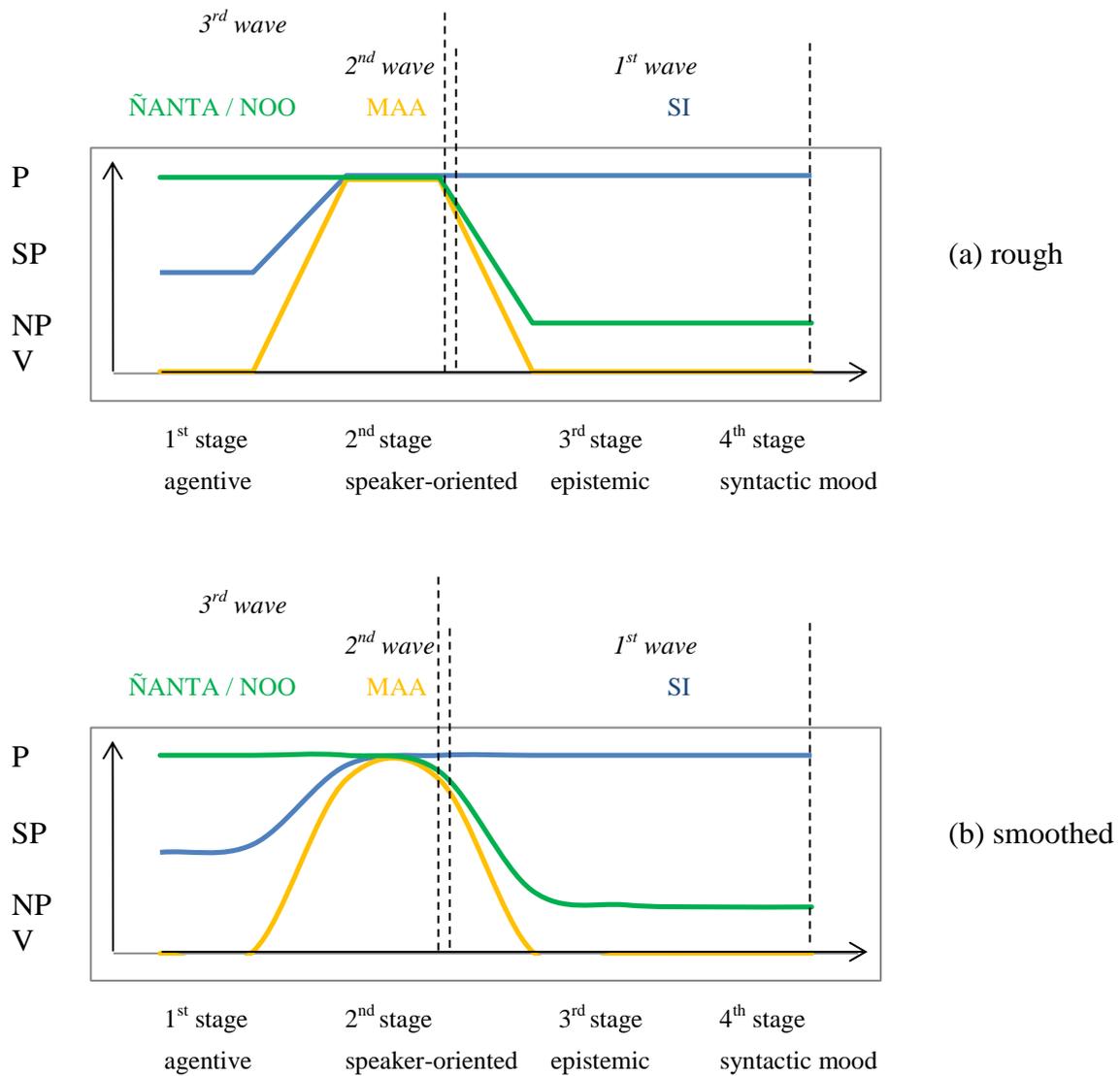


Figure 7.5: The modal stream (futurity non-included)

If the extensions towards futurity are taken into consideration and the second stage encompasses two more specific sub-phases of speaker-oriented and epistemic modality, the consecutiveness of the waves is comparable, the (modal-)future stage being prototypical only of the most advanced wave or the SI gram (cf. section 4.5).

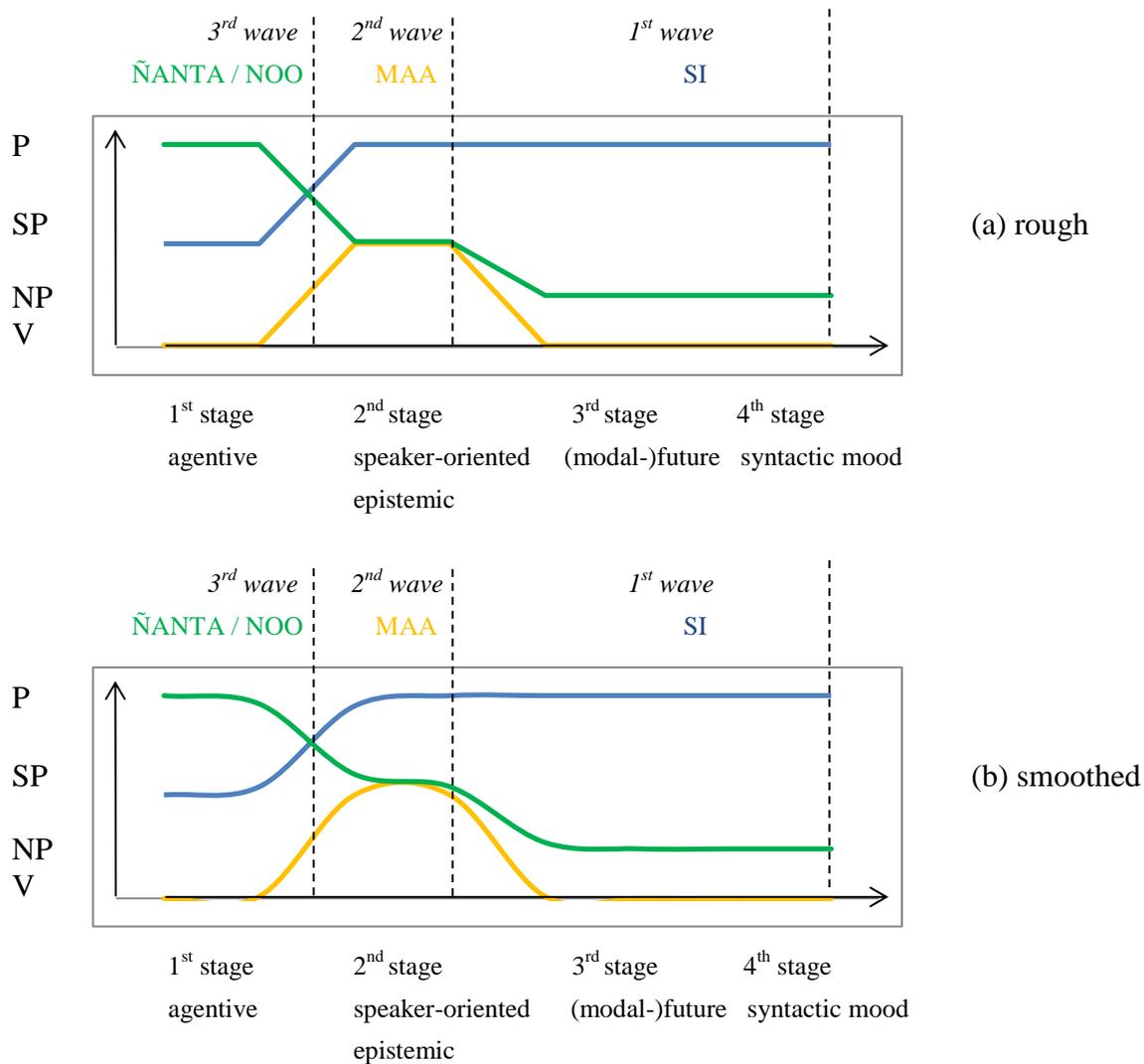


Figure 7.6: The modal stream (futurity included)

The genuine future stream hosts two grams travelling along two consecutive waves. The first wave carries the LA gram. The overall topology and prototypicality peak of this construction are the most advanced. On the one hand, this gram's wave covers the zones of a modal future, a perfective future, a simple future and a syntactic modality. On the other hand, it has abandoned the predestination value typical of the most initial phase. The second wave transports the NAA LA gram, whose general topology and prototypicality peak are less advanced, matching the areas of a venitive motion, a modal future and a perfective future (see Figure 7.7, below).

It should be emphasised that, from a more fine-grained perspective, the two formations evolve along slightly different sub-types of future streams. The LA gram travels along the predestination cline, while the NAA LA form simultaneously travels along the future-perfect and venitive paths (both trajectories of the NAA LA construction are moreover related to the predestination cline, as the gram is an elaboration on the LA form). Nevertheless, although partially distinct as far as their dynamics are concerned, the two formations can be compared by being placed on a more coarse-grained, typologically

common, evolutionary channel that encompasses all grams developing towards the idea of futurity, irrespectively of their specific source – the general future path (cf. section 5.3).

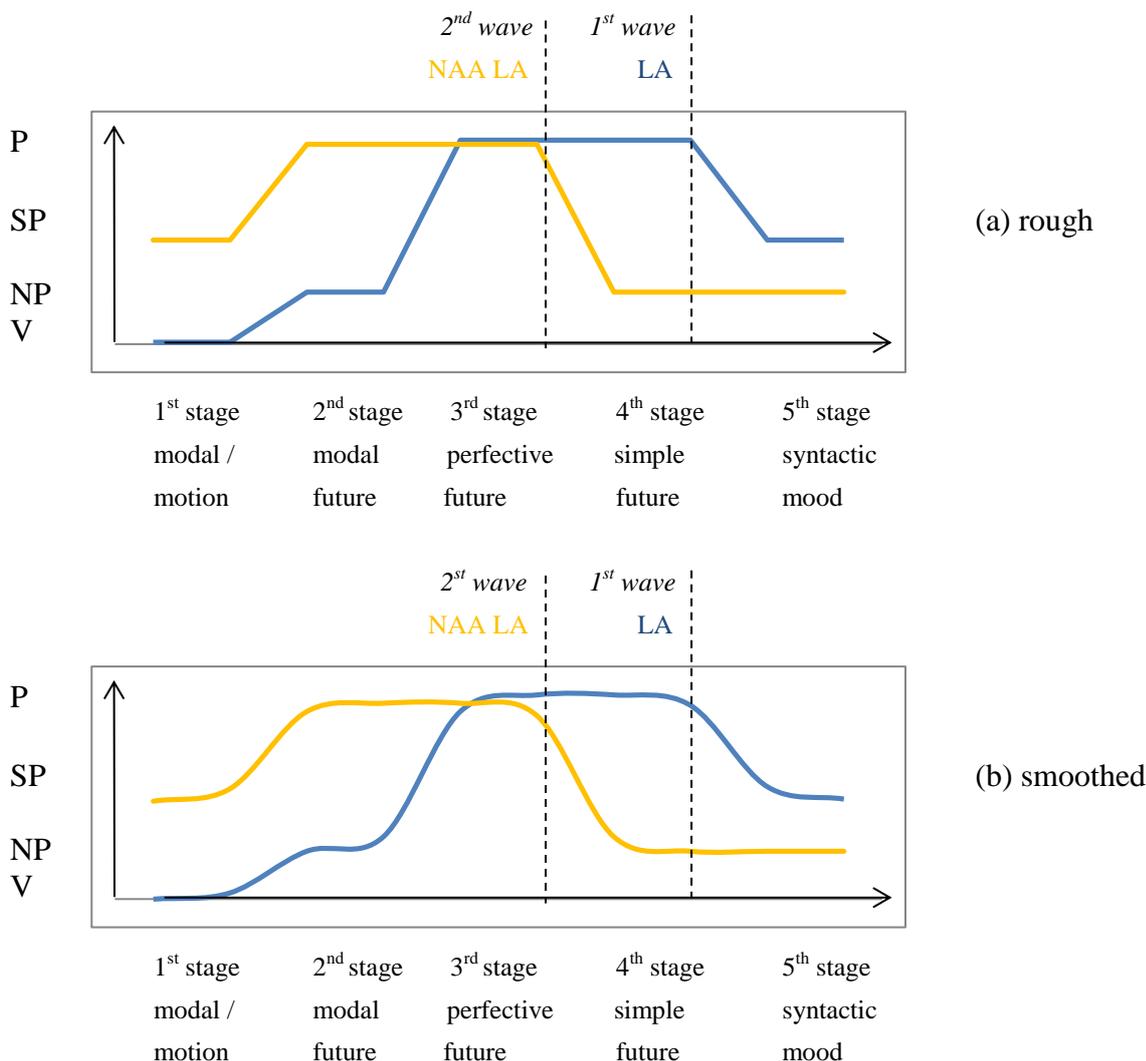


Figure 7.7: The future stream

If all the grams that can convey the idea of futurity are jointly considered and accommodated on the channel leading towards modality, the modal (or modal-future) stream can be viewed as hosting five formations organised in four waves. The first wave corresponds to the SI gram. It is an advanced imperfective-path gram with the prototypicality peaks in the area of modality, modal futurity, futurity and syntactic modality.<sup>286</sup> Within this level of granularity, the wave's peak is entirely uniform, spanning the entire stream. The second and third waves carry the LA and NAA LA formations respectively. The fourth wave comprises two forms, i.e. the NOO and ÑANTA grams, which are relatively non-advanced modal-path grams with

<sup>286</sup> Additionally, it has also been hypothesised that the SI locution could descent from a modal periphrasis characterised by the senses of ability and obligation, thus being an example of a modal-future cline (cf. section 1.5 and 3.4). If this is correct, the SI gram could even be better accommodated on the future stream, since it would, in fact, have been travelling along this evolutionary trajectory.

the prototypicality peaks in the zones of agentive and speaker-oriented modality. While the constructions of the first, second and third waves can express the idea of simple futurity (third stage of the stream), the forms of the fourth wave almost never do so – the future actions are always modally coloured (cf. section 5.3).

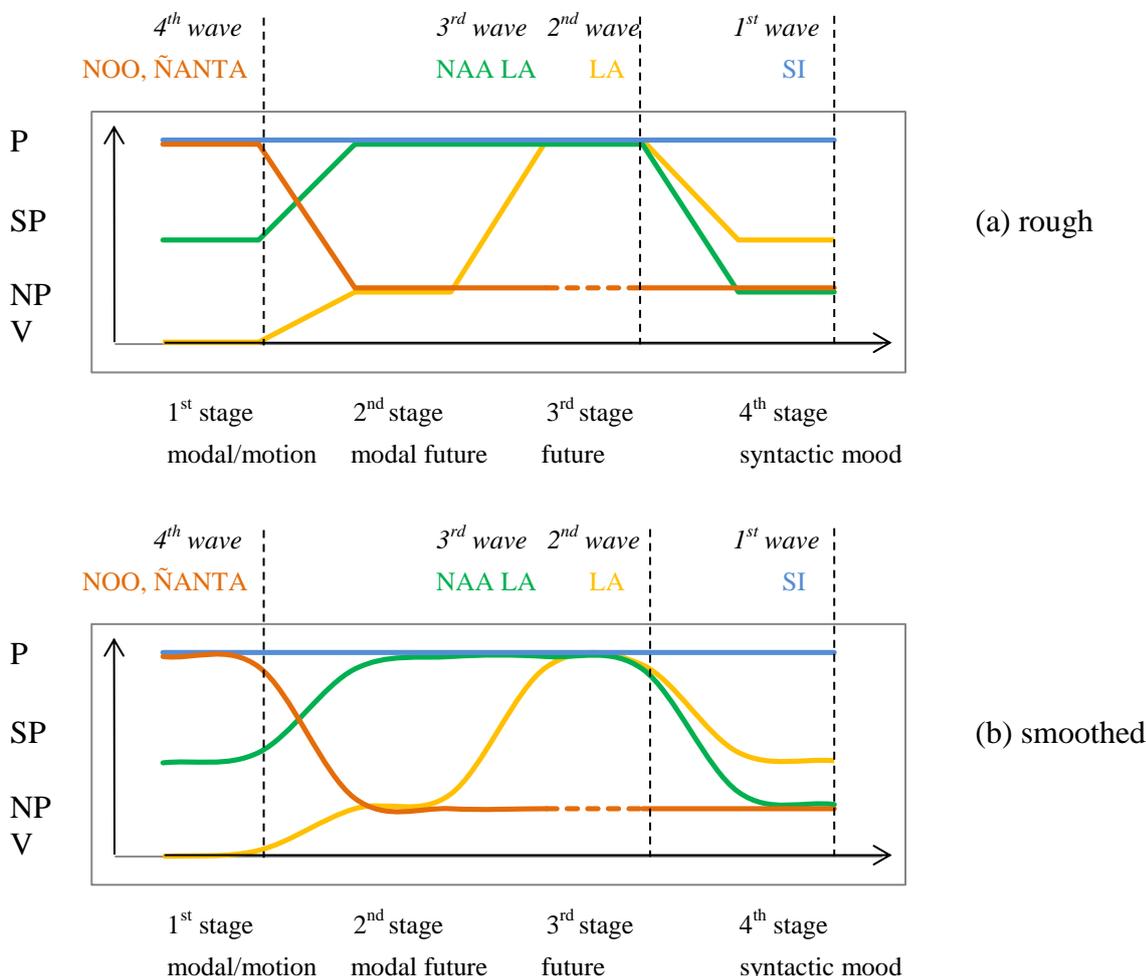
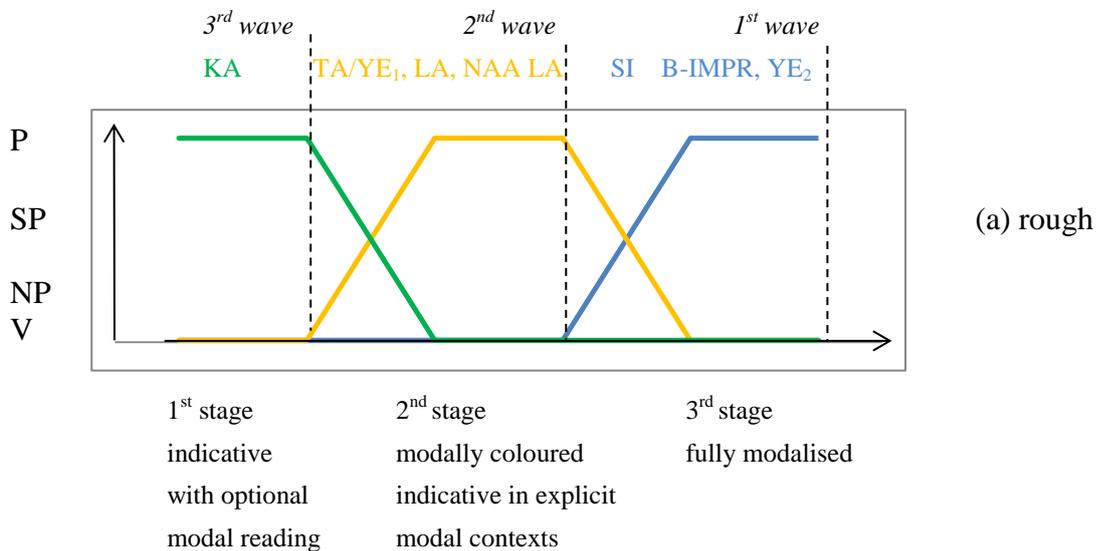


Figure 7.8: The modal-future stream – extended model

Lastly, the modal-contamination stream hosts the greatest number of grams, as it practically affects and accommodates any verbal construction. It must be recalled that this channel contains various types of modal contamination which lead to different specific modal values. Nevertheless, from a more coarse-grained perspective, all formations that offer modal senses developed due to environmental factors – irrespectively of their specific modal nuances, the input constructions from which they have emerged, and the contexts in which the modal sense has been generalised – can be located on a shared developmental channel. The first wave carries three forms: the B-IMPR, YE<sub>2</sub> and SI grams. Since all of these locutions are fully modalised – it should however be recalled that the SI gram may still offer certain non-modal uses (cf. below in this paragraph) – the first wave has reached the most advanced, third stage of the steam. The three grams coexist on a single wave because, although their maps partially overlap, they all specialise in three different semantic spheres of modality: direct

orders (the B-IMPR), indirect or sequential direct orders and wishes (the YE<sub>2</sub>) and apodotic conditional, epistemic and future modality (the SI locution).<sup>287</sup> It is also possible to split the first wave and understand the B-IMPR and YE<sub>2</sub> grams (which can only be used with a modal force) as historically anterior to the SI form (which can still offer certain non-modal values). The second wave hosts four grams (i.e. the TA, YE<sub>1</sub>, LA and NAA LA formations) and has reached the second stage of the stream, the phase of modally coloured indicatives (i.e. indicatives that in explicit modal contexts have been fully modalised). The modal nuances are overall frequent and, in this milieu, compulsory. Once more, the forms can coexist because they relate to different types of modality: protatic moods (the TA and YE<sub>1</sub>, employed in intransitive and transitive constructions, respectively) and apodotic moods (the LA and, usually in unreal counterfactual uses, NAA LA). Lastly, the third wave includes the KA gram and is confined to the initial, first stage of the stream, where an indicative form offers rare and optional modal readings (cf. section 6.4).



<sup>287</sup> The YE<sub>2</sub> and SI gram overlap in their subjunctive use.

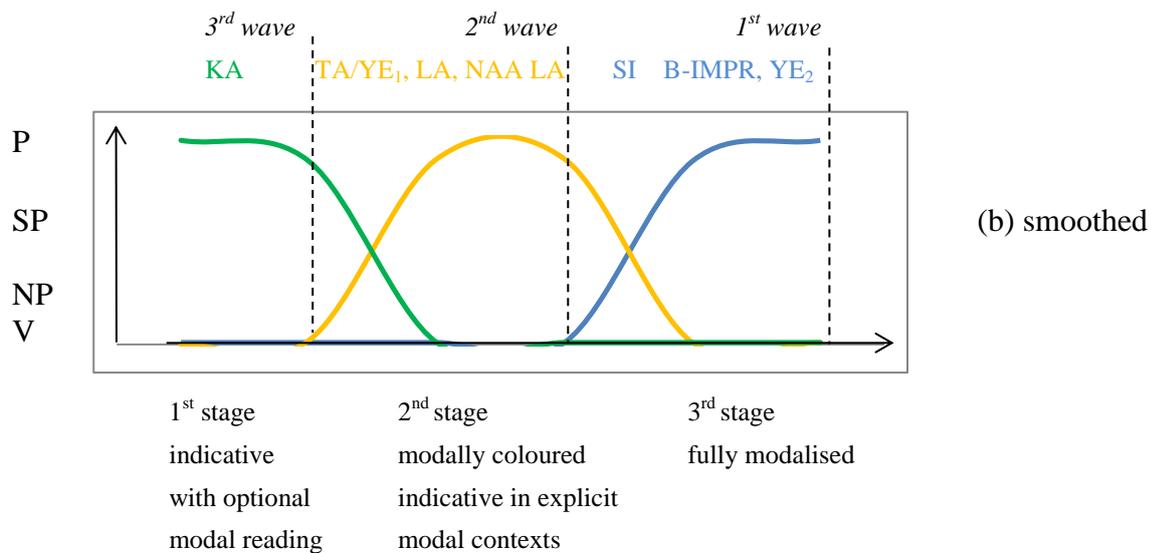


Figure 7.9: The modal-contamination stream

### 7.1.2 A gram as a wave on a stream – the stream's topology

The individual qualitative and quantitative properties of the Basse Mandinka grams analysed in this dissertation have enabled us to define these formations in terms of dynamic topologies, i.e. waves located on determined streams. In this manner, the peak of the wave traced by a gram – i.e. its prototypicality zone – can be understood as the gram's representative meaning, semanticised to the greatest extent, which, according to cognitive linguistics, contributes the most to the users' perception and understanding of the form. However, I have argued that the systemic definition of a gram not only stems from this form's internal characteristics (i.e. its qualitative and quantitative map) but is also conditioned by the interaction of the internal topology of the wave with the topologies of the other waves located on the same stream. Accordingly, the wave of the gram (especially its peak) and the waves of other grams belonging to the same channel (particularly their peaks) jointly contribute to the definition of a formation and, thus, to its association with a certain meaning. At this more macroscopic level of description, the environment in which a gram exists (i.e. the stream that hosts an individual formation) plays an important role in this form's systemic classification and its perception by the users.

The imperfective stream is partitioned into three prototypicality zones. The first wave (the SI form) specialises in the modal and future domains, located outside the imperfective cline *sensu stricto*. The second wave (the KA form) specialises in a less advanced stage on the cline, i.e. the area of habituality. The third wave (represented by the KAI, NomKAI and NomLA forms) specialises in initial sections of the imperfective stream, i.e. in the zones of simultaneity and ongoingness. Even though the SI form can offer values that cover less advanced fragments of the path (for example, habituality, durativity and gnomicity), from the system's perspective, this gram can be viewed as an prototypical expression of modal and future senses because habitual, durative and gnomic nuances are more typical of the gram of the next wave (the KA formation). This is corroborated by the fact that native speakers

usually associate the SI construction with modality or (modal-)futura. A similar interaction has been described in the case of the KA form. The KA gram is usually equalled with the stage of habituality, even though it can also convey the sense of ongoingness and modality (the former being more common than the latter). However, since these two domains are typically conveyed by and associated with the grams of the third (i.e. the KAD, NomKAD and LA forms) and the first wave (the SI gram), respectively, their contribution to the identification of the KA form is marginal. Lastly, from the system and users' perspective, the set of the forms of the third wave is associated with the domains of simultaneity and ongoingness, even though the KA form can also express the nuance of ongoing actions and activities. However, given that the wave of the KA form raises its front at the stage of habituality, its association with the idea of ongoingness is less evident, which, inversely, increases the identification of the KAD, NomKAD and NomLA grams with this domain. In addition, although the KAD, NomKAD and NomLA constructions can sometimes express values of the third stage (e.g. habituality), the fact that the KA form locates its prototypicality peaks in this section of the stream minimises the relevance of this domain for the systemic status of the three grams of the third wave.

All of this indicates that the systemic classification of a gram and its perception by speakers jointly depend on this form's individual properties (its own wave's topology) and on the properties of its environment, i.e. the stream along which this formation expands, in particular, on the topologies of the waves traced by the other grams (cf. section 2.6).

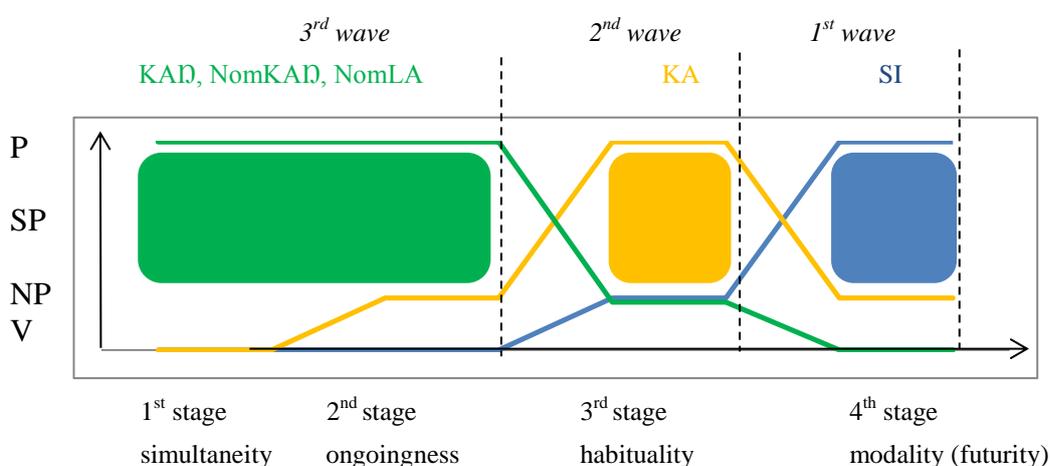


Figure 7.10: The imperfective stream – the influence of the environment

The role of the environment in a gram's classification is more evident – and, likewise, more complex – as far as the resultative stream is concerned. I will discuss this phenomenon in detail by analysing the three sub-streams separately.

The structure of the anterior stream, due to the rivalry among the grams hosted on it, importantly contributes to the systemic classification of a form and its association with a meaning developed by the users. Namely, the grams of the first wave (the TA and YE<sub>1</sub> formations) can be viewed as typical of the domain of a simple past – a definite broad past

tense that includes both perfective and non-perfective readings.<sup>288</sup> This stems not only from the semantic potential offered by the two constructions, but is above all conditioned by the fact that the grams of the second wave (i.e. the NAATA form) and the third wave (i.e. the RIIJ form) typically cover the less advanced sections of the stream. Since the NAATA form has its prototypicality peak in the area of a perfect and a perfective, and the RIIJ gram in the zone of a resultative proper, the TA and YE<sub>1</sub> constructions – which are semantically extremely broad and exhibit their peaks of prototypicality almost uniformly distributed along the perfectal, the perfective and the non-perfective past senses – can be equalled with an evolutionary stage “free” of the other grams, i.e. the phase of a simple past: a combination of a perfective and non-perfective past. It is, thus, the interaction of all the grams travelling along the anterior-path stream that delivers the systemic position of the TA and YE<sub>1</sub> constructions and their association with the simple past domain despite the fact that the two forms can also function as a resultative proper,<sup>289</sup> a perfect and a perfective past. Inversely, the internal topologies of the TA and YE<sub>1</sub> waves are unable to explain why the native speakers tend to associate these grams with general past tenses (preterites).

The gram of the second wave (the NAATA form) is common in the perfectal and perfective past domains (similar to the TA and YE<sub>1</sub> forms) and extremely rare in the function of a non-perfective past, which in turn prevents its association with a simple past category (in contrast to the TA and YE<sub>1</sub> formations). Accordingly, it is viewed as an explicit expression of a perfect and a perfective past, while the TA and YE<sub>1</sub> grams are too ambiguous to yield such associations. Lastly, the RIIJ gram can be systemically understood as specialising in the value of a resultative proper. The contribution of the perfectal sense to the meaning of the RIIJ form is minimal due to the infrequency of this value in its own semantic map and, from the environment’s perspective, because it is the NAATA form that most typically provides the sense of a dynamic present perfect (cf. section 3.6).

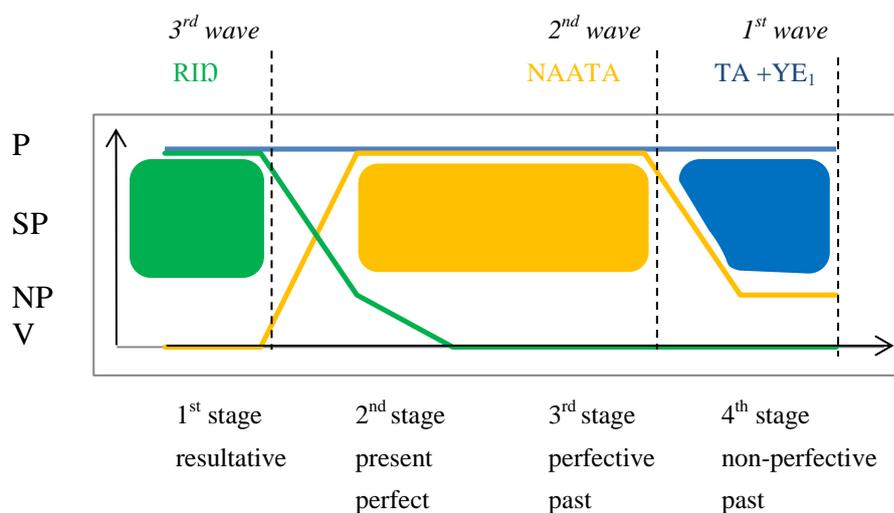


Figure 7.11: The anterior stream – the influence of the environment

<sup>288</sup> In this representation, the BANTA gram is omitted, as it specialises in the domains of the evidential cline.

<sup>289</sup> This value is only typical of the TA gram.

The impact of a broader environment is also visible in the simultaneous stream. If the BANTA gram is kept apart, this channel hosts three constructions, i.e. the TA, YE<sub>1</sub> and RII forms. The TA and RII grams – although belonging to two distinct waves, developed at two distinct historical periods – have almost identical qualitative-quantitative maps, being prototypical in the areas of a resultative and a stative. The wave of the YE<sub>1</sub> form is only slightly lifted in the zone of a stative (the form is not prototypical in the domain), additionally having abandoned the stage of a resultative proper. Finally, the waves of all the grams are partially raised in the area of the final phase, i.e. the present, albeit the RII more so than the TA and YE<sub>1</sub> constructions. The NAATA form does not participate in this “rivalry” as it only specialises in the anterior path.

Although, internally, the TA and RII grams draw comparable waves on the simultaneous stream, their systemic classification changes if the structure of the anterior and simultaneous channels – the two most common channels within the overarching resultative stream – are jointly taken into consideration. Apart from being used as a stative, the TA construction exhibits highly common dynamic (actional) values, offering senses of a perfect, a perfective past and a simple past. On the contrary, the RII almost never acts as a dynamic (actional) perfect and past, but is predominantly used as a resultative proper. The explicitness of the non-dynamic value of the RII gram – regular when this form appears on the anterior stream – increases its systemic status as a stative. This contributes to its more profound association with the idea of stativity than it was the case with the TA gram, which on the contrary specialises in dynamic readings. In this manner, the overall structure of the anterior stream would exert some influence on the systemic status and perception of the TA and RII constructions developing along the simultaneous stream, so that the sequentiality of the waves traced by these two grams on the two channels would be analogous (cf. Figure 7.12, below).

This mutual relation between the RII and TA grams possibly explains why speakers tend to associate the former with the category that expresses states (stative and resultative proper) whereas the latter is perceived as more dynamic, in particular as a past despite the two being compatible with the stative and resultative domains (see section 3.6).

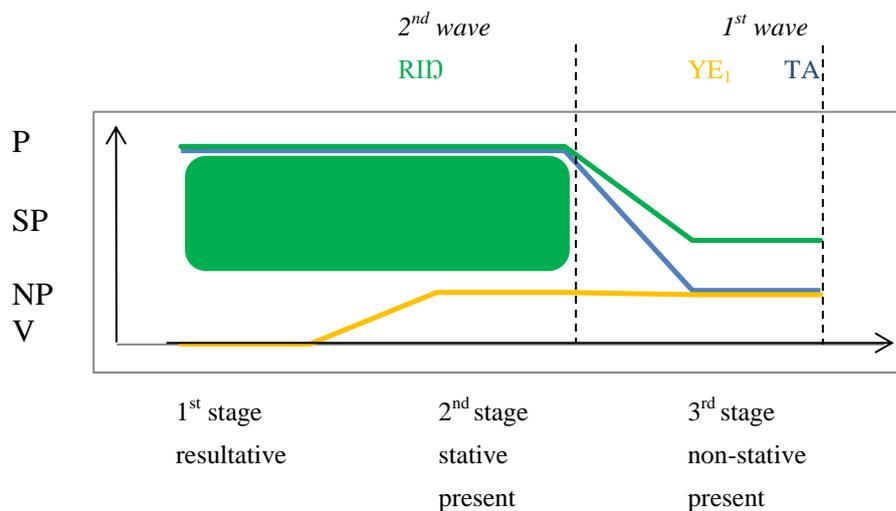


Figure 7.12: The simultaneous stream – the influence of the environment

The BANTA form is typically related to the evidential stream, where it coexists with the NAATA locution. The BANTA gram covers three more advanced regions, being thus profoundly associated with the idea of non-first hand modality, whereas the NAATA construction has been generalised as the expression of the idea of non-control. The two formations do not overlap but rather divide the evidential stream in their respective zones of influence. Since the evidential and inferential domains are only expressed by the BANTA form and there is no competition with any other constructions, the BANTA gram is associated not only with its most prototypical use (epistemic) but can also be viewed from the systemic perspective as the exemplary means of conveying evidential and inferential senses, which are much less common as far as the internal prototypicality of this formation is concerned.<sup>290</sup> This shows that the structure of the stream – or the environment – importantly contributes to the systemic classification of a gram and its perception by the native speakers (cf. section 3.6).

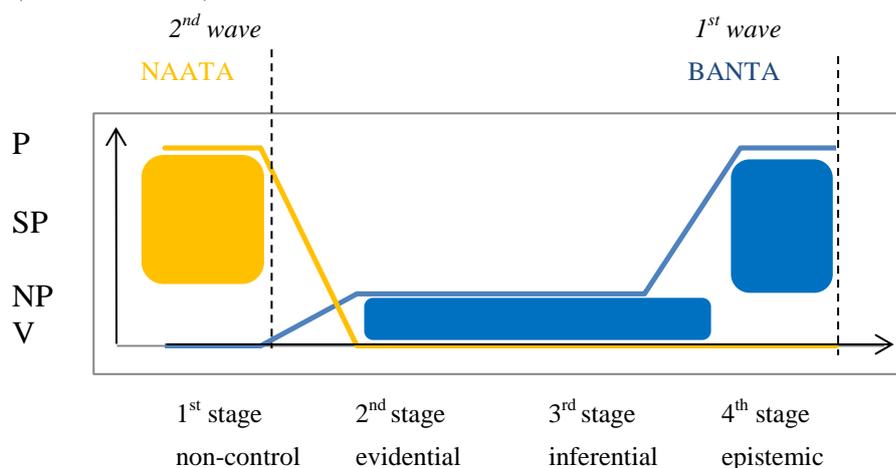


Figure 7.13: The evidential stream – the influence of the environment

<sup>290</sup> This also stems from the fact that there are no other grams (evolving along different streams, e.g. along the modal channel) that would typically express evidential and inferential values.

The structure of the stream also plays an important role in the systemic status and perception of the grams that are hosted by the modal stream. As explained, the genuine modal stream contains four grams organised in three waves. One should note that the classification of the modal locutions is deeply conditioned by the granularity of the description, especially by the number and type of stages distinguished on the modal path. From the most coarse-grained view, the relation between the grams' dynamic topologies and the organisation of the stream deliver the following systemic definitions of the modal-path forms and their associations with certain meanings. The form of the first wave, the SI gram, is topologically extensive with a relatively uniform wave peak, being prototypical at the second, third and fourth stage and semi-prototypical at the first stage. However, given that the grams of the third wave (the ÑANTA and NOO forms) raise their prototypicality peak in the area of agentive modality, thus surpassing the SI construction, minimises the relevance of this domain for the systemic status of the SI form – the gram is mainly associated with speaker-oriented modality, modal-future and syntactic modality. In other words, the fact that the ÑANTA and NOO waves predominate in the section of agentive mood contributes to a strong association of the SI construction with the second, third and fourth stages of the stream (in which the wave of the SI gram surpasses all other grams), even though it is also used in an agentive modal function with relative frequency. Inversely, although the ÑANTA and NOO formations can express values of the second stage (in particular, the speaker-oriented senses), the fact that the SI form is the most common means of conveying all meanings available at the second stage,<sup>291</sup> accompanied by the previously mentioned fact whereby the ÑANTA and NOO waves predominate in the first stage of the stream (agentive modality) jointly increase the weight of the agentive meanings in the systematic classification of these two locutions, thus minimising the relevance of the domains typical of the second stage.

This convoluted interaction between the ÑANTA and NOO grams, on the one hand, and the SI form on the other, occurs simultaneously so that it is impossible to determine which wave constitutes the foundation of this mutual relation. Both influence and are influenced by each other at the same time.

As the general frequency of the MAA gram is extremely low, the visibility of the wave of this formation on the stream and, thus, its overall contribution to the systemic meaning of the other forms belonging to the channel is minimal. The MAA construction is associated with the second stage of the stream. However, given its scarcity, it seems to interact neither with the SI gram (the predominant wave in this section) nor with the ÑANTA and NOO formations (semi-prototypical in this area; cf. section 4.5).

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<sup>291</sup> This is evident, at least, at this level of granularity where speaker-oriented and epistemic modal senses are combined.

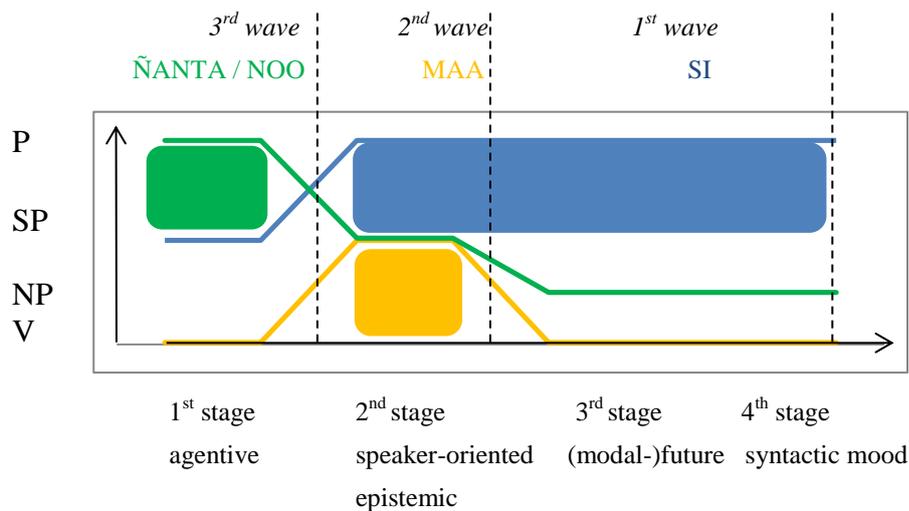


Figure 7.14: The (coarse-grained) modal-path stream – the influence of the environment

If the domain of futurity is ignored in the model and the second stage is further split into more fine-grained phases (first, the speaker-oriented mood and, next, the epistemic mood), the following systemic classification can be developed. As before, the ÑANTA and NOO grams specialise in the first stage of agentive modality. The SI gram specialises in more advanced sections, i.e. in the third and fourth stages typical of epistemic and syntactic modality. Given the individual properties of the grams, the second stage seems to be populated by all the waves so that no clear association of the speaker-oriented domain with any exclusive form can be proposed.

The mutual interaction of the grams and the structure of the stream help to determine possible associations and the systemic status of the formations. First of all, it should be recalled that the MAA gram is extremely rare. Even though the hearer-oriented modal sense is the most prototypical value of this locution – being *de facto* the only component of its semantic potential – the extreme paucity of this form in general renders its relevance for the system to be highly marginal. To put it simply, the MAA construction cannot be viewed as the most typical expression of the second stage of the modal cline (the speaker-oriented mood) because it is extremely rare, being common exclusively in some fixed idiomatic phrases. This implies that the speaker-oriented domain can only be systemically equalled with the grams of the first (the SI form) or third waves (the ÑANTA and NOO forms). The determination of which one of them is specialised in the speaker-oriented modality is vain at this granularity. In fact, both are so, because the two waves specialise in different types of this modal domain: the SI form is associated with the idea of strong necessity and highest probability as well as optative, while the NOO and ÑANTA forms are associated with possibility and mild necessity (probability), respectively. Although the MAA locution specialises in the optative sense, its scarcity must always be kept in mind. As a result, if any association is to be made and the systemic status proposed, the SI form could be viewed as a more usual optative expression than the MAA gram (see also the prototypical use of the YE<sub>2</sub> gram in the optative function). Nevertheless, one must note that the SI gram is a relatively

broad modal gram that lacks the precision of the MAA and/or NOO and ÑANTA forms (cf. section 4.5).

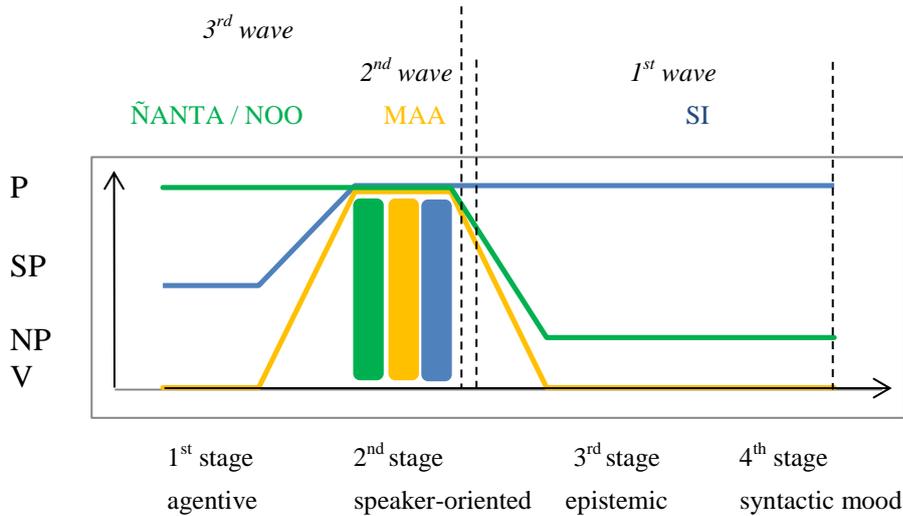


Figure 7.15: The (fine-grained) modal-path stream – the influence of the environment

With respect to the genuine future stream, the coexistence of topologies and prototypicality zones of the LA and NAA LA constructions triggers the following systemic classifications of the grams and their possible associations. The LA formation specialises in the domain of general futurity, especially in the function of a simple future tense, given the fact that its direct competitor – the NAA LA form – does not provide such a sense. The NAA LA form is identified with a modal future (intention) and a perfective future (as well as the values of future certainty-inevitability and proximity-imminence). Thus, although the LA form is frequently used as a perfective future, the fact that the NAA LA gram is an explicit expression of such a meaning – failing to express the imperfective future activities – gives more prominence of a simple future value to the semantics of the LA construction. Nevertheless, the overall scarcity of the NAA LA form – which is, together with the MAA gram, the least frequent component of the Basse Mandinka verbal system – renders the visibility of this construction on the stream and its contribution to the semantics of the LA gram much less than could be postulated given the waves' topologies. This, in turn, further strengthens the association of the LA form with the general idea of futurity (cf. section 5.3).

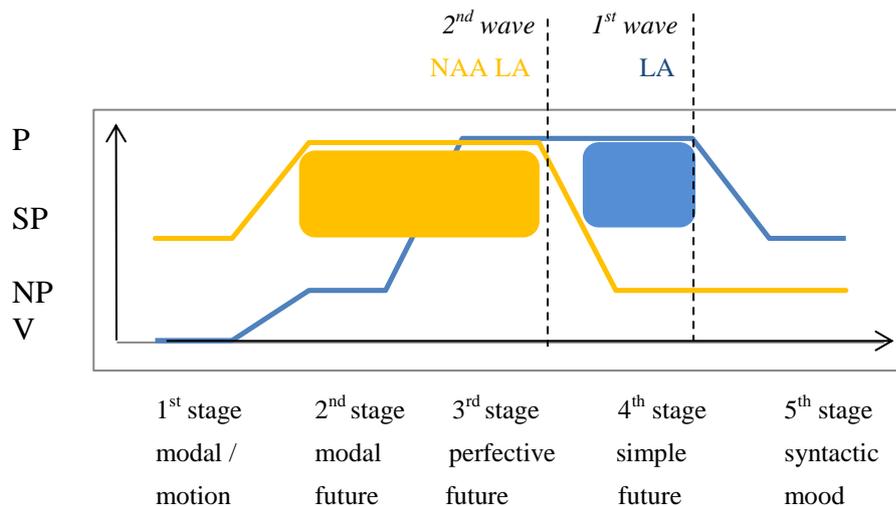


Figure 7.16: The genuine future stream – the influence of the environment

If one analyses the extended model of the future path (which combines the future path and the modal path),<sup>292</sup> in which all the grams that express a future sense are accommodated, the structure of the stream contributes to the systemic definitions and associations of the grams in the following manner. The SI gram (the first wave) receives a double peak topology with the specialisation areas in the domains of the modal future (the second stage) and syntactic modality (the fourth stage). The LA and NAA LA grams (the second and third waves) specialise in the values of the third stage (non-modal future). Even though these senses can also be conveyed by the SI form, the fact that the NAA LA is typically used as a perfective future and LA as a simple future leads to a situation where the modal future and syntactic modal senses are given more relevance in the semantics of the SI form. Accordingly, the SI form is usually viewed as a modal future (the second stage) or a subjunctive (the fourth stage; at least within this level of granularity and on this type of stream). If the general frequency of occurrences is additionally acknowledged, given that the NAA LA form is very uncommon while the LA gram is highly regular, the latter (and not the former) could be identified with a broad phase of non-modal futurity (the third stage). The identification of the SI form with modal futurity in disfavour of the NAA LA gram stems from the same reason, i.e. the infrequency of the latter and the commonness of the former. Finally, the ÑANTA and NOO constructions (the fourth wave) are typically equalled with modality (the first stage of the future path) even though the SI gram is equally typical in this domain. However, the narrower specialisation of the ÑANTA and NOO forms and the extreme broadness of the SI gram make the latter construction to be associated with the domains that are non-prototypical or absent in the semantic potential of the former. The mutual interaction of the waves has significant bearing on the systemic status of the grams, especially on the formations whose wave peaks are uniformly spread along multiple stages (cf. section 5.3).

<sup>292</sup> It is a modal cline that includes a separate stage of modal future and non-modal future.

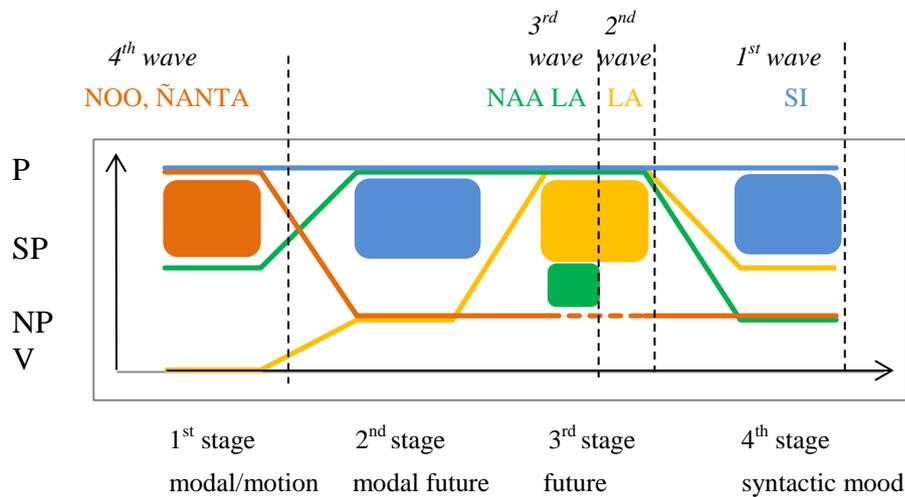


Figure 7.17: The future-path stream (extended “modal-future” model) – the influence of the environment

The structure of the modal contamination stream reinforces the associations that are directly derived from the individual topologies of the grams hosted by this channel. The grams of the first wave (the SI, B-IMPR and YE<sub>2</sub> forms) specialise in the third stage of full modalisation. The grams of the second wave (the TE/ YE<sub>1</sub>, LA, NAA LA forms) specialise in the second stage of an indicative profoundly and compulsorily modalised in an explicit modal context. The gram of the third wave (the KA form) specialises in the first stage of an indicative with infrequent and optional modal interpretations. Since, at this granularity, the three waves fail to overlap, their distribution on the stream simply reinforces the classifications developed by the topologies specific to the individual grams and the associations based on them. However, one should always bear in mind that the exact types of modality of the said constructions are distinct, as the modal contamination path has been applied to distinct modal domains, input constructions and contexts of contamination. In the set of fully modalised grams, the B-Imperative has been specialised as a direct, non-sequential directive mood, YE<sub>2</sub> as an indirect directive (including exhortation) and direct, sequential directive as well as an optative; and the SI gram has been specialised as an epistemic mood, non-sequential directive and modal future (the two grams are also typical of the syntactic, subjunctive domain).<sup>293</sup> In the group of modal indicatives, the LA gram has been specialised as an apodotic conditional; the NAA LA construction as an (infrequent) apodotic past conditional; and the TE/ YE<sub>1</sub> forms as protatic conditionals, of an intransitive and transitive type, respectively (cf. section 6.4).

<sup>293</sup> The domains of direct-non-sequential and indirect-non-sequential deontic and an apodotic conditional are shared with other grams; the SI form is also more agent-oriented than the other grams of this wave, being able to express ability and obligation.

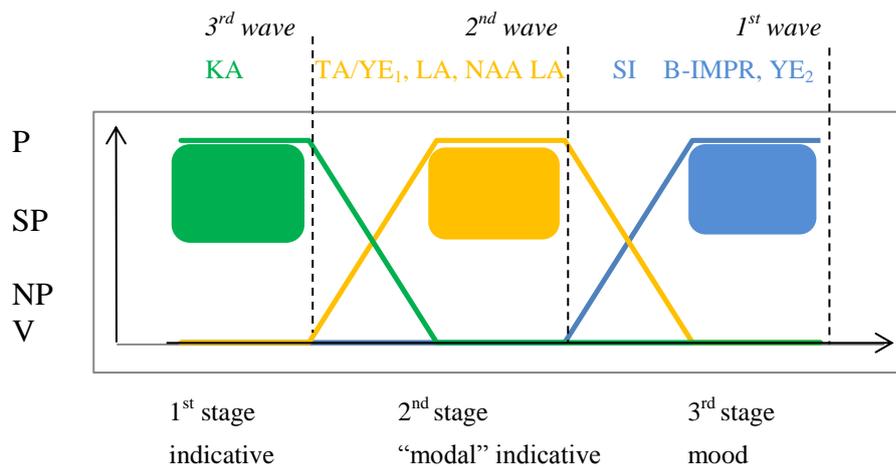


Figure 7.18: The modal contamination stream – the influence of the environment

## 7.2 The ocean

### 7.2.1 Ocean of streams

In the previous chapters and in section 7.1 above, each verbal gram in Basse Mandinka – if approached in its totality and from a coarse-grained perspective – has been represented as a bi-dimensional qualitative-quantitative map or wave, i.e. a kinetically oriented semantic potential (indicated by the arguments of the horizontal  $x$ -axis), sections of which are elevated in proportion to their prototypicality (indicated by the values of the vertical  $y$ -axis). The waves of formations that have been mapped by means of comparable evolutionary templates (i.e. that share the  $x$ -axis) have subsequently been arranged into five major streams. Each stream carries a determined number of waves in a consecutive order, i.e. from the first one (the oldest and the most advanced) to the last one (the most recent and the least advanced).

The construction of streams enables us to modularise the language into sub-systems, which, in turn, makes it possible to treat the Basse Mandinka verbal organisation more globally. However, rather than being composed of static and disjunctive modules, as usually presented in more traditional approaches to verbal semantics, where grams are arranged in motionless, firm, closed and separated aspectual, temporal or modal blocks (i.e. in a subsystem of aspect, subsystem of tense, and subsystem of modality with their own more specific sub-tiers, e.g. a tier of present tense, past tense or future tense), the modularisation into streams (more correctly into currents, i.e. streams that are understood as individuals of a higher level)<sup>294</sup> renders the global system and its main sub-sections dynamic, fuzzy, open and relational (see further below in this section; see also section 7.2.2).

<sup>294</sup> As explained in section 1.2.2.5 an individualised stream can be referred to as a current, in order to keep it distinct from a stream viewed as an environment that hosts grams. Of course, both types are related. The only difference is that a stream (*sensu stricto*) is a medium of expansion of waves, while the current is an individual of a higher rank where waves merge into a unified structure and lose their individuality. In this section (as well as in section 7.2.2 and 7.3), I will normally use the label stream for both sub-types, as the distinction is very subtle. Only when it is indispensable to distinguish between the stream as a hosting medium and the stream as a higher level individual, the term 'a current' (or 'an individualised stream') will be employed.

The modules of the verbal system depicted in this manner make overt reference to the dynamic potential of the language, as an individualised stream constitutes a developing wave. The arguments of the current's wave represented by the  $x$ -axis (i.e. semantic domains) are stable, while its values, indicated by the  $y$ -axis, change over time. The individualised stream equals the stream's actual density attested in the language at a time  $t$ . In this manner, the modules preserve the dynamics found at a more microscopic level of analysis, where the individuality of grams was studied (cf. vectors, waves, and combinations of waves in hosting streams; for a more detailed discussion of the overall dynamics of the Basse Mandinka verbal system, see section 7.3.1.5, below).

The structure of any dynamic module analysed in this way is inherently fuzzy, as the stream makes use of various semantic domains available on the grammaticalisation path that determines its  $x$ -axis, combining them in any possible qualitative and quantitative manner. This means that streams deliver modules that resist a traditional classification in rigid and exclusive taxis, aspectual, temporal or modal terms. There is neither aspectual module, temporal module nor modal module in the Basse Mandinka language. The modules rather transmute from one domain to another by a multitude of intermediate states, so that there is no need to fit them into artificially rigid labels. For instance, the imperfective stream relates the domains of taxis (simultaneity), aspect (progressive, continuous, habitual) and tense (present), as well as modal domains that emerge at more advanced evolutionary stages. The resultative stream connects an even greater array of domains, as its three formative clines are related to taxis (resultative proper, perfect, pluperfect), aspect (perfective, stative) and tense (past, present), as well as to modality (evidential or epistemic). As each such meta-domain (i.e. tense, taxis, aspect and mood) is conceptually and diachronically connected to many other domains, language – Basse Mandinka included – cannot be sliced up into separated sub-systems of tense, taxis, aspect and mood (regarding the fuzziness of the model see section 7.3.1.3).

The dynamic modules are essentially open, as they presuppose that what is lifted currently – i.e. what constitutes the peak of the current – will necessarily descend at later evolutionary stages, while the areas that are presently “flat” may inversely be raised, as new waves emerge and expand. The modules are not complete in the sense of constituting perfectly running machines generating senses and uses. The modules are unstable because they are inherently exposed to change and mutation. What is advantageous in this representation is that the model explains these changes – and it does so almost in a deterministic manner (concerning the openness of the model see section 7.3.1.1; on determinism, see section 7.3.1.7). It also enables us to reconstruct the changes that preceded the current state of the verbal system and predict its possible future modifications. By being dynamically open, the verbal system understood as a combination of individualised streams operates as an auto-regulating organism, with an innate potential to evolve and mutate, and with means to eliminate some of its components and to create new ones. This picture of the Basse Mandinka verbal organisation is thus compatible with a continuous process of loss and renewal that takes place in all languages. On the one hand, the waves of grams move along the stream so that the current becomes more advanced in general. On the other hand, the advancement of waves and the evolutionary maturity of the current make room for novel

forms. The creation of such new waves on the current renews the current. As a result, the current adopts a less advanced structure. The verbal system of the language and its grammar are constantly emerging. They never *are*. They are always in the process of becoming.

The Basse Mandinka verbal system can be viewed in dynamic, fuzzy and open terms as a fluctuating surface, an “ocean”, in which various streams pulsate, each one being replete with propagating waves. From the most coarse-grained perspective, the surface of this ocean is divided into the zones specific of the five streams – the imperfective, resultative, modal, future, and modal-contamination streams – that match the most common crosslinguistic paths of the grammatical growth of grams and, thus, templates of their meaning extensions. Each stream establishes the limits of its possible semantic influence, determining what could be referred to as a basin. Accordingly, the imperfective, resultative, modal, future and modal contamination streams constitute the fundamental geography of the ocean, determining the semantic basins located along them: the imperfective basin, the resultative basin, the modal basin, the future basin and the modal contamination basin, respectively. Each basin includes senses that are available along its own stream. Each basin runs towards its own attractor, which constitutes the ultimate meaning available on the stream in question. In this way, attractors and basins capture the phenomenon whereby different input locutions – characterised by, at least slightly, distinct initial properties – gradually converge towards similar categories during their grammatical life.

In order to design a global picture of the verbal system in terms of a five-stream ocean, a highly coarse-grained view must be adopted, where a stream appears as a unified channel hosting a number of waves and where a gram is represented as a unified object, a bi-dimensional curve (or even as a point; cf. Figures 7.19 and 7.20, below). However, the realistic situation is quite different. Each gram is more than a single wave organised along the linear  $x$ -axis and each stream can be divided into a number of more fine-grained sub-streams with their own attractors and basins, which differ from other sub-streams of the main channel. This phenomenon is, in a way, reverse to the inputs’ convergence towards basins and attractors explained in the previous paragraph. Now, a single gram can diverge towards two different attractors and basins, and, possibly, split into two categories.

Accordingly, by descending to more fine-grained levels of analysis and adopting a more detailed categorisation, every wave and every stream can be demonstrated to be complex. Each gram can travel along more than one stream because – as previously mentioned – grams can have very complex semantic maps where more than one evolutionary template operate simultaneously.<sup>295</sup> Rather than being single, monolithic waves, they are pulsating networks of waves. Some undulations are greater, while others are less visible. In a macroscopic, coarse-grained, global representation only the most important shapes in this undulated surface were taken into account, so that major linear streams – with their linear

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<sup>295</sup> Usually, the simultaneous participation in two or more streams stems from the influence of the contextual factors. This is most evident in the case of the modal contamination stream, which can attract any gram that otherwise develops along (at least in principle and originally) non-modal clines. Another factor motivating the bifurcation of a stream into sub-streams can be the meaning of roots, as certain predicates tend to travel one way, while the other usually evolve along the other (cf. the influence of the sense of an underlying verb in the fact of travelling along the anterior or simultaneous sub-streams). Finally, certain streams can give rise to meanings that can connect them to other streams, thus leading to new attractors (cf. the imperfective-path stream that, for various reasons, is related to the modal stream, which leads to modality).

waves – could be posited. In this way, the global system becomes easily accessible, still preserving dynamic, fuzzy and open properties. However, the realistic complexity greatly surpasses the five-stream model which focuses on robust features of the system. As explained above, the realistic pulsation of the web of streams and waves is overwhelming.

As a result, the global, macroscopic and coarse-grained model of the Basse Mandinka verbal system in terms of an ocean of five major streams (currents) with certain, more relevant, sub-streams (sub-currents) can be schematically formulated in the following certainly simplified manner:

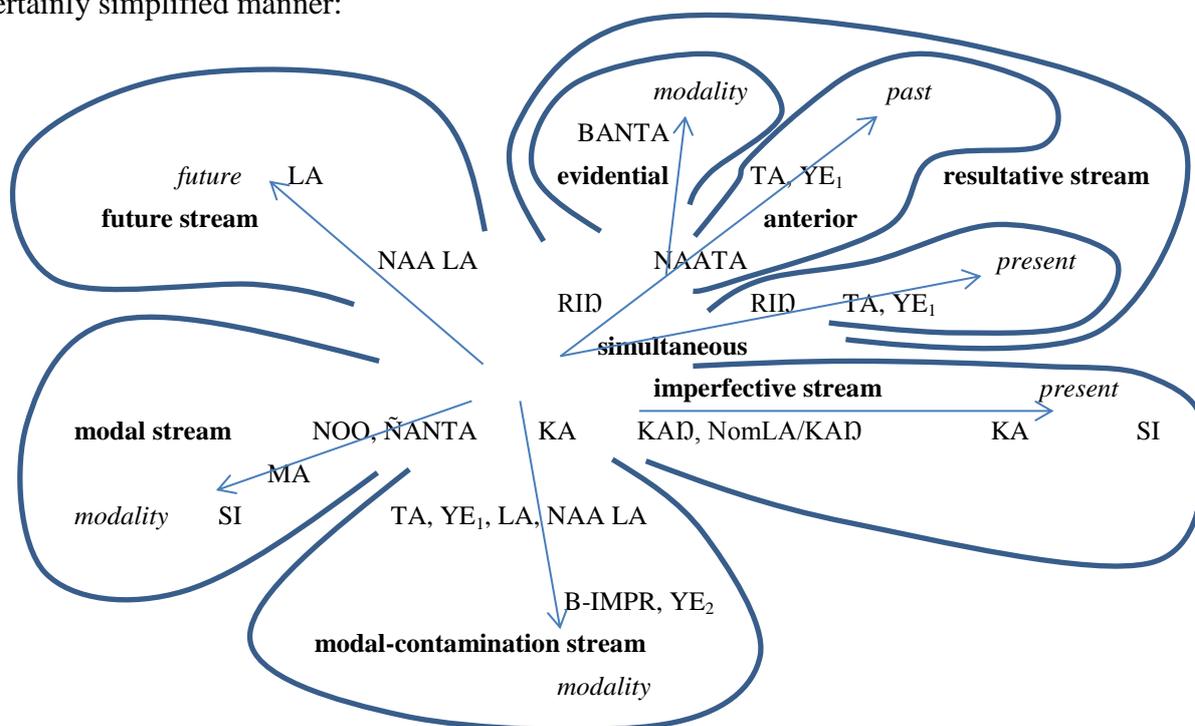


Figure 7.19: The Basse Mandinka verbal ocean – global and coarse-grained model<sup>296</sup>

This understanding of the verbal system of Basse Mandinka has further implications for the global view of this language. The language is not classifiable (in fact, cannot be) as a tense, aspect or mood language exclusively. It is rather, and necessarily, a system in which four meta-categories (tense, taxis, aspect, and mood) are important, as indicated by the waves of the grams and the structures of the streams. It is impossible to compress Basse Mandinka in and/or represent with static and rigid chains of idealised abstractions such as “it is an aspectual language”, “it is a tense language”, or “it is a mood-oriented language”. As explained in section 1.2.2.5, such a classification is almost impossible within the dynamic perspective adopted in this dissertation. Although the polarisation of a verbal system into a tense, aspect and/or mood prominent system is possible, it rather constitutes a by-product of grammaticalisation and derives from the relative position of grams on their path and the structure of the streams. Because of the multidimensionality of the grammaticalisation

<sup>296</sup> The positions of the grams on the streams are approximate and roughly correspond to the prototypicality peak of each gram’s wave. The position of the major five streams in the ocean is to a great extent arbitrary and should be taken in metaphorical terms rather than literally. This holds especially true for the modal, future and modal contamination stream that all traverse similar semantic domains (cf. section 7.2.2)

process, polysemy and wave nature of grams and their modularisation into dynamic streams, such a polarisation is extremely rare. On the contrary, given the fuzziness and dynamics of grams (waves) and modules (streams), verbal systems of languages – including Basse Mandinka – must be compositions of more than one meta-domain. Even if theoretically, a given domain is not typical of the Basse Mandinka language, it is evolutionarily important for a certain stream because it will be typical of a wave – and thus of a stream – at posterior developmental states of this language. Accordingly, Basse Mandinka does not display a system of contrasts or oppositions built in accordance with the principles of economy and symmetry, as claimed by structuralism and modernism. It is an asymmetric fuzzy system of numerous dynamic oppositions spanning, in different degrees, various levels of grammar.

### 7.2.2 Ocean of whirlpools

The analysis of grams and modules demonstrates that the ultimate outcomes of certain streams and, hence, their attractors are very similar, if not identical. For example, the future stream, the modal stream – themselves very similar in nature – and the modal contamination stream can all lead to syntactic modality and subjunctives. The imperfective stream can lead to analogous outcomes. In a similar vein, the domain of a present tense arises at advanced stages of the imperfective and resultative (more specifically, simultaneous) streams. If the intermediate developmental stages of streams – and not uniquely their ultimate phases – are included, the convergence or topological similarity of streams becomes even more evident, as various streams conduct through the same or similar semantic domains. For instance, the idea of epistemic modality arises both along evidential (a sub-stream of the resultative stream) and modal streams. To put it simply, it is difficult to overlook the fact that streams traverse similar semantic domains and can lead to comparable meanings.

As explained elsewhere, due to their crosslinguistic persistence, streams are relatively fixed channels that relate semantic domains by leading from more concrete (transparent) to more abstract (schematic). Given their long-term semantic convergence and running across similar domains, it is not the attractors or semantic exclusiveness that distinguishes streams from one another but rather the way in which they pass through the semantic surface of verbal semantics and, thus, the order in which they are related to semantic domains. Although they may, at the end, lead to similar semantic zones or traverse similar domains, they do so in a different manner – they pass through the areas of the ocean in a dissimilar order and affect different phyla of grams or waves.

Whether spatially (or geometrically) similar or not, streams converge at the very end of their topologies to a common mega-attractor. These mega-attractors can be imagined as highly schematic whirlpools towards which all the streams run down so that the cline of every stream is twisted or bent downwards, meeting other streams there.

At the most macroscopic level of analysis and from the most coarse-grained perspective, it is possible to distinguish a whirlpool of (syntactic) modality to which the modal stream(s), modal contamination stream, future stream and imperfective stream all flow down. Alternatively, one can identify a whirlpool of a definite past. This whirlpool attracts the anterior stream and the imperfective and simultaneous streams if they are located in a past

time frame. However, these two latter trajectories, especially if located in a present time frame, can also lead to modality at more advanced stages of development. There is also an intermediate – less potent – whirlpool of a present to which the imperfective and simultaneous streams gravitate in a present time frame. Once the attractor of a present tense is achieved, the larger whirlpool of modality draws the evolving grams nearer, detaching them from the present whirlpool’s gravitational pull. As a result, the ocean ceases to be a relatively flat surface (although undulated due to the waves’ peaks), but can be imagined as a three-dimensional sphere with streams descending towards whirlpools.<sup>297</sup>

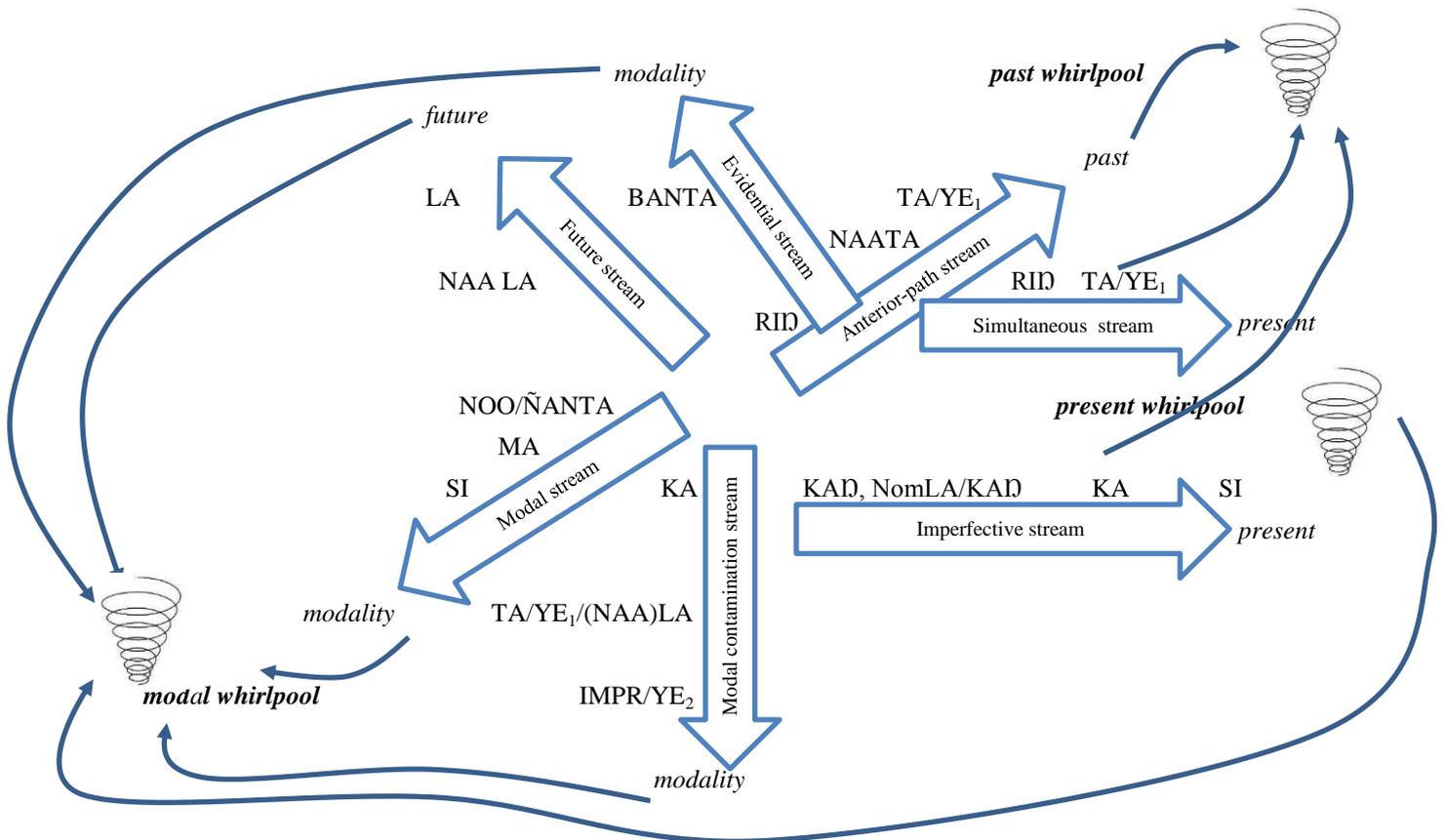


Figure 7.20: The Basse Mandinka verbal ocean – three-dimensional model of whirlpools<sup>298</sup>

Since streams may lead to or pass through identical (at least, at a certain level of granularity) semantic domains, thus sharing the topology of the semantic surface of the language, they are necessarily related to one another. Although for the need of transparency, the Basse Mandinka verbal system is pictured as a semantic surface cut up by five (or seven) streams, which have been analysed as relatively autonomous modules, it is important to emphasise that the streams interact.

<sup>297</sup> The ultimate and thus the most powerful whirlpools correspond to the domain of syntactic modality (subjunctive, conditional, etc.) and past tense. This may suggest that these two values have a special cognitive status crosslinguistically constituting the final stages of the evolution of grams (waves) and modules (currents).

<sup>298</sup> The positions of the whirlpools are purely theoretical and should not be understood *à la letter*.

This semantic overlap and connection among streams increase if a more fine-grained view is adopted, in which the major paths take the shape of multi directional networks. It has been mentioned that at the system's level, global generalisations are possible because an extremely macroscopic view is adopted, a view in which lower-level peculiarities and microscopic disturbances are ignored and networks appear as monolithic lines. As we ascend to the systemic level, small details cease to be perceivable and only the most robust features persist. It is from the macroscopic systemic perspective that the unidirectional and linear shapes of waves, streams and whirlpools emerge. However, since from a more fine-grained viewpoint, all vectors, waves and streams are multidirectional networks, composed of various sub-clines and branches, once such a multi-branched form of clines is recovered (and a coarse-grained representation zoomed in), the semantic overlap and correspondence between streams becomes evident.

Due to this semantic overlap between the streams, it is possible that the prototypicality area arising on one channel may stimulate the increase of relevance and systemic visibility of a corresponding area on another stream even though this zone is less lifted on that other stream. In fact, this attraction between the areas of two different streams that are semantically proximate may be so intense that the semantically compatible zones of these two streams (either prototypical or not) may converge and yield a joint two-path grammatical category. This happened in Germanic languages and in Greek. In the Germanic family, the resultative-path morphology (nowadays typically used to express a simple past value, such as *hann rann* 'he slipped, slid' in Icelandic) can be used with a limited set of verbs to form their Present Tense (e.g. *hann kann* 'he knows how to, can'), merging with the other, much larger, group of verbs whose present tense has arisen due to the imperfective path. In Basse Mandinka, this process seems to be less marked. Nevertheless, the YE<sub>1</sub> form such as *ɲa a loŋ* 'I know' (typological equivalent of *veit* 'I know' in Icelandic, a form that exhibits morphology of the preterite, or of *οἶδα* 'I know' in the Greek, morphologically a present perfect form) is the most prototypical way of expressing the semantic information of knowing something in a present time frame. From a purely semantic perspective, it is possible to postulate that similar to the situation in the Germanic languages and Greek, the category of the present is conveyed in Basse Mandinka by grams of two streams: the imperfective stream and the resultative (simultaneous) stream.

This means that the environment of a gram and its wave is expanded beyond the limits of its own stream. It also includes the global situation in the system and the properties of waves located on other streams. Therefore, the verbal system of Basse Mandinka can be imagined as a system where everything interacts with each other. Of course, some interactions are more crucial for a given object, but all the components of the ocean – from the most microscopic to the most macroscopic – somehow affect the remaining ones. It is like an organism where everything exerts some sort of impact on the remaining parts of the system, being at the same time inversely influenced by the system in its totality and by all its components individually (cf. sections 7.3.1.2-3 and 7.3.1.9, below).

To conclude, the verbal system of Basse Mandinka can be viewed as a pulsating living organism where each gram is defined by a kinetic momentum that specifies its position and direction in the stream, which is, in turn, located in the ocean. The grams form streams

and next, the streams run towards whirlpools. However, the structure of the streams and the organisation of the ocean in whirlpools, in a feedback-loop fashion, contribute to the semantic status of each gram (cf. the relation between the gram's wave and the other waves on the stream which has important bearing on the semantics of a gram). Thus, the grams viewed as holistic objects emerge both from their own intrinsic properties and from their place in the ocean. Grams are waves that glide towards new regions in accordance with the shape of the "ocean bed" (streams/currents and whirlpools) and their own propulsion (semantic properties).

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The macroscopic model designed in Figures 7.19 and 7.20 is extremely coarse-grained. Waves of grams are simplified to what we could understand as points on the arrow symbolising a stream. Although the dynamics of the system are preserved, less so are the dynamics of grams, as grams are not internally dynamic – the dynamics of a gram stem from its position in the stream and not from its own dynamic behaviour, which is codified in terms of a wave. A possible representation that is both macroscopic (holistic) and microscopic (fine-grained) and that provides a global macro-dynamic picture of the entire Basse Mandinka verbal system and the micro-dynamics of each individual gram is proposed in the Appendix (cf. the map attached to the dissertation). This chart provides the cartography of the verbal ocean of Basse Mandinka from a macro- and micro-perspective in which (synchronic and diachronic) dynamics both of the system and of each gram are equally preserved.

In this map, the shore corresponds to the area that includes the cloud of semantically transparent, lexico-syntactic analytical locutions. Given the behaviour of the grams in Basse Mandinka, it is possible to postulate three (or four) historical shores. From the first one, the grams of the first wave emerged, i.e. the TA, YE<sub>1</sub>, SI, B-IMPR and YE<sub>2</sub> formation, as well as, although slightly later, the BANTA and LA constructions. (Therefore is it possible to split the first shore into two sub-shores.) These grams are the most grammaticalised: their waves are the most advanced and they tend to be associated with the most advanced sections of the streams. By doing so, they are responsible for the density of the streams in their final sections. The chronologically second shore produced the second wave of grams, i.e. the KA, NAATA and NAA LA formations. These locutions are semi-advanced and are responsible for the density of the streams in their intermediate sections. Lastly, the most recent type of shore set in motion likewise the most recent waves of grams: the RII, KAI, NomKAI, NomLA, ÑANTA and NOO forms. These constructions are the least advanced, specialising in the initial portions of the streams and, thus, accounting for the density of the currents in their initial fragments.

The map schematically shows that, as they depart from the shore (being metaphorically dropped in the waters of the ocean), all the grams can travel along available channels: resultative (anterior, evidential and simultaneous), imperfective, modal contamination, modal and future streams. As they advance along one or more streams, they gradually approach one of the whirlpools that function as major semantic attractors in the semantic surface of the ocean (cf. section 7.3.1). In some cases, the attractor of a given stream is, in fact, an intermediate attractor. In such instances, a greater whirlpool attracts the

gram to a new gravitational centre – a new meaning. For example, some grams that evolve towards the past whirlpool may additionally approach the whirlpool of (syntactic) modality. This applies especially to the grams of the evidential path (see also the present attractor that is later attracted to syntactic modality). As a result, it seems that past and modality (syntactic) are the ultimate attractors to which all the grams run down (on these aspects see section 7.3.1).

It is important to note that although this map is principally synchronic helping a scholar to navigate through the waters of the Basse Mandinka verbal ocean, it is also diachronic. It concerns both reconstruction and prediction. It postulates what the origins (initial conditions or shores) of the system were and what its future behaviour may be (whirlpools and final attractors).

### 7.2.3 Ocean of domains

The representation developed above offers an entirely different approach to the systemic portrayal of the verbal semantics of Basse Mandinka: instead of designing a system of static modules, a system of dynamic channels that relate various semantic domains is proposed. Accordingly, the model seems to not only represent what grams can do with senses, but also what the universal semantic domains can do with the grams. As a result, the Basse Mandinka verbal system can also be understood in a different way. Instead of only constituting a system of grammatical forms (grams), it can also be viewed as a system of semantic domains (senses).

Traditionally, verbal systems – not only the verbal organisation of Basse Mandinka – are analysed in terms of a combination of grammatical categories that select determined meanings. Next, the grams – depending on their semantic properties, i.e. the semantic domains they chose – enter into oppositions or interactions, combine into modules, and these, in turn, deliver a complete system. This is the most classical approach to TTAM verbal systems. However, the ocean model of streams and whirlpools can suggest a different representation of verbal organisations. In this approximation, the domains are persistent and stable (as they must be expressed) while the factor that fluctuates (i.e. is selected) corresponds to the grams, i.e. the instruments by means of which the domains are expressed. Accordingly, from the systemic perspective, domains can be viewed as agents. To be exact, it is not only grams that enter into oppositions and interactions competing for domains so that they could express a given sense – domains can also fight among themselves for grams available in a language. Instead of grams acquiring senses, one is dealing with senses acquiring grams.

One can imagine that in this battle, each domain tends to attract as many grams as possible, at the same time, preventing other domains from using them. This can parallel the combat between grams during which each form struggles to conquer as many senses as possible along the path(s) it travels, making a place for itself in the stream. However, as a gram that spans the entire path is semantically very imprecise, constituting one of the reasons for the creation and development of novel, more efficient (i.e. precise) formations, an extremely “victorious” domain (i.e. the domain that attracts a great number of grams and thus can be conveyed by a multitude of alternative forms) is, in fact, weak. Its role in the system

decreases because the fact whereby it attracts various grams usually implies that such grams do a number of other jobs, which can be quite distant from the job ascribed to the domain in question. This may lead to the situation that such a semantic domain even ceases to be perceivable by language users. An example of this in Basse Mandinka may be the domain of an inclusive present perfect, which is expressed by almost all the grams of the imperfective and resultative streams (cf. chapters 2 and 3). It is not surprising that interviewed speakers were completely unaware of this domain – they do not conceptualise it as an independent sense.

One could propose that an ideal state would correspond to the situation where one domain only selects one gram, delivering a high degree of precision. However, this is virtually impossible, as domains are, in fact, common denominators for a number of more specific senses. The number of domains can range from very limited (a few domains) to extremely high (numerous domains) merely depending on the granularity established by the model. As explained in chapter 1, there is no rule for determining the limits of such granularity: at the most fine-grained approximation, there may be an infinite number of domains, since each sense or use of a form can be demonstrated to be somehow different from the others.<sup>299</sup> This ultimate infinity of domains – or the presence of an incontrollable number of possible domains – leads to another property. In a similar vein to the universal grammatical categories such as a perfect, a present or a past, domains are usually viewed as meta-equilibria to which grams settle and/or discrete stages on the stream. However, realistically what exists in languages are rather fuzzy and dynamic transition phases during which an idealised and, thus, abstract domain transmutes into another one by a consecutive chain (or rather a cloud) of an infinite number of intermediate domains. As explained in section 1.2.2.2, the discrete senses on grammaticalisation clines, and thus on the streams, are simplifications – rather than separated stages, what really exists is a continuum of transitional phases. Therefore in the clines and streams used in this dissertation (as well as, in Table 7.1 summarising the domains of Basse Mandinka), the senses are theoretical constructs, necessary approximations and unrealistic simplifications. They artificially divide the semantic space of the language into separated boxes. However, this space forms a continuum where domains transmute into one another, gradually and in a borderless manner. The semantic ocean bed – the system of domains – is not a complex of “tails” but submerged sandbanks or dunes of sand that gradually adopt dissimilar shapes, even though two adjacent sand molecules are almost indistinguishable from one another.

At a high granularity level – which was used for the analysis of the streams distinguished in the Basse Mandinka verbal system – the following relation between domains and their grams (with their own prototypicality degrees and streams along which they travel) can be formulated:

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<sup>299</sup> As explained, this also shows that the lemma of “one form – one function” is untenable.

Domain <sup>300</sup>	Gram	Stream	Prototypicality <sup>301</sup>
Simultaneity present / past	KAD	Imperfective stream	P
	Nom KAD	Imperfective stream	P
	NomLA	Imperfective stream	P
Ongoingness present / past	KAD	Imperfective stream	P
	Nom KAD	Imperfective stream	P
	NomLA	Imperfective stream	P
	KA	Imperfective stream	NP
Habituality present / past	KA	Imperfective stream	P
	KAD	Imperfective stream	NP
	NomKAD	Imperfective stream	NP
	NomLA	Imperfective stream	NP
	SI	Imperfective stream	NP
Non-stative present / past	RIID	Resultative (Simultaneous)	SP
	TA	Resultative (Simultaneous)	NP
	YE <sub>1</sub>	Resultative (Simultaneous)	NP
Stative present / past	RIID	Resultative (Simultaneous)	P
	TA	Resultative (Simultaneous)	P
	YE <sub>1</sub>	Resultative (Simultaneous)	NP
Resultative present /past	RIID	Resultative	P
	TA	Resultative	P
Present perfect / pluperfect	TA	Resultative (Anterior)	P
	NAATA	Resultative (Anterior)	P
	YE <sub>1</sub>	Resultative (Anterior)	P
	NAA LA <sup>302</sup>	Future stream (venitive / future perfect)	SP
	RIID	Resultative (Anterior)	NP

<sup>300</sup> It should be noted that a fine-grained and less unidirectional view leads to the representation in which streams share fewer semantic domains. On the contrary, if the macroscopic zooming persists, certain semantic domains can be regarded as shared by different grams.

<sup>301</sup> The degree of prototypicality in this column specifies whether a given domain is prototypical, semi-prototypical or non-prototypical in the semantic potential of the gram.

<sup>302</sup> The 'almost-', false and certain perfect.

Perfective past	TA	Resultative (Anterior)	P
	YE <sub>2</sub>	Resultative (Anterior)	P
	NAATA	Resultative (Anterior)	P
Non-perfective past	TA	Resultative (Anterior)	P
	YE <sub>1</sub>	Resultative (Anterior)	SP
	NAATA	Resultative (Anterior)	NP
Non-control	NAATA <sup>303</sup>	Resultative (Evidential)	P
Evidential	BANTA <sup>304</sup>	Resultative (Evidential)	NP
Inferential	BANTA <sup>305</sup>	Resultative (Evidential)	NP
Epistemic	BANTA <sup>306</sup>	Resultative (Evidential)	P
	SI	Imperfective stream / Modal stream	P
	ÑANTA	Modal stream	NP
	NOO	Modal stream	NP
Agentive modality	ÑANTA	Modal stream	P
	NOO	Modal stream	P
	NAA LA <sup>307</sup>	Future stream (venitive / future perfect)	SP
	SI	Imperfective stream / Modal stream	SP
	KA	Imperfective stream (Modal stream of habituals)	NP
Speaker-oriented modality	ÑANTA	Modal stream	P
	NOO	Modal stream	P
	MAA	Modal stream	P
	SI	Imperfective stream / Modal stream	P
	YE <sub>2</sub>	Modal contamination stream	P
	B-IMPR	Modal contamination stream	P
	NAA LA	Future stream (venitive / future perfect) <sup>308</sup>	P

<sup>303</sup> Related to the perfectal and perfective values of the NAATA.

<sup>304</sup> Concomitant with all the simultaneous and anterior path senses.

<sup>305</sup> Concomitant with all the simultaneous and anterior path senses.

<sup>306</sup> Concomitant with all the simultaneous and anterior path senses.

<sup>307</sup> The value of motion.

<sup>308</sup> The value of intention.

Modal future	SI	Imperfective stream / Modal stream	P
	NAA LA	Future stream (venitive / future perfect)	P
	NOO	Modal stream	NP
	ÑANTA	Modal stream	NP
	LA	Future path (predestination)	NP
Syntactic modality	SI	Imperfective stream / Modal stream / Modal contamination stream	P
	LA	Future stream (predestination) / Modal contamination stream	SP
	ÑANTA	Modal stream	NP
	NOO	Modal stream	NP
	KA	Imperfective stream / Modal contamination stream	NP
	NAA LA	Future stream (venitive / future perfect) / Modal contamination stream	NP
	TA	Modal contamination stream	NP
	YE <sub>1</sub>	Modal contamination stream	NP
Future perfect	NAA LA	Future stream (venitive / future perfect)	NP
	TA	Resultative stream (Anterior)	NP
	YE	Resultative stream (Anterior)	NP
Perfective future	NAA LA	Future stream (venitive / future perfect)	P
	TA	Resultative stream (Anterior)	NP
	YE	Resultative stream (Anterior)	NP
Simple future	SI	Imperfective stream / Modal stream	P
	LA	Future stream (predestination)	P
	NAA LA	Future stream (venitive / future perfect)	NP

Table 7.1: Domains and their expressions<sup>309</sup>

<sup>309</sup> At this stage of research, a dynamic representation of the domain-based sub-type of the model seems to be too difficult to be proposed. Therefore in this section, a static table is only provided. Certainly, such a motionless, discrete and closed representation is not compatible with the goals of the model. Having acknowledged this, it seems to me that the domain-based view, even in its imperfect form, should still be recognised, as it is one of the most important results that emerge from this study. Its more accurate presentation must however be postponed (see the Afterword).

It should be observed that although a similar sense can be expressed by different grams, these grams tend to do such a comparable job in different contexts (syntactic, pragmatic, lexical, etc.). Thus, the semantic overlap of grams is, in fact, relative.

In addition, even though an identical or similar sense is usually expressed by various grams, it does so with a different degree of prototypicality (i.e. the prototypicality of a given sense is distinct for grams compatible with it) and by relating it to a different constellation of values (i.e. the sense has been acquired by following different streams). These two facts imply that even if a gram  $g_1$  and a gram  $g_2$  are compatible with a sense  $s_x$ , they may produce different variations of this sense  $s_x$  because of their individual properties (the wave and its situation on the stream). The gram  $g_1$  will “colour” it by its own properties, delivering a sense  $s_x(g_1)$ , while the gram  $g_2$  will modify the sense  $s_x$  by the characteristics specific to it, thus producing a sense  $s_x(g_2)$ . This phenomenon can be reformulated in a less formal and more metaphorical language if we imagine a gram as a multi-coloured gum where each colour represents a sense. In a particular context, one of the possible values of a gram (previously integrated into the semantic potential) is activated and emphasised. It is taken out from the multi-coloured sphere that represents the semantic potential of the gram, to convey the sense that should be expressed given the need of the texts or the intentions of the speaker. However, as one chooses such an exact meaning, imposed by a given environment, and, thus, tugs a fragment of the gum, other values-colours follow because they are strongly tied to the selected piece, i.e. the one which we are pulling (Andrason 2010a:56). It is not only the context that specifies the sense that must be activated – and thus selects one of the possible grammatical means of expressions (a form) – but also the gram’s total semantic potential (in particular its most prototypical values) that in a feedback-loop manner “infects” the sense that was to be expressed. The relation between the context and a semantic domain which should be expressed, on the one hand, and the gram with an accordingly activated sense (the one that is compatible with the context and which is being activated) accompanied by its entire semantic potential on the other, is absolutely intricate. Both are given at the same time and contribute to one other. Their causal relation cannot be determined – both precede and both follow (cf. sections 7.3.1.2 and 7.3.1.4, below).

### 7.3 Complexity

As explained in section 1.2.1, complexity is an inherent property of all real-world systems – be they physical, chemical, biological, grammatical or any other systems. In the present section, I will demonstrate that the representation of the TTAM verbal organisation of Basse Mandinka developed in this dissertation constitutes an exemplary complexity model. By doing so, this model enables us to preserve properties that are typical of natural complex systems (section 7.3.1) and offers meta-methodological characteristics that distinguish it from non-complex types of modelling (section 7.3.2). As a result, this representation responds to the programme of modelling of language as a complex adaptive system postulated by Massip-Bonet (2013), Bastardas-Boada (2013a and 2013b) and Munné (2013; cf. section 1.2.2).

### 7.3.1 Complexity properties of the Basse Mandinka verbal system

Complex systems typically display the following properties: they are open, situated, boundary-free (fuzzy) and replete with unstable individuals; infinite (i.e. its cardinality is infinite), uncontrollable and uncertain; dynamic, metastable and path dependent; nonlinear, sensitive to initial conditions, exponentially amplifiable and in certain regions chaotic; emergent, non-additive, non-modularisable, irreducible and organisationally intricate; and lastly self-organising and adaptive. The following discussion will demonstrate that the Basse Mandinka verbal system, in the way it is modelled in this study, offers all these characteristics.

#### 7.3.1.1 Openness

First of all, the model presented in this dissertation makes an overt reference to the openness of the Basse Mandinka verbal system. As has been explained in section 1.2.1.1, openness means that the system is not treated in isolation from other parts of grammar and/or in isolation from non-grammatical sections of the language (e.g. speakers). Both are important factors influencing and conditioning the properties of the verbal system. The Basse Mandinka verbal organisation and, depending on the level of analysis, any of its subparts (such as a gram or a stream) constantly interact with the external world and environment by exchanging material, energy and information. In this manner, the system and its parts contribute to their respective external world, being at the same time affected by it.

The openness of the Basse Mandinka verbal organisation is particularly evident in the constant grammatical renewal of this language. Namely, the model indicates the way in which words can propel the formation of novel, periphrastic, grammatical constructions so that the grammatical inventory of verbal grams ('the core' of the verbal section of grammar) is constantly renovated by using more transparent lexical and syntactic material. As older categories become obsolete and disappear, new formations are continuously invented.

The wave-stream-ocean model presented above enables us to explicitly incorporate expressions that are still lexical or mainly pragmatic. It even makes room for constructions coined *ad hoc* and the meaning of which is based on conversational implicatures. Certainly, these formations do not belong to the said core of the verbal system, but – if approached from a dynamic perspective – do (and, in fact, significantly) contribute to it and will most probably enter this grammatical centre somewhere in the future. Accordingly, even though in this study, I have described the most stabilised constructions, the representation makes room for any additional, less stabilised, even idiolectal formation that may be found in Basse. In fact, the model necessitates such constructions because it is from them that central verbal grams (i.e. paradigmatic expressions of taxis, tense, aspect and mood) will later emerge. Each such novel formation can be represented as a gram located at the very initial section of a respective path. In the holistic macroscopic representation of the Basse Mandinka verbal space, the set of non-stabilised expressions may, in turn, be imagined as a cloud situated in the innermost place of the model (cf. Figures 7.19 and 7.20, above) or as the fourth shore of the ocean (cf.

the Appendix). This cloud and shore symbolise an innovative lexical-syntactic-pragmatic zone of the language where new, semantically transparent, possibly iconic locutions are constructed. For instance, as far as the imperfective stream is concerned, such a cloud includes a collection of periphrases composed of the verb *tara*, which may substitute various grams built from the non-verbal predicator *be* and *te*. This holds especially true for the KAI, NomKAI and NomLA formations, which can all employ the auxiliary *tara* in the TA gram instead of the *be/te* forms: *m tarata siinoo kaŋ* ‘I am sleeping’, *m tarata saferoo kaŋ* ‘I am reading’, *m tarata saferoo la* ‘I am reading’.<sup>310</sup>

The same type of openness is recoverable in streams. Streams are open because they presuppose that their density will change, especially due to the appearance of new constructions. Although they may be viewed as if in an evolutionary equilibrium, they are constantly unbalanced and disturbed at the local level. A great portion of this non-equilibrium stems from the creativity and thus openness of the system. As new components are continuously added and new waves emerge, the stream’s density is modified and the current “rejuvenated” (cf. section 7.2.1).

In the previous paragraphs, the property of openness has been explained as the influence of lexicon and/or syntax, whereby more concrete lexemes and analytic periphrases are treated as fuel in deriving more grammatical, functional and/or schematic expressions that travel along possible grammaticalisation paths. Another example of openness corresponding to the influence of grammar – in particular to the impact of modules in which grams are located or the organisation in which streams are positioned – will be explained in section 7.3.1.2, where the concept of situatedness is discussed.

In addition, the openness of the Basse Mandinka verbal system becomes apparent by the fact that the dynamic representation makes overt reference to speakers and their perception of grammatical forms. The structure of the semantic map deduced from the internal properties of the gram corresponds only to one component (so-called ‘factor’; Andrason & Visser forthcoming) that affords for the grammaticalisation status of this form as a means of conveying a certain meaning, i.e. as a category of taxis, aspect, tense or mood. The human actor (besides the environment, which will be discussed in more detail in section 7.3.1.2), with his or her cognitive capacities and constraints, is another important aspect, present in the model. To be exact, the model – although based on *performance* studies where maps, waves and streams have been designed given the physical empirical evidence – also takes into consideration the speakers’ perception. It shows how speakers possibly view the grammaticalisation position of a form and how they associate it with a particular meaning or function. As explained, these associations typically arise due to the total frequency of a form and its interaction with other grams travelling along the stream (Andrason & Visser forthcoming). These associations developed by users, in turn, contribute to the overall meaning of the gram itself, as the speakers’ mental representation may influence in a feedback-loop manner the sense conveyed by the construction on concrete occasions, and, in total at a more holistic level, fuel its further grammatical progress.

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<sup>310</sup> It is possible that these expressions have progressed on the cline and, from a dynamic perspective, the *tara* periphrases have abandoned the initial zone of lexical periphrastic transparent locutions, acquiring a more grammaticalised, stabilised and schematic status.

To conclude, as far as the waves and streams are concerned, such objects are open because they are “propelled by” and/or exchange the information with components that are supposedly external to them: other spheres of the system and human agent (actor or observer; see also section 7.3.1.2).

### 7.3.1.2 Situatedness

For natural complex systems, the concepts of openness and interaction with the external world are so relevant that all such bodies – as well as their constituents – are viewed as essentially situated entities: their behaviours depend not only on the parts of which they are composed but also on the whole(s) in which they are embedded. As any other complex body (or its subparts), the Basse Mandinka verbal organisation is inherently situated: it emerges and develops in response to the properties of the environment to the extreme that its own behaviour and the behaviour of its parts cannot be explained by uniquely analysing the components from which the system or sub-systems are built. On the contrary, the system (of any level) must include the whole in which it is embedded. In this way, the model shows that all the fragments of the Basse Mandinka language are embedded in a larger system and that, inversely, no component can be viewed as isolated with clear boundaries and fully externalised exogenous settings. As explained in section 2.1.2, boundaries at which a part of the language system interacts with the other sub-modules of the grammatical organisation, as well as the boundaries at which language comes into contact with the non-grammatical world (physical, biological, socio-cultural) are vital parts of the linguistic system itself.

In the Basse Mandinka language, situatedness may be seen at various levels. A sense is embedded in the wave which contributes to all individual activations of atomic values, colouring the contextually induced meaning by the semantic potential of the gram. A wave is embedded in a stream, the structure of which can have significant effects on the systemic prototypicality of the gram. A stream is embedded in the ocean, the properties of which also condition the embedded stream. This is especially evident when the semantic merger and/or topological similarities of different streams lead to the combination of two evolutionarily distinct grams into a single category (see the cases where the semantic present is expressed by grams of the imperfective and the resultative path; compare a similar phenomenon in Greek and Germanic).

This multi-level embedding implies that important properties of the system are dictated by its global situation and that the essence of a constituent derives from non-interiorised relations. As a result, the line between the system and its environment becomes fluid and the concept of a precise boundary problematic. The environment in which the system is inserted constitutes this system’s important part: it participates in the system’s behaviour and regulates it, being in turn simultaneously influenced by the system, which it frames. The environment stands in a fundamental, mutually causal relation with the system.

The situatedness is particularly visible in the relationship that exists between a sense and its wave, on the one hand, and between a wave and its stream, on the other. I will explain these two relational types in more detail.

First, the model shows that the information conveyed by a gram on a specific occasion (an individual sense) derives not only from the meaning activated due to the contextual needs and factors, but also stems from the structure of the wave of a gram. The sense – the semantic information conveyed by a gram in a particular time and place – is in fact a much more complex phenomenon than has been assumed at the beginning of this study. As has been explained at the end of section 7.2, although a certain sense is profiled in a given situation, the rest of the meaning, with particular relevance of the most prototypical sense(s) associated with the gram by the users, invariably follows the profiled value. The global kinetic vector or the wave of the gram always accompanies the specific use of this form. As suggested in section 7.2.3, in metaphorical terms, the gram can be visualised as a multi-coloured sphere of gum, where each colour represents a given sense. In a determined context, one of the possible senses is activated, being figuratively taken out from this multi-coloured composition. However, as we select this specific meaning and tug a piece of the gum out of the total sphere, other senses or colours follow because they are tied to the chosen fragment that is pulled out. Within this approximation, the most prototypical sense and, especially, the one that has been stabilised in the speakers' representation as the most salient, invariably accompanies the sense found on a specific occasion, even if it is this contextually activated sense – and not the other (i.e. the prototypical one) – that is profiled. This observation is highly important and demonstrates that two grams that are compatible with the same semantic domain – and that can be used in an identical context – do not necessarily produce the same effect. Grams are not only influenced by the context, but – given their different semantic potentials – they also colour the context (see also section 7.3.1.4).

Second, the model of the Basse Mandinka verbal system formulated in this dissertation shows that the systemic position of a form and its association with a determined meaning – and, hence, its grammaticalisation status as intuitively formulated by the speakers – arise not only from the semantic map or wave of this specific gram, but also from its interaction and competition with other grams travelling along a shared stream. In other words, grammaticalisation is not a straightforward product of the frequency offered by the components of the semantic potential of a form (or its internal prototypicality), but is also significantly conditioned by the location of the wave with respect to other waves on the stream (see, for instance, the interplay of the TA and YE<sub>2</sub> grams with the other waves of the resultative stream, presented in section 3.6, or the relationship between the waves of the LA and NAA LA forms, discussed in section 5.3). Thus, in the process of grammaticalisation, both the peak of prototypicality of a wave and its uniqueness on the stream play an important role. Consequently, the wave or semantic qualitative-quantitative map of a gram is not sufficient to determine the meaning of a form because the part of the system in which this construction is embedded significantly contributes to its overall meaning (i.e. this formation's) and even to its concrete manifestations.

Situatedness in an environment is likewise perceivable in the fact that a gram's realistic or product prototypicality (which transcends the prototypicality derived uniquely from the form's wave) is related to the way a given semantic domain is conveyed in the language. This type of prototypicality measure concerns not what the most prototypical sense of a given gram is, but what gram is the most prototypical means of conveying a certain

value. Accordingly, a formation tends to be constructed by speakers as the expression of senses that not only are prototypical of the gram in question, but that are also non-prototypical of other constructions (this is once more related to the relative topologies of the waves). In addition, the difference in the overall frequency of grams in the language is another crucial factor in determining a more inclusive measure of prototypicality, which goes beyond the internally based type, i.e. the wave plotted given the properties exhibited by a gram (cf. the visibility issue discussed in the analysis of the MAA and NAA LA constructions in sections 4.5 and 5.3, respectively).

Consequently, it is possible to state that the model of the Basse Mandinka verbal organisation postulates a more realistic representation of meaning based on grammaticalisation theory. In standard theoretical models of grammaticalisation, the role the environment – even though tacitly recognised – is omitted and the process usually portrayed as being entirely independent from the users and context. Accordingly, the grammaticalisation of a form is presented as an isolated phenomenon where a gram permutes into new evolutionary stages given its internal properties. Using the example of the anterior path, in a traditional model, if a gram locates its prototypicality in the area of a resultative sense, it is understood to be grammaticalised as a resultative proper. If the peak of the wave is located in the zone of perfectal senses, the locution is grammaticalised as a present perfect. Lastly, if the prototypicality area corresponds to the section of a past value, the form is grammaticalised as a past tense (either perfective or simple). Consequently, the model equates the empirical physical dimension of a gram with a sufficient cause triggering grammaticalisation. It treats grams in isolation from the environment, for instance from other grams and the broader system in general. However the structure of the semantic map offered internally by a gram corresponds only to one component (i.e. to the factor) that can afford for the grammaticalisation of this form as a means of conveying a certain meaning. The other important aspect – besides the actor, mentioned in the section dedicated to openness – is the environment.

By explicitly incorporating the environment and actor into the meaning of the gram and its grammaticalisation status, the model of waves and streams developed in this dissertation offers a more accurate account of grammaticalisation, namely, an account that is closer to the real state of affairs where both the environment and actors play crucial roles (Andrason & Visser forthcoming). Grammaticalisation that is found in a concrete language and that determines the meaning of a form is viewed as a set of affordances that enable the actors (users) to identify a grammatical factor (gram) with a determined grammatical status given this factor's environment (other grams of the same stream).

### 7.3.1.3 Boundary-less, fuzziness and individual's instability

As has already been discussed in sections 1.2.1 and 7.3.1.1-2, complex systems lack rigid and impermeable boundaries that could separate them – or their components – from the environment. Since the whole in which such systems or their components are embedded is these systems or these components' intrinsic part, realistic complex systems and their realistic components never end. Strict boundaries are artificial. An entity of a certain class transmutes

into another class, becoming thus a different entity, in an infinitely gradual manner. This means that any dichotomisation leads to drastic falsifications because it is not polar oppositions (or the states of a total compliance with an ideal membership) but intermediate and transition stages that are typical of nature.

The idea of fuzziness, which emerges from the abovementioned absence of boundaries, is overtly maintained in the model proposed in this dissertation. Namely, the qualitative-quantitative maps or waves enable us to preserve a diffuse and transitory character of the language, including the intermediary, unorthodox, blurry categorial status of its components, in our case, verbal grams. As soon as the idea of semantic variation (codified by the *x*-axis) and prototypicality of senses (codified by the *y*-axis) and their inherent relationship to fuzziness are recognised, the task of determining the exact line where objects stop belonging to a certain class and transmute into members of a different type becomes impossible. This borderline does not exist and if it is to be posited, it will inevitably be arbitrary, depending on the explainer and his or her utilitarian or pragmatic choice. Since, in the realistic universe, the transition is smooth and borderless, the answer to the question of where the exact line separating two grammatical classes is, does not reside in language but only in the eye of the observer. In fact, as already explained, from the fuzzy logic and dynamic model's perspective, such a question stops being pertinent and can be removed as unworthy of treating. What is interesting in the model, are not the crisp borderlines and impermeable categorial boxes, but the coherent whole of fuzzy transition phases.

Fuzziness is perceivable in vectors (qualitative fuzziness of grams), waves (qualitative-quantitative fuzziness of grams) and currents (qualitative-quantitative fuzziness of language modules). I will explain this fuzzy character of the Basse Mandinka verbal system by using the example of waves.

By being portrayed as dynamic curves which include all the senses (albeit grouped in a few boxes) and their prototypicality degree (again, rounded to four values adopted in this study: prototypical, semi-prototypical, non-prototypical and void), waves offer comprehensive definitions of grams without imposing rigid boundaries and without forcing the Basse Mandinka constructions to fit into a given taxonomical class. The model maintains the fuzziness of the language and verbal system by defining grams not as static objects but as transcategorial trajectories in which different domains co-occur and are expressed with distinct degrees of prototypicality. Rather than belonging to a given class, Basse Mandinka grams are viewed as approaching a certain type. Their essence never perfectly corresponds to a traditional, static category, but only satisfies a determined degree of sufficient conditions: grams resemble the class prototype in a certain extent given their qualitative and quantitative properties. In both types, this compliance corresponds to an infinitely gradual scale, ranging from 0 (i.e. 0%) to 1 (i.e. 100%) through an unlimited number of intermediate values. Even though in the model, the granularity is rather coarse (there are usually some five senses distinguished on the *x*-axis and four values on the *y*-axis), the fuzziness and transcategorial character of the Basse Mandinka grams is evident. By rendering the sharp line smoothed in the figures, the representation makes this fuzzy nature even more obvious, postulating that both the values of the *x*-axis (senses) and their prototypicalities (the *y*-axis) are in fact infinitely gradual.

Rather than designing a system of unrealistically crisp categories (a perfective aspect, a past tense, a mood, etc.), the model distinguishes more prototypical and less prototypical states. More prototypical members closely comply with the posited prototype, whereas less prototypical (or more non-prototypical) ones fail to exhibit certain relevant features assumed for the prototype. However, although the prototypicality poles are important for the determination of the clines, intermediate phases are significantly more common in Basse Mandinka in harmony with the inherent fuzziness of language – grams cover various semantic domains (being even able to span the entire length of a cline) and they also do so in multiple manners, as senses can be related to the degree of prototypicality in many ways.

The model has the advantage that it does not necessitate that we formulate any claim with respect to whether a gram is an aspect, tense, mood, etc. In fact, as already mentioned, from the perspective of fuzziness, such taxonomical determinations are entirely pointless. Since in the real world boundaries are fuzzy and the rigid frontiers are universally replaced by transition phases, the model emphasises the transitional character of grammatical forms, thus being compatible with any arrangement of data, even if approximated to a few domains of the *x*-axis and four values of the *y*-axis. The model determines the zones of prototypicality (the peaks of the curve) and suggests the most salient meaning. However, it does so, by still giving the full access to all possible non-prototypical sections of the map and, inversely, without marginalising such non-prototypical senses or removing them from the global picture. In this manner, the fuzziness of the Basse Mandinka verbal system does not mean that, in their minds, the speakers may not identify verbal formations as expressions of specific and clearly distinct aspectual, temporal or modal categories. The prototypicality zones and their relations show that such sharp associations may in fact be perceived and/or felt by the speakers. This, however, does not indicate how the language works as a system, but what humans think about their language. These phenomena – i.e. the language system in itself and the human perception of it – are different, although certainly connected, as they mutually contribute to one another (cf. section 7.3.1.2; see also next section 7.3.1.4).

Furthermore, since boundaries are arbitrary and fuzzy to the degree that external relations may constitute highly relevant characteristics of an entity, the concept of individuality is strongly undermined. Rather than being stable, close and crisp, individuals form fluid hierarchies of individuality. Complex systems are replete with unstable individuals. Individuals are not permanent and discrete but, instead, form hierarchies of changeable, unstable and fuzzy singularities. Any system is a component of a higher-level system – i.e. the organisation in which it is embedded – and, at the same time, embeds a number of lower-level systems as its own components. The structure of such hierarchical inclusion is infinite, ranging from the most microscopic to the most macroscopic. An entity that, at a certain level, appears as an individual is a component of another individual at more macroscopic levels. Inversely, if envisaged from a more microscopic perspective, an individual constitutes a system of closely collaborating elementary individuals.

The model developed in this study shows that the meaning of a given grammatical construction in the Basse Mandinka language constitutes a typical example of unstable individuality. At an intermediate-level, a gram may be treated as an individual, viz. as a dynamic portion of a path. It offers a certain more-global meaning that interacts with other

grammatical objects of the intermediate level of the system. At this moment, the meaning is the information which is attached to the form as such – it is its entire and vectored semantic potential, a wave. However, when analysed at a lower level of description, the formation equals a fluctuating mass of more atomic cases, senses, each one of them with its particular individuality (e.g. a specific sense offered by this formation in this place and time) and network of relations with other lower-level individuals (e.g. words appearing in the immediate vicinity that contribute to the context). On the contrary, if viewed from a more macroscopic perspective, the wave becomes part of the current. As a result, any object in the Basse Mandinka verbal system can act both as an individual (system in itself) or a component (a part of a system). A wave is a system of senses, a current is a system of waves, an ocean is a system of currents, and language is a body of systems.<sup>311</sup>

#### 7.3.1.4 Cardinality, uncontrollability and uncertainty

I explained in sections 1.2.1.1 and 1.2.1.3 that the cardinality of complex systems is infinite. Complex systems contain an infinite number of components, either individuals or relations. First, as far as the number of individuals is concerned, both grammatical and extra-linguistic elements present in a language are untreatable and, in light of the principle of instability of individuality, infinite. Second, with respect to the relations, an extreme cardinality of components (even if it is rounded to a finite amount) renders the number of relations existing among constituents totally uncontrollable. Although some relations are stronger and others seem to be weaker, all constituents of a complex system are related to the remaining components so that everything interacts with everything else in a circular and feedback-loop manner. As a result, the network of connections is absolutely gigantic.

The two types of cardinality – i.e. the number of individual components and relations existing among them – stems from the fact that the series with which one would like to represent the total information provided, even, by a microscopic component of a complex system (and thus to make such series complete) can be expanded infinitely. This infinite cardinality of a realistic descriptive series implies that any two series (i.e. any two empirical phenomena: individuals or relations) are (or can be demonstrated to be) different. Their sameness only depends on the adopted rounding and granularity.

Both types of infinite cardinality are preserved in the model of the Basse Mandinka verbal system designed in this dissertation. With respect to the cardinality of components, the following can be noted. First, although only 17 grams have been distinguished, the formative cardinality of this system (or its cardinal capacity) is explicitly viewed as infinite. Namely, each gram or wave derives from an immense number of atomic cases, imaginable as points which form the curve. In each one of them a different semantic value is profiled. As the map tentatively aims at being exhaustive and claims to represent *all* the possible instances, the number of such cases or points is infinite. This is exactly what the smoothed curve intends to

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<sup>311</sup> The instability of individualities explained above is related to their situatedness discussed in section 7.3.1.2. The properties of a lower-scale individual depend not only on its intrinsic values but also on the properties of the higher-scale individual. Thus, the higher-level (or hosting) individuals contribute to the character and behaviour of lower-level (hosted) individuals. This bi-directional relation shows that the hierarchical ladder of individuality is not only unstable but also inseparable and deeply interwoven.

represent as it stands for the infinity of empirical cases. It represents both registered senses and hypothesised ones (i.e. those that are inductively inferred). In other words, each curve is infinitely populated by its points, of which those making reference to the recorded cases are obviously much fewer (in fact infinitely) than those corresponding to the induced ones.<sup>312</sup> As a result, the wave model with its dynamic curve makes an overt reference to the infinity of the verbal meaning in the same manner as a geometric line encapsulates the idea of an infinite number of points on a wave. Although based on finite observations, the dynamic curves of the Basse Mandinka grams developed by means of induction tentatively accommodate the infinitum of realistic cases. To put it differently, all the synchronically possible occurrences of a gram should be tolerated by the wave definition, being possible to find their place within the limits established by the wave.

Second, in the representation developed in this study, due to the adopted categorisation, we have distinguished only a limited number of senses. However, as already explained, in the real world, there may be much more senses, even infinite, as the categorisation may vary from more fine-grained to more coarse-grained. Once more, the smoothed shape of the curve that represents the meaning of each gram overtly preserves this gradualness. In other words, the model acknowledges that there are in fact an infinite number of senses on the *x*-axis which gradually transmute from one prototype to another prototype, next to yet a different one, and so on (see the discussion of the semantic continuum of grammaticalisation paths in section 1.2.2.2).

Due to its smoothed and fuzzy shape, the wave model of a gram not only accommodates all the senses of any granularity, but in fact, necessitates them, as it always bestows us with the possibility of zooming, i.e. of adopting more coarse-grained or more fine-grained perspectives. This may be observed comparing the vectored maps (usually more fine-grained) and waves (usually more coarse-grained). Whatever perspective is chosen, the distinguished values will always correspond to certain meaning extensions that can be harmonised with the path, being possibly accommodated somewhere on it. Accordingly, even values that have not been determined in the present study – those which have failed to be distinguished because of the adopted categorisation – are fully compatible with the wave model, as the granularity of the path can simply be made more microscopic or the range and types of categories changed. As mentioned, the wave model is fully compatible with a zooming in or zooming out procedure and, thus, with any distinction of senses or their fusion into larger concepts. To a great degree, this fact liberates the definition of a gram from the chosen categorisation and granularity level. Although the exact shape of the wave clearly depends on the granularity of senses and, in particular, distinguished semantic domains, the designed wave is always compatible with waves of any other granularity and categorisation. Whatever “glasses” of categorisation we wear, the gram’s robust dynamic properties will persist, as they (i.e. these properties) simply reflect the evolutionary capacity of the form (cf. section 7.3.2, below).

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<sup>312</sup> As far as living languages are concerned, a gram offers an interminable production capacity. However, for its study, only a limited set of uses can be collected. Thus, the relation between a finite (and limited) set and infinite one is that the latter is infinitely bigger than the former.

With respect to the second type of cardinality, i.e. the infinite number of relations, the model shows that the intricacy of connections existing between senses, waves, streams and the ocean is absolutely overwhelming. I will explain this by discussing the relationship that underlines a wave and a stream.

As the gram's internal properties (i.e. senses offered on specific occasions) define its meaning as a wave and locate it on the stream, the composition of the stream exerts a significant influence on the systemic meaning of the construction and even on the precise semantic information conveyed on a specific occasion. This mutual interaction is infinitely complex constituting a reciprocal interplay of going back and forth from one level to another. To put it simply, the environment influences the entity, while being at the same time influenced by it. There is no exact starting point of this mutual interrelation, as neither the individual nor the environment comes first. Their relation is absolutely intricate involving an infinite number of interdependency acts. This is even so for two participants as in the case of a wave and its stream. I will demonstrate this by the following calculus (cf. Andrason 2014e). Let us posit variables  $X$  and  $Y$  with natural number indexes that indicate their values at given stages of the evolution  $X_1, X_2$  etc. This means that, at a certain stage of development, variables  $X$  and  $Y$  display the following values ( $f$  and  $g$  are functions that characterise the two developments):

$$X(n) = f(Y(n - 1))$$

and

$$Y(n - 1) = g(X(n - 2))$$

Thus, variable  $X$  at a moment  $n$  depends – by the way given by the function  $f$  – on variable  $Y$  but calculated in the moment  $n-1$ . Alternatively, at the same moment  $n-1$ , variable  $Y$  depends on  $X$  but counted at the moment  $n-2$ . Consequently, we obtain the following equation:

$$X(n) = f * g(X(n - 2))$$

This leads to the following differential equations where  $n$  is a real number:

$$\frac{dX}{dn} = f(Y(n))$$

and

$$\frac{dY}{dn} = g(X(n))$$

Thus, by differentiation:

$$\frac{d^2X}{dn^2} = \left(\frac{df}{dY}\right) * \left(\frac{dY}{dn}\right)$$

and next, by substitution

$$\frac{d^2X}{dn^2} = \left(\frac{df}{dY}\right) g(X(n))$$

where the expression

$$\frac{df}{dY} = h(Y)$$

is a new function of  $Y$ , noted as a function from the derivative  $X$ :

$$h(Y) = h * f^{-1}\left(\frac{dX}{dn}\right)$$

The final result is a differential second-order *nonlinear* equation, which demonstrates that any reciprocal dependency involves an overwhelming number of feedback acts, uncontrollable for even these two participants.

All other bi-member relations are intricate in a way which is fully equivalent to the intricacy of the relation between a wave and its stream. This also (but not exclusively) involves relations between any concrete sense of a gram and its global wave (see the metaphor of the gum and a colour), a sense and its co-text (textual content in a sentence), a current and the ocean, the ocean and grammar, etc. Moreover, the important relations that shape the semantics of a form and the system connect not only an entity to its immediate higher-level environment (for instance, a gram to its stream and the other grams travelling along it) but also, in a transversal manner, to other parts of the systems, be they senses/domains, waves or currents. This drastically increases the amount of possible relations and the extent of their interwovenness even at the relatively coarse-grained level adopted in this study. What makes it even more complicated is that there are relations in which three, four, and many more elements participate at the same time. The ultimate complexity of all such relations – and their cardinality – if operating concurrently, is overwhelming.

### 7.3.1.5 Dynamics, metastability and historicity

Complex systems are inherently dynamic. Evolution and change constitute central properties of real-world organisations and time is the primordial concept in physics, chemistry, biology and human sciences. Nowadays, everything in a complex system is viewed as a process and, hence, models of complexity regularly offer information that specifies the system's dynamics. They provide equations regulating this organisation's development. They relate the system's past to its present and predict possible future behaviours. As any other complex system, language is an inherently dynamic phenomenon, corresponding to a network of incessant fluctuations and modifications. Its stability is illusive.

The inherently dynamic character of language is fully recoverable in the model formulated in this study. It is particularly visible in the concepts of kinetic qualitative maps (i.e. semantic potentials networked by means of grammaticalisation paths), waves (i.e. qualitative-quantitative maps), streams (i.e. compositions of recursive waves of a certain type) and ocean (a complex body composed of streams and whirlpools).

First, the dynamic nature of language may be identified in cognitive definitions of meaning where the semantics of a construction is represented as a map. I have shown that at

this stage of the analysis, the meaning of a form as such is defined as the form's entire semantic potential (that includes all possible individual senses empirically "recorded" in specific realistic cases, measured with pre-established categories and inductively expanded to *all* instances) ordered by means of typological rules or grammaticalisation paths into a network of unidirectional trajectories. In this manner, semantic potentials cease to be static and invariant, but on the contrary, become "stretchable" so that the gram can appear in new contexts. By making use of evolutionary rules, which describe processes, our definition provides a synchronic classification of the meaning of a category in a dynamic, process-like manner. The synchronic meaning of a formation is a manifestation of a developmental course. It is an ongoing production of new uses and their extension to new contexts. Thus, the semantic potential and its ordered map are not closed nor is the meaning a static, immovable, fully equilibrated phenomenon. The meaning of a form may be – and constantly is – modified because users employ the construction in new environments. They modify it consciously or unconsciously by metaphorical and metonymical extensions and by analogical uses in contexts that are similar but not entirely the same. This is possible because such changes and extensions are either almost insignificant (the new use is so similar to the established one that there is no cognitive clash between them) or the two uses share certain important properties (e.g. an extent of semantic domain(s)) so that their relationship can be recovered and/or the new meaning successfully deduced from the older.

Accordingly, it is always possible to "stretch" the semantic space to new contexts or to "play" with the meaning of a form. In other words, while a semantic potential can be understood as a static picture of what is available at a time  $t$  (inductively assumed to represent all the uses), the path-ordered meaning becomes dynamic. It shows senses that are most likely to emerge soon and domains that are most probable to arise. At this point – that is to say where a static semantic potential becomes vectored – the definition makes an overt reference to evolutionary qualities of the construction and to evolutionary predispositions of languages, in general. We could imagine that at this moment, the definition includes something that corresponds to dynamic equations usually developed for physical objects. While a semantic potential describes different positions of a thing (i.e. different senses, constituting a type of potential energy of a form), the vectored meaning encompasses them within a single dynamic equation, thus giving insight into the construction's kinetic energy. In this manner, the properties of the movement (such as direction, order, etc.) enable us to predict – with a margin of error – where a grammatical object came from and where it is heading. Accordingly, the definition is not only explanatory or heuristic but also historically (prior and posterior) predictive.

In a similar vein, the representation of the meaning of grammatical forms as waves, which also builds on path templates included in qualitative models, provides important insight into the grams' development. To be exact, the path-modelling enriched by prototypicality information depicts the gram in the same process-like manner. However, while qualitative maps possess only one dimension of change (i.e. the modification of the semantic potential in accordance with the  $x$ -axis), the waves add a second dimension of change, i.e. the modification of the prototypicality value of the  $y$ -axis. As the curve indicates

the direction of change of both the range and prototypicality of senses, the definition of a form becomes even more dynamic.

The time dependency and kinetic-vectored nature of grammatical constructions is equally evident if forms, whose waves are organised along the same path, are compared and represented as spanning different sections on a shared grammaticalisation channel – a stream. If kinetic semantic potentials that share the same dynamic template (the  $x$ -axis) are modelled as recursive waves on a stream, their position is not only individual but also sequential, i.e. relative to the position of other grams. Both are chronological and, hence, dynamic in essence. Each one of the waves occupies a different section of the stream, especially with respect to their prototypicality, as the qualitative maps of grams can overlap. The first wave is the most advanced having its highest point in more advanced sections of the stream, while, historically, the last wave is the least advanced, with the most amplified portion of its topology (the wave crest) in the initial fragments of the stream. The semantic differences between grams stem from their dissimilar advancement on the cline, which in turn is conditioned by the distinct age of these formations.

When the stream is individualised into a coherent current, it can be understood as a dynamic phenomenon. It corresponds to a changing density of the surface or its topological disturbance. It fluctuates, offering younger or older shapes. The former increase the density of the initial sections of the stream, whereas the latter inflate the more advanced portions of the channel.

The dynamic nature of Basse Mandinka is also preserved at the holistic system's level where the verbal organisation is portrayed as an ocean organised along five – interwoven and interacting – streams that host propagating waves of grams. At this macro-perspective, the model of the verbal system gives direct access to the system's evolution, as everything is in a constant movement. This dynamic nature and unstable behaviour of the verbal ocean is principally determined by the five channels that, over long periods, have been canalising old and recent grams. Although the structure of such channels and their mutual connection constitute a long-term, and relatively stable, property in the dynamics of the Basse Mandinka verbal system, their particular states of density are constantly fluctuating. While the location of the five streams (with their intermediate and final stages) in the ocean's topology and the position of larger whirlpools mutate much less quickly, the change of the semantics of a gram and, thus, the modification of the density of the current are more rapid (the former being the quickest, since the kinetic maps and the waves are the most unstable). However, the robust topologies of currents and the ocean provide plausible hypotheses concerning previous (historically earlier) and future (historically posterior) states of grams. They can therefore be used to formulate plausible (and probable) hypotheses concerning the creation of entirely new formations (which do not exist yet) and/or postulate coarse properties of grams that have completely vanished from the language. As explained, this stems from the fact that the fluctuation of individuals is dissimilar at distinct levels of the language: it is most rapid for senses, less so for waves, still slower for currents and ultimately the slowest for the ocean. Nevertheless, all of them change.

The inherent dynamics of the Basse Mandinka verbal system, which is overtly preserved in the model, is strongly related to another typical property of complex bodies, i.e.

metastability. Metastability holds that phenomena that are considered static objects and conceptualised as fixed states are in fact processes. What we call ‘objects’ are processes that emerge from fluctuations, changes and more microscopic developments as well as from the macroscopic dynamic power of the global system.

The use of the mapping founded upon grammaticalisation clines makes it possible to analyse individual grams, their compositions into modules, and the entire verbal system as metastable, i.e. as objects and, simultaneously, as processes. The verbal gram defined, first, as a qualitative and, next, quantitative semantic potential defines the entity in terms of a coherent object determining its finite (and static) topology. The former defines it as a map of connected senses, while the latter classifies it as a map raised at prototypicality peaks (i.e. as a wave). In this manner, a map or wave can both be further conceptualised as synchronic states – motionless pictures of a gram. They can be represented as points in a state-space that represents the evolutionary trajectory of the individual. However, the map and wave are also vectored or kinetic. They always inform us about the gram’s dynamics. As explained above, they correspond to dynamic equations that specify the momentum of an item, preserving its process-like nature. In this manner, the map and wave model of a grammatical formation enable us to treat this entity as an object (which may be important for higher generalisations) and as a process.

In the same way, each stream of the Basse Mandinka verbal system offers a metastable vision of this fragment of the verbal organisation. Its topological representation corresponds to a static definition, while the vectored orientation introduces kinetic information conveying important information concerning the stream’s dynamics and the dynamics of the grams that are hosted by it. In other words, although a given module can – for a certain approximation – be viewed as a static geometric figure, it always enables us to recover its inherent dynamic character whereby it reappears as a process in which time and change are crucial.

Lastly, the entire verbal system of Basse Mandinka, organised into currents and whirlpools and represented as a geometric three-dimensional sphere portrays the language as a metastable phenomenon: on the one hand, it enables us to define it as a static topology comparable with the topologies rendered by other languages, and on the other hand, it always gives us access to recover the process-like nature of this linguistic system.

The inherently dynamic character of complex systems is also evident in the property of historicity of such organisations and their strong dependency on previous stages. As far as language is concerned, the history (or the earlier states) clearly conditions both its present shape and any future development. Languages are path dependent so that the momentum of a linguistic system is regulated by the – already dynamic – initial conditions (i.e. the state of the system where the “first step” was made), by the conditions of the adjacent parts of the environment, and by all the intermediate conditions that have existed since this most original starting point (of course, such an initial moment is a simplification and its precise location depends on the model and explainer).

The model of the Basse Mandinka verbal system makes an explicit reference to the historicity of this language. All the grams are connected to their possible inputs that approximate the most relevant set of initial conditions. Thus, the path dependency is seen in

the fact that the kinetic definitions in terms of clines, waves or streams are compatible with the lexical and/or syntactic sources from which a given gram has arguably emerged. This original locution is expected – and *de facto* always appears as such – to be compatible with and motivate (along with certain environmental factors) all the values available currently in the use of this form in Basse Mandinka. It should also be compatible with any other stage during the history of a given form, as well as with its possible states in the future. However, the path-dependency does not imply a blind determinism in the way that the grammaticalisation path explains and predicts the entire behaviour of a gram. As mentioned above, historicity implies that any stage of the gram depends not only on the dynamic equation (the grammaticalisation path) but also on initial and intermediary conditions in which the gram with its path is embedded. It is the kinetic energy (the grammaticalisation path) and the structure of the system (the ocean and all its components) that jointly deliver the gram's properties and condition its grammatical life.

Being dynamic, metastable and path-dependent, the path-wave-stream-ocean model of the Basse Mandinka verbal system is predictive both as far as the reconstruction and anticipation are concerned. To be exact, given the path-dependency principle, by determining the present state of a grammatical item and knowing the dynamic equation that defines its behaviour, one can with a high degree of probability reconstruct the most plausible origin of the gram and its future evolution. In this way, we can travel the path back and forth in time, proposing the most likely input and output states. Consequently, as the definitions in terms of paths, waves, streams (currents) and the ocean have both synchronic and diachronic dimensions, this model lends itself to historical-comparative investigations.

### 7.3.1.6 Nonlinearity and high sensitivity to initial conditions

Nonlinearity is another property typical of complex systems. As has been explained in the introductory chapter, nonlinearity means that when evolving, the outputs of a system are not directly proportional to the inputs so that a microscopic disturbance can be amplified in an exponential manner, beyond any margin of control, having disproportional impacts on the system after a certain time (cf. section 1.2.1.1).

The property of being nonlinear is compatible with the model of the Basse Mandinka verbal system developed in this study. The dynamic representation in terms of a fluctuating ocean is able to elucidate why linguistic systems – or their components – that emerged from a common ancestor have become dissimilar, even though the differences between them would originally have been insignificant or non-existent within a certain approximation. More specifically, it explicates how and why the same source expression may have undergone – to a certain degree – distinct evolutions, reaching dissimilar developmental stages in related languages. The reasons for this are related to two properties that have already been discussed: infinite cardinality and infinite connectivity (cf. section 7.3.1.4).

First, to be complete, series describing the states of realistic objects should be infinite. However, as this is physically impossible, in any scientific description, they must be finite – they are thus rounded and approximated. Accordingly, the state is represented as a finite number of data that necessarily disregards some less relevant or secondary (according to the

adopted model) pieces of information. To put it simply, certain initially small variables are ignored. In the representation developed in this dissertation, I have taken into consideration a limited set of semantic properties, be they qualitative (a finite number of categories of an intermediate granularity have been recognised) and quantitative (only four degrees of prototypicality have been distinguished). Although the model provides and builds on various pieces of evidence, due to the infinite complexity of real-world systems, it also ignores an immeasurable portion of information.

Second, as explained in sections 1.2.1.1 and 7.3.1.4, the number of relations connecting components of a complex system, or even elements of one of its modules is infinite. Since everything is related to everything else, the network of relations extant in a complex body is overwhelming. In the model proposed for the Basse Mandinka verbal system, I have only acknowledged the most relevant connections that link certain components, in particular the relations with other waves on the stream. However, the realistic amount of relations is infinite because every component is related to all the remaining components and at all possible levels. Due to this unlimited connectivity of any construction to all the other elements and spheres of the system, the ignored margin of error previously assumed in my description of the state of a gram (which is, in fact, infinite) inflates exponentially. Small disturbances in initial data – omitted for a linguistic description because they are treated as insignificant – affect the running of the evolutionary process to the extent that even though the grams develop by following deterministic laws (i.e. grammaticalisation paths) they can diverge significantly. In other words, the ignored error has a great impact on the evolution of constructions in the way that any two grams, almost equal at the beginning (because they are derived from the same input source) acquire different properties and behaviours after a long period of time. It is, thus, not surprising that constructions which emerged from common ancestors have become quite distinct in daughter languages. There has always been a minimal difference in broadly understood initial conditions of these grams in the two languages, which due to the infinite number of relations existing in the input system (a common ancestor, e.g. proto-Manding or proto-Mande) have been amplified exponentially. Additionally, as the two systems split, the intermediate conditions, which can be acknowledged or ignored in the modelling – especially, changing parameters of the grammatical environment – can further disturb the evolution of a gram, being responsible for subsequent divergences.

The dynamic complex model of the Basse Mandinka verbal organisation provides cases of such divergence which neither contradict the principles of unidirectionality of grammaticalisation paths nor disconnect the fate of a given Basse Mandinka gram from its cognates. An example of an exponential divergence can be the development of the NAA LA gram in Basse Mandinka if compared to Bambara. As explained in section 5.2, in Basse Mandinka this formation has strong perfective connotations, whereas in Bambara the perfective nuances are irrelevant and the construction merely functions as a general future. Although the two expressions derive from an identical locution built around the verb *naa* ‘come’, the evolution in Basse Mandinka has, most probably, been “disturbed” by the formation of an entire NAA perfective paradigm. In this manner, some values in the initial state of the NAA LA periphrasis in Basse Mandinka and Bambara – omitted in the general

model of grammaticalisation clines and in the analysis specific to this construction – as well as the extreme connectivity of these ignored elements to the rest of the verbal system have jointly led to a visible dissimilarity between the variants of this form in the two languages.

Other instances of nonlinearity and sensitivity to initial conditions can be illustrated by the LA and MAA formations. The absence of the use of the LA form with the sense of a present (as this construction is only employed as a future in Basse Mandinka), in contrast to the usage in many other related languages, where it also functions as a (progressive) present, may stem from insignificant differences in dialectal input systems (cf. section 5.1). For example, although, the LA constructions in Basse Mandinka and other Manding dialects can be traced to a common ancestor that most probably existed in Proto-Manding, due to the ignored error margin, the originally identical construction has acquired quite distinct shapes and properties in the two dialects.

The structural dissimilarities that characterise the MAA gram in Mandinka and Bambara can be elucidated in a similar vein. As explained in section 4.3, in Bambara, the formation appears with the equivalent of the TA construction, while in Basse Mandinka it never does so. This formal difference may result from a nonlinear inflation of the error margin assumed for the description of the initial state of the proto-form. This ignored information (and the information related to all other intermediate conditions) arguably contributed to a partly dissimilar development of the MAA gram in the two daughter languages.

To conclude, the dynamic model of the Basse Mandinka verbal organisation with its concepts of cline, wave, stream and ocean fully acknowledges the importance of nonlinearity and sensitivity to initial conditions, enabling us to harmonise not only similar but also dissimilar cognate grams in related languages.

### 7.3.1.7 Chaos, determinism and unpredictability

The concepts of nonlinearity and sensitivity are deeply related to another trait of complex systems – chaos. In general and non-formal terms, chaos theory is a mathematical model which describes the unpredictable behaviour of nonlinear dynamic systems that, albeit governed by deterministic rules under the form of dynamic equations, are highly sensitive to initial conditions. In other words, chaotic systems are unpredictable in the long term although laws governing them are, in principle, deterministic. Once more, due to the nonlinearity of the relations existing in complex systems, the margin of error or rounding assumed in any approximation, after a time, exponentially inflates the previously controlled inaccuracy, rendering any exact prediction (or reconstruction) of the state of a language (or even one component) invalid. The uncertainty or the error assumed in rounding will be inflated exponentially and the calculation fallacious.

The model of the Basse Mandinka verbal organisation maintains the two conditions of chaos: the representation is both deterministic and long-term microscopically unpredictable.

First of all, the model is deterministic. The grammaticalisation paths are viewed as operating in the quality of deterministic laws governing the evolution of grams. Similar to dynamic equations, they enable us to “calculate” the state of a construction at the present

moment and estimate its possible states at previous and posterior historical times. The same applies to higher-level objects such as streams and oceans.

Paths can be viewed as entirely deterministic because they are treated as universal abstract theoretic laws. The universality of trajectories (i.e. the fact that they are intended to operate in all languages and to be valid in all geographical and temporal locations) as well as their unidirectionality (i.e. the claim whereby the paths are not reversible and thus that the order of stages located on a cline is invariable) refer to the abstract model and not to empirical cases (Dahl 2000a:12 and Traugott 2001:1, 5). They operate at a higher level of abstraction, in a so-called ideal world where various “noises” have been ignored. It is at this level where they are both universal and unidirectional. In this way, a given evolutionary pattern – derived from limited empirical evidence – is assumed by induction to be universal and represent *all* possible instances. Nevertheless, this universality refers to an abstracted model in which the process in question has been simplified enough so that it could be theoretically and scientifically manageable, and represented as isolated from the remaining parts of the system. Through idealising, we treat a given law as an independent formula. Contrary to the realistic situation, no interactions with the adjacent world are usually envisaged. But this is the only way any empirical science can work. Propositions of a scientific model not only overgeneralise but also profoundly idealise the universe – they never portray the world as it is. They state how a given phenomenon would be if it was perceived independently, in isolation or in ideal conditions – any friction, disturbing forces or accidents are simply treated as if they did not exist (Auyung 1998a).

Since the paths are deterministic rules that codify the most likely meaning extensions of grams of a certain type, they may be used for short-time predictions. That is to say, the life of a grammatical formation is controlled by deterministic laws. Such laws, comparable to dynamic equations, predict a unique successor phase for every stage in the process: given certain initial conditions (the current state of a gram) and parameters (for instance, the environmental factors), the rule – similar to a dynamic calculation – predicts the gram’s immediate subsequent behaviour. For instance, let us assume that an expression currently provides all meanings typical of the category of a present perfect up to the phase of an experiential perfect. Given this, it is highly probable that at a next evolutionary stage (and especially if the verbal system within which this form develops includes in its repertory a gram whose prototypicality corresponds to more advanced sections of the anterior cline, e.g. a past tense), the semantic potential of this construction will be analogous to the meaning offered now, but additionally enriched by the subsequent sense predicted by the rule, i.e. the value of an indefinite perfect and immediate (hodiernal) past. As a result, one can, with a good degree of certainty, estimate a short term development of a gram. It is very likely that its state will be modified in accordance with the rule, i.e. by incorporating or losing the values immediately adjacent to the extreme portions of the map (especially, if there are no environmental obstacles and/or if the adjacent environment allows it). To summarise, the developmental process of grams is deterministic within a short time interval, as each evolutionary stage is immediately followed by strictly determined extensions in agreement with the universal dynamic rules. When acquiring a new sense, grams cannot jump to remote, conceptually unconnected domains. There is no randomness in the acquisition of new values.

However, this deterministic nature of grammatical universal paths or laws and a relative certainty as for the short-term development of concrete grams clash with long-term unpredictability of the behaviour of grammatical formations. As explained above, whereas grammaticalisation paths represent a theoretical order of acquisition of new senses, entirely free of noise (by which they regulate the development of grams), they do not portray realistic evolutionary cases. Grams do not evolve in the way that a stage on the grammaticalisation path represents a state of a gram at consecutive developmental periods. The realistic evolution of grams can only be represented by using the concept of a state-trajectory which represents consecutive sets of accumulated meanings that arose in accordance with the rules dictated by the grammaticalisation paths. While such rules are deterministic, the state-trajectory representing a realistic evolutionary case is not. It may only be predicted within a short time span and already within an error bound. A long-term prediction is impossible. This unpredictability has its roots in the previously discussed infinite cardinality of components and relations, nonlinearity and sensitivity to the initial conditions.

Although we control – to an extent – the state of the system at a given time  $t$ , and comprehend the deterministic nature of operating rules, the exact state of a realistic grammatical construction after hundreds or thousands of years cannot be predicted, even within a margin of error. When determining the state of a gram, we establish a finite set of some – in our view relevant – features. Even though we monitor a high number of features, there will always be something left out: some short-term, supposedly, unimportant grammatical characteristics and relations. Due to the infinite cardinality of complex systems, this ignored portion of information will invariably be immeasurable. This reduction of the infinite reality to a limited collection of features and elimination of minor unimportant facts may be considered an error margin, necessary in our finite descriptions. However, during the evolution of grams, the inflation of the assumed inaccuracy increases exponentially and the predictability of the exact state of a gram after a long interval becomes almost impossible.

All of this means that although laws governing language evolution are in theory deterministic – in the way that each effect has its deterministic immediate cause – an exact and complete outline of long-term evolution (or reconstruction) is unpredictable (or unrecoverable). Due to the sensitivity to the initial conditions and exponential inflation of the error, the exact state of a gram after a long interval of time cannot be estimated although the laws governing such organisms are deterministic and each single next-stage change is predictable (again, within an error bound). Supposedly unimportant differences in initial data render long-term predictions impossible although the systems have no random elements involved.

Thus, the concepts of universality and unidirectionality do not imply that all concrete grammatical construction will always develop in the same manner. They mean that language evolution is driven by a number of theoretical principles. These abstract – overgeneralised and idealised – truths are universally valid. However, as they jointly operate in a given system, they interact, are superposed, collide with and/or cancel one other, giving the impression of irregular behaviours. In addition, as some of these principles are stronger while others seem to be weaker, the activation of the weak rules is deeply conditioned by the way the strong rules operate.

The model of Basse Mandinka verbal system is based upon deterministic equations or grammaticalisation paths and employs them as explanatory templates for the synchronic state of a gram, module or the entire system. However, its predictability in the way that it would enable us to determine previous states of the system or its components is always regarded as probabilistic with the probability decreasing proportionally (or even exponentially) to the time separating the present moment and the period of the reconstructed state, and the details of such predictions. Although the paths give us a chance to travel back and reconstruct the origins of a form, this reconstruction is always subject to probability given the chaotic nature of the system.

In addition, the model presented in this dissertation offers higher-level generalisations typical of chaos and complexity theory. These include concepts of (strange) attractors, basins, bifurcations and aperiodicity, which significantly regularise the running of chaotic systems. In complexity theory, an attractor is a set towards which a dynamic, not necessarily chaotic, system evolves within a given interval of time. Put differently, it represents the value (or a set of values) that is approached by the trajectories originating from different initial conditions (Auyang 1998b:7). In the model of the Basse Mandinka verbal system, the attractor corresponds to the terminal stage of the development as posited by grammaticalisation theory and may be equated with the meaning which is the last to be incorporated and the last to be abandoned. Consequently, it is the final value displayed by the gram before it disappears or is recycled for new grammatical purposes. As observed by Dahl (2000a, 2000b) and Bybee, Perkins & Pagliuca (1994), grams developing along the same universal paths – although originated in different initial inputs – usually converge at the end of the evolutionary process. They tend to acquire the same state (within an error bound, cf. the approximation of the infinite data discussed above). Thus, an attractor may be considered the long-term steady behaviour of realistic grammatical evolutionary processes. For instance, all original resultative grams (TA, YE<sub>1</sub>, NAATA and RII) may be viewed as developing towards past tenses which, at later phases of evolution, are reduced to the function of a remote narrative past, only. However, since the evolution of grams is aperiodic (see further below in this section) and the state of a gram at the terminal moment of its development is never identical to the states displayed by other grams controlled by the same dynamic law represented by a grammaticalisation path, the attractor will always appear as a set of (highly similar but not duplicate) states. Topologically, final states of such originally resultative constructions will approach closer and closer a fictionalised terminal situation. In other words, although a given class of grams tends to converge into a typologically similar category, the states of such constructions at highly advanced phases of development will never repeat themselves because of the sensitivity to initial conditions and error inflation. They will rather converge toward a portion of space, more and more confined on the idealised attractor. Consequently, the realistic development of grams can be imagined as dense: the points which represent evolutionary terminal stages are dense on the attractor so that any point in the ambient space is theoretically approached closely by a trajectory. Due to the aperiodicity, the confinement is infinite and, hence, the attractor can be understood as corresponding to a strange attractor characteristic of chaotic systems.

Universal grammaticalisation paths are complex in the sense that a single path typically consists of multiple sub-trajectories leading to various outputs. Accordingly, the model of the Basse Mandinka verbal system presented here exhibits more than one attractor or strange attractor for a single gram (wave) or module (current). In the former case, the representation yields various attraction poles responsible for meaning extensions that network the semantics of a gram or grams, while in the latter case, it yields various sets of confined ultimate states. If there is more than one attractor, the map of a gram or a system and the state-space of a linguistic dynamic development will be divided into a determined number of basins of attraction that separate from each other at the bifurcation points. These points correspond to a change in the qualitative pattern of attractors. Up to a determined moment, the trajectories symbolising the evolution of grams departing from certain initial conditions are confined within an error bound similar to that assumed in measuring the initial state of the formations in question. However at a given time, due to the modification in parameters<sup>313</sup> controlling the system, the developmental processes will diverge exponentially. They will head towards two distinct terminal states or attractors, leading, thus, to the formation of two independent grammatical constructions.

This bifurcation of a single gram into two individuals can be illustrated by a split that usually occurs along the resultative path. Until a certain moment, a resultative-path construction is a coherent gram characterised by a semantic potential (and thus topology) in accordance with two main sub-trajectories of the resultative path: anterior and simultaneous clines. However, at a determined moment, the two sub-tracks diverge entirely and the formation separates into two independent grams. The type that follows the anterior path is commonly grammaticalised as a past while the type that evolves along the simultaneous cline is reanalysed as a present or its sub-categories. As previously explained, this happened in various Indo-European languages (Germanic, Greek, Latin, Slavic, etc.). In Basse Mandinka, one witnesses the beginning of this process, as the semantic category of the present includes not only grams of the imperfective stream (especially the KA gram) but also certain forms of the resultative stream (in particular, some verbs used in the TA and YE<sub>1</sub> grams). Thus, the canonical idea of a present tense or present-ness can be expressed both by the KA form (e.g. *n ka a ke* ‘I do’; as well as other grams of the imperfective stream; cf. chapter 2) and by some TA/YE<sub>1</sub> forms (e.g. *ɲa a loŋ* ‘I know’; cf. chapter 3).

Lastly, state trajectories representing realistic evolutions of grams are also unrepeatable – they are aperiodic. Even though evolutions are driven by deterministic laws causing a formation to develop from a pre-established input (initial stage according to a path-law) to a pre-established output (a meaning which corresponds to the final stage of a path-law), concrete developmental processes, which are propelled by the same grammaticalisation path, are never identical. This means that there are no two identical realistic evolutionary patterns even though they would have developed from identical sources, both crosslinguistically and genetically. The aperiodic character is assured by the error margin in the initial conditions and its inflation during the further development. For instance, the

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<sup>313</sup> The parameters may be viewed as a certain set of relevant properties of the system within which the grams evolve. This set can include any environmental features, such as behaviours offered by any component of the larger system in which the evolution of the gram(s) under analysis is embedded.

grammatical growth of an originally resultative formation in two related languages will not be indistinguishable nor entirely identical – the evolutions will never duplicate themselves because the states of the grams will diverge in some values. In this way, it is expected that the cognate forms in Basse Mandinka and other Manding and Mande languages would range from more similar to less similar, without being indistinguishable (they must be somewhat distinct), on the one hand, and without being entirely unconnected (they must have shared at least a portion of their paths), on the other hand.

Chaos, however, does not undermine the possibility of positing robust, relatively stable features in the system, such as the structure of the individualised streams and the topology of the ocean. These macroscopic properties usually persist for a long time, as they are less susceptible to an immediate, drastic change. Their modification rate is much lower than the rate of microscopic fluctuations underlying grams and their waves. Hence, their predictability is greater.

### 7.3.1.8 Emergence, non-additivity and non-modularity

Another characteristic that distinguishes complex systems is the fact that they exhibit emergent properties. Emergent properties are higher level traits that are neither qualitatively comparable nor analogous to the traits present in constituents of a lower level. Emergent properties are not directly derivable (i.e. resultant) from lower-level entities. In other words, higher levels bring new “exotic” properties which cannot be explained by merely adding properties of the components found at the lower level (cf. section 1.2.1.1).

The model of the Basse Mandinka verbal system designed in this dissertation enables us to recover the emergent character of the language. In general terms, the dynamics and meta-stability of a synchronic gram and the entire system, as well as chaos (if its evolution is a factor of concern), are the three most evident emergent properties exhibited by the system at higher levels of analysis. By doing so, the model shows that the language is not a simple aggregate of its atomic material. On the contrary, new non-resultant properties appear as constituents organise themselves so that the system, as a whole, develops novel characteristics which did not exist at the constituents’ level.

As explained on various occasions, the meaning of a form as such – i.e. the total meaning of a verbal entity – is much more than a mere summation of concrete microscopic instances where this item appears. Above all, it exhibits certain qualitative properties that did not exist at a lower level. When the form is analysed as a holistic phenomenon, the vector of direction or the kinetic energy becomes an integral feature of the semantic representation: atomic empirical instances belonging to the micro-level organise into a dynamic structure of a higher rank, a gram viewed as a developing phenomenon. Here, time and evolution are central parameters. A set-theoretic union of microscopic senses available on concrete occasions (the polysemy of a gram) comes to make reference to the evolutionary capacity of grammatical forms. This novel property can clearly be recognised in semantic (both qualitative and quantitative) maps organised along grammaticalisation paths which have been used to represent and define the total meaning of grams. In these representations, the time-dependency or vectored orientation is a new emergent characteristic of a formation,

unperceivable at the microscopic level where the description of atomic cases is conducted. The vectorisation of the semantic potential not only introduces the cohesion to the variety of senses, but also directs them from an input (both conceptual and historical) to further extensions. Consequently, apart from defining the synchronic state of a formation, the map (or wave) predicts possible future routes of development and the origin of this gram.

As argued previously in this chapter, the use of a mapping based upon universal clines enables us to systematically portray grams as meta-stable, i.e. as individuals and as processes at the same time. It should again be noted that this is only possible at a more macroscopic level where the gram is envisaged as a holistic phenomenon. The metastability of gram(s), modules and the entire system – viewed as waves, streams and an ocean – corresponds to the second emergent property, unperceivable and not directly derivable from the empirical, microscopic level where the description of atomic cases is conducted (cf. section 7.3.1.5, above).

The third emergent property, fully recoverable in the model of the Basse Mandinka verbal organisation, is its chaotic character: although any gram (and the whole system) is mapped and vectored by means of (theoretical) universal – and hence in principle deterministic – templates, long-term precise predictions and reconstructions are impossible. They are impossible not because of a non-deterministic or non-universal character of the rules governing meaning extensions and, thus, maps that are based on them, but because of the cardinality of the system, its nonlinearity and exponential sensitivity to error bound that is assumed when determining initial conditions. The chaotic properties such as (strange) attractors, basins and aperiodicity are all emergent characteristics of the Basse Mandinka language, fully acknowledged and, in fact, necessitated by the model (cf. section 7.3.1.7).

All of this means that the Basse Mandinka verbal system – as any complex body in general – is non-additive, non-modularisable and irreducible. In accordance with the principles governing complex systems, the Basse Mandinka verbal organisation cannot be explained by a microanalysis into independent parts because the system is not a simple computation of its isolated constituents. It is impossible to divide the system or its subsystems into isolated, individual portions without an important loss of information. Although the system is composed of multiple modules and echelons characterised by properties and processes specific to them, such parts and components always interplay – they are closely connected and in fact inseparable. Important features are recognisable only from the perspective of the whole system or larger parts, as they are conditioned by a more global organisation in which a given element is embedded. Thus, any modularisation into lower and disconnected echelons of analysis triggers a damage of information (cf. the phenomena of situatedness and fluidity of individuality discussed in section 7.3.1.2 and 7.3.1.3, respectively).

Although I analysed the grams as individual modules, I constantly emphasised their connectivity. The modules cannot be fully separated, as grams either develop along more than one stream or travel across semantic domains that are also visited by other streams and their waves. It is thus either the dynamics of grams themselves or the dynamics of semantic domains that relate verbal constructions to modules, different from those to which they inherently belong and in which they have been placed in this dissertation. For instance, all the

grams of the resultative stream (except the NAATA form) are connected to the imperfective stream, since they also concern the idea of a present tense. In fact, the relation between these two streams also exists with respect to the concept of a past, because the imperfective stream also traverses this semantic domain. Comparable relationships occur between the modal stream and the future stream (and the imperfective stream), between the resultative stream (cf. the evidential path) and the modal stream, and between all the streams and the modal contamination stream. When modularising the system into sub-parts one must always keep in mind the topology of the entire ocean with all its currents and semantic domains.

Rather than being composed of modules, the structure of the Basse Mandinka verbal system approximates a highly sophisticated organic body where components of a lower level are embedded in entities of a higher level to whose behaviour they contribute and by whose properties they are inversely conditioned. The organisational depth is thus multi-dimensional, multi-level, multi-phasic with intra and inter-level relations and with top-down and bottom-up causations. In this global and non-modularisable structure, a mechanic modular view collapses. A more organic analysis must be employed instead (cf. the next section).

#### 7.3.1.9 Organisational intricacy and self-organisation

Since macro-levels are not mere additive conglomerates of micro-properties and the whole is not directly reducible and straightforwardly modularisable into unrelated parts, but rather various levels exist, being embedded in one another and influencing one another – each one with its specific emergent properties that differentiate it from the lower and higher planes – the organisational depth of the system and its intricacy is extreme. In order to cope with this organisational involvedness, the modular, mechanic, micro-analytic view cannot be used. In its place, a more organic analysis, in which both the macro- and micro-descriptions, as well as their interrelations are acknowledged, must be adopted.

The model developed in this study preserves, to a great degree, the organisational intricacy, depth and sophistication of the Basse Mandinka verbal organisation. I will demonstrate this intricacy with some examples.

First, it is evident that the properties of Basse Mandinka grammatical constructions are distinct at different granularity perspectives and levels of analysis. They are different when analysed at microscopic and at macroscopic levels. They are also distinct if analysed from a fine-grained or coarse-grained perspective. It is impossible to say what a gram *is*. Its properties, relations and behaviour change depending on the viewpoints from which it is studied. For instance, qualitative and/or quantitative maps – and thus conceptualisations of grams – adopt different shapes depending on the chosen level of granularity and analysis. The concept of a wave, itself, emerges only at a more macroscopic perspective where certain weaker relations and microscopic fluctuations are ignored. Streams (especially in their individualised form) are even greater macro-truths and can be developed only if a more macroscopic perspective is adopted. Finally, the topology of the ocean corresponds to the most macroscopic view, where local disturbances are entirely ignored.

As in any science dealing with complexity, in order to deliver higher generalisations and systemic “truths”, a gradually more macroscopic view must be adopted. However, the

model always gives us the possibility to recover microscopic information. This means that each wave can be demonstrated to be more complex than it has been proposed for a certain generalisation. It can be shown to consist of various sub-paths – it is a multidirectional space or map composed of various sub-clines, themselves located in different time frames. Thus, the representation offered in this dissertation bestows us with the possibility to discover higher macroscopic generalisations (here, only robust properties or relations, relevant for the global system, are taken into consideration) and to recover the most microscopic facts where the empirical data (single observations) are in focus. The model gives access to all the echelons of the system's complexity, from the most salient relations of a given level to the weakest ones, and from the most macroscopic and systemic to the most microscopic and analytical. Although at the end of the study, a holistic, global, macroscopic, highly generalised and coarse-grained representation has been proposed in which a gram appears as a coherent, compact and uniform object, one can always step back to lower levels of description and show that the realistic status of that formation is in fact less clean – the gram is an unstable and fluctuating amassment of atomic cases.

Second, the organisational intricacy and non-modularisation can be recognised in the fact that Basse Mandinka verbal constructions – themselves belonging to various granularities, levels and dimensions – are irreducible to a system of binary oppositions, typical of a tidy structuralist representation. Due to the organisational multifariousness, the commensurability between grams involves a great number of features and parameters. Generally, each verbal formation can be made distinguishable by, at least, the following six features:

- a) Different scope of components of their semantic potential (i.e. different senses);
- b) Different shape of the kinetic semantic potential due to different clines along which grams are organised (i.e. a different vector and different  $x$ -axis of the wave);
- c) Different shape of the wave as a consequence of the differences in prototypicality of senses (i.e. different values of the  $y$ -axis);
- d) Participation in different streams and, thus, different relations with other waves on the stream (i.e. a different immediate environment influencing the behaviour of the gram);
- e) Different advancement on identical clines in case the grams develop along the same paths and, thus, a distinction in the order of waves on the stream;
- f) Different places in the ocean and different relations to the other streams and the topology of the semantic domains of the language.

Given this complex scale of differences, the comparison of any two formations is far from being simple. An explication in binary terms is entirely impossible.

Although grams are highly sophisticated and their contrasts convoluted, the model presented in this dissertation enables us to compare them in quite an easy manner, while maintaining their complexity. As mentioned above, grams usually participate in more than

one stream. Each gram can, therefore, be vectored and mapped by means of various clines. This means that at a more microscopic level of description, grams are themselves extremely complicated geometric figures with multiple branches. This makes, in turn, a simple comparison between them almost impossible. However, grams can be compared from a more coarse-grained and more macroscopic perspective where weaker properties and relations are ignored. As this global large-scale view is adopted, and waves and, subsequently, streams are constructed, the comparison of grams becomes feasible.

This is of course an important simplification. Nevertheless, the wave-stream-ocean model is much less simplistic than any structuralist description. Similarly to structuralist representations, in order to develop higher level generalisations and make the comparison of grams possible, the dynamic model must establish limits of its precision – some facts and relations must be ignored. Nevertheless, contrary to structuralism, it does not reduce the comparison of grams to one or two distinctive parameters and a binary relation of meeting such traits (i.e. in terms of +/-). Instead, the wave-stream-ocean model contrasts bi-dimensional and dynamic topologies of waves, which is significantly more complex than any representation developed by structuralism. In addition, the dynamic model always gives access to the details of more microscopic and fine-grained analyses because of its zooming capacity. As a result, it is able to deal with a greater degree of intricacy involved in the commensurability between two or more constructions.

Third, the explanatory technique adopted in this study, which includes both micro-explanations (available at the empirical analytical level) and macro-explanations (available at the system's level), enables us to detect another typical property of complex organisations – its bi-directional causation. The model overtly indicates that the causation is not only bottom-up but also top-down. The study at an analytic (micro-)level leads upwards to a synthetic (macro-)level and then back from the system's level downwards to atomic cases. An analytic study of atomic senses enabled us to develop the notion of a semantic potential and the idea of meaning understood as a path-ordered polysemous network and/or a wave. After that, the wave together with other waves of the same evolutionary type rendered the stream. Streams were then individualised and combined into the ocean. This type of model construction follows a typical bottom-up approach, where individuals of a lower level combine and deliver higher level objects.

However, once the ocean, streams and waves are discovered, their properties, in an inverted direction, influence the properties of the individuals of a lower level. The topology of the ocean importantly influences the stream, relating it to other streams and semantic domains. The stream influences a wave, having significant bearing on the form's systemic meaning and perception. And the wave influences an individual sense of a gram registered on a concrete occasion, as the vectored semantic potential “sticks” to the form.

Thus, as a wave derives from senses, the stream derives from waves, and the ocean derives from streams (bottom-up causation), a stream is conditioned by the ocean, a wave is conditioned by the stream, and a sense is conditioned by the wave (top-down causation). This interaction goes on in an interminable back and forth manner to perpetuity as in the manner of classical complex systems because atomic components influence the entire system in the same manner as the system influences them all. There is no exact starting point of this mutual

interrelation – neither the micro- nor the macro-level/properties come first (Auyang 1998a, 1998b).

Such extreme intricacy of the Basse Mandinka verbal system results in the possibility of this system to be viewed as adaptive – it is an auto-regulating organism in which all the components are embedded and to which they all contribute.

To conclude, the Basse Mandinka verbal system can be treated as an exemplary complex organisation: it is open, situated, boundary-free, fuzzy with unstable individuals, infinitely cardinal, uncontrollable, dynamic, metastable, path dependent, sensitive to initial conditions, nonlinear, deterministically chaotic, replete with emergent properties, non-additive, non-modularisable, organisationally intricate and self-organising, characterised by bottom-up and top-down types of causation and accessible at analytic-microscopic and synthetic-macroscopic levels. The proposed model preserves all these properties, at least to a certain degree. By doing so, it complies better with the requirements imposed by the most advanced approach in treating realistic systems – complexity theory.

### 7.3.2 Complexity properties of the model

The characteristics of the Basse Mandinka verbal organisation in terms of a prototypical complex system presented above have important consequences as far as its scientific treatment in models is concerned. As explained in section 1.2.1.2, models of complex systems – not only the properties of complex systems themselves – distinguish such organisational structures from other non-complex systems and their representations. To be exact, models of complexity are necessarily incomplete, provisional and pluralistic. By exhibiting different degrees of complexity, they form a continuum of possible representations.

#### 7.3.2.1 Incompleteness and provisionality of models

Since complex systems are incompressible and irreducible, their scientific representations – irrespective of the extent of sophistication – are invariably incomplete. Realistic complex systems (which are infinite, open and situated) can never be entirely compressed by models (which are by definition finite, isolated and partial). Thus, all models of complex systems inevitably simplify, making reference only to a limited portion of the realistic body. As this portion is, in fact, infinite, the part of reality ignored in the model will inevitably affect the running of the system. This is amplified by nonlinearity and high sensitivity to initial conditions characterising complex systems. The incompressibility and irreducibility of real-world complex systems and the incompleteness of their models jointly imply that representations of complex systems are necessarily provisional and fragmentary. The degree of their sophistication can always be expanded (cf. section 1.2.1.2).

Incompleteness is overtly recoverable in the model of the Basse Mandinka verbal system proposed in this dissertation. Most importantly, the representation acknowledges the limitations imposed by the granularity and categorisation adopted in this research. First, a

single wave or a stream can exhibit different topologies depending on whether categories, adopted in the analysis, are more coarse-grained (semantic domains are grouped into larger ones) or more fine-grained (broad domains are fragmented into more specific ones). Accordingly, the granularity of categorisation has important effects on higher generalisations. Its modification may yield different macro-structures and different emergent traits (compare differences in the topologies of the modal-path grams arising from whether the stages of speaker-oriented and epistemic modality are viewed as a single phase or as separated phases; cf. section 4.5).

Second, dissimilar premises selected for the description and analysis condition higher level generalisations. For instance, the wave shape of the grams that evolve along the modal and future paths, and thus the structure of the modal and future streams depend on whether the stage of futurity is included in these trajectories. Nevertheless, it has been explained that different topologies conditioned by distinct granularities and categorisations can all be harmonised and viewed as compatible.

Third, the incompleteness of the model also stems from its (i.e. this model's) partial isolation from the other portions of grammar. The verbal ocean is disconnected from other multi-phasic and multi-level "waters" pulsating in the linguistic system of Basse Mandinka. Although openness and situatedness are incorporated in the model, they are only so to a certain degree. Since it is impossible to completely open and situate the model (the model would have to be as complex as the entire universe or, at least, as the entire language), it was necessary to establish the limits of this connectivity to the external areas. Of course, it is always possible to incorporate other sections of the language into the model and, thus, connect it better to the remaining parts of the grammar.

Four, the model is also incomplete in the quotidian sense of this word. Namely, the representation – being an inductive generalisation – is built on fewer cases than may be found in the real world. It is incomplete because it is not backed up by the totality of evidence, which is simply impossible to obtain. This also means that the conclusions of the model are stronger than its empirical foundation allows it. The model has a surplus of content – it introduces regularity to the areas that do not have to be so regular. This regularity derives from rounding. However, even though the model is, to a degree, fictional, we can still extract a broad range of features from it, simply by knowing that it is approximately true and tolerably realistic.

To conclude, being fully aware of these limitations and theory-laden restrictions, the model makes no claims as to be exhaustive and complete. It is evident that its results profoundly depend on the theoretical frame adopted by the author. The representation rather offers a new view of the Basse Mandinka verbal organisation, harmonious with the cognitive understanding of meaning and the theory of complex systems. By doing so, it approximates the modelled systems in a more accurate way, i.e. closer to reality because reality is complex. However, this model is provisional: as the degree of understanding of paths and grammaticalisation constantly increases and the theoretical framework evolves being steadily improved, the model is open to future emendations (see Afterword).

### 7.3.2.2 Plurality of Models

As explained above, by delimitating the content and scope of analysis and by resorting to categorisation, which is to an extent arbitrary and external to the realistic universe, any model of complexity necessarily falsifies reality. This falsification also stems from the fact that epistemologically one cannot separate the observer from the world. This implies that, in general, the relation type between the models of a complex system and the states of this realistic target organisation is many-to-many. As a result, the study of complex systems implies a number of perspectives – various models can represent the same realistic phenomenon because various manners of representation are conceivable. As each model only responds to the questions relevant to itself, no representation can answer all the questions (cf. section 1.2.1.2).

By recognising the principle of plurality of models, the representation of the Basse Mandinka verbal system developed in this dissertation – rather than presenting the view that disregards and nullifies the grammatical tradition – intends to incorporate various proposals offered thus far for Mandinka and the Manding dialects. The wave-stream-ocean model aims to accommodate almost all the theories developed so far. In this manner, the classical analyses (Rowlands 1959, Creissels 1983a, Lück & Henderson 1992 and Creissels & Sambou 2013, and even Macbrair 1842:20 and Hamlyn 1935) – including those that constitute fragmentary descriptions rather than consistent theories (Gamble 1987, Colley 1995, WEC 2002), those developed for related languages, such as Bambara (Koné 1984, Blecke 1988/2004, Idiatov 2000, Dumestre 2003), Kita Maninka (Keita 1986, Creissels 2009), Maninka of Kolona (Dumestre & Hosaka 2000), Lele (Vydrin 2009b), Korokan and Maukakan (Creissels 1987/1988, 1982), as well as those that are diachronically oriented (Kastenholz 1996, 2003, Tröbs 2003, 2004a, 2009 and Babaev 2011) – remain valuable, providing in various cases a number of important insights into the semantics of the (Basse) Mandinka, Manding and Mande verbal constructions. For example, the views that the TA form is a perfect, a completive or perfective aspect, a stative, a past tense, or a combination of such categories can all be accommodated in the dynamic model, as the domains of a perfect, perfective and past constitute important components of the wave of this gram and its stream.

Therefore, rather than being radically disconnected from the scholarly tradition and incompatible with it, the complexity representation gives us the opportunity to combine findings and observations offered by the previous studies into a wider perspective. Certain shortcomings and inadequacies related to the structuralist, modernistic and over-rational foundations of classical representations can be avoided, while new concepts, developed by the most contemporarily cutting-edge and innovative frameworks such as complexity theory and cognitive science can additionally be introduced. In this way, the model should be thought of as an inclusive culmination of previous scholarship with certain important novel properties, which are specific to complexity and cognitive theories. In this manner, new horizons of analysis and explanation can be designed, while the valuable tradition is still preserved.

### 7.3.2.3 Continuum of models of increasing complexity

Models of complex systems inevitably simplify. They can only treat complexity by making what is complex simpler.<sup>314</sup> The problem is that there is no a rule of thumb for developing models of complex systems and delimiting their minimal complexity (i.e. complexity pertinent to such models). As explained in section 1.2.1.2, the less reductionist and simplistic a model is and/or the more accurately it preserves typical properties of complex systems – being still treatable or transparent enough to be comprehended – the “better” it is. However, because of various reasons (most of them being dictated by theoretical foundations and utilitarian needs), models of complexity can range from less to more complex. What is most commonly maintained in such representation irrespectively of the degree of their complexity is a multi-level structure of the model (the model includes at least two related scales: the composite macro-scale or macro-explanation, and a variety of situated micro-scales or micro-explanations)<sup>315</sup> and the bi-directional type of causation between the distinguished levels (bottom-up and top-down).

The representation of the Basse Mandinka verbal system formulated in this study can be regarded as a typical complexity model of an intermediate degree of sophistication and intricacy. It is possible to view it as a type of a many-body model, rather than organic (highly specialised constituents of a variety of types that are strongly coupled and integrated into the whole) or cybernetic (a joint combination of many-body systems and organic systems). As in various many-body representations, in the model of Basse Mandinka, a large number of constituents of a few types are connected to each other by a few types of relations. It is the nonlinearity that renders this model complex. However, constituting an inevitable approximation, certain properties are treated as resultant. More importantly, the modules of the system are partially isolated in the way that the impact of the remaining portion of the ocean is regarded as exogenous parameters, on which the dynamics of the module have no influence. Only by doing so, i.e. by controlling this theoretical isolation, some factors can be determined as causal. Additionally, when yielding holistic or systemic statements, a more coarse-grained view of the system is adopted in which the monstrosity of details is eliminated for the sake of clean generalisations. Lastly, although dynamics underlie the model, more macroscopic representations seem to partially settle into equilibrium. Even though waves, streams and oceans are dynamic and chaotic, their topological and more global definitions give the impression of stability, order and complementarity.

Although characterised by an intermediate degree of complexity, the model offers the possibility to be reinterpreted into a more as well as a less complex manner. Depending on the necessity of a study, more complex (more dynamic, more open, more situated, more cardinal, more emergent, more organisationally sophisticate, etc.) or less complex (more isolated, more modular, more resultant, more static, etc.) representations can be derived.

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<sup>314</sup> However, it must be emphasised that this simplification is incomparable with oversimplifications and falsifications that characterise structuralism and modernism. There is an immense qualitative and quantitative difference in the simplification found in complex and non-complex models.

<sup>315</sup> The former account for the behaviour and dynamics of the global system, while the latter couple the dynamics of the whole to the dynamics of underlying constituents and their connections.

Nevertheless, it is hypothesised that the representation presented here will always remain compatible with these lower or higher degrees of complexity.



## AFTERWORD

By demonstrating that the Basse Mandinka verbal system can – and should – be modelled as a prototypical complex body, I have reached the primary objective of this dissertation. By doing so, I am convinced that the present study has responded to many questions, hopefully advancing the understanding of verbal semantics not only of Basse Mandinka but also of language in general.

However, despite its innovations and contributions, this analysis did not solve – in fact could not solve – all the problems related to the Basse Mandinka verbal organisation, TTAM semantics, and the modelling of languages. This partially stems from the incompleteness and provisional nature of all models of complexity, and partially hinges on approximations and simplifications accepted for this study. The former type of difficulties and/or imperfections, which are typical of any representation of complex systems and, thus, unavoidable, were extensively dealt with in section 7.3.2. The latter type is specific to this model and will be treated in more detail below.

The present research has two major limitations. Both of them directly derive from simplifications that, viewed as unavoidable at this stage of investigation, had to be accepted at the beginning of the study. The first type of shortcoming is related to the properties of the vertical *y*-axis of the waves. In this dissertation, the *y*-axis exhibits only four values. In an ideal situation – which I was actually able to develop in my research on Biblical Hebrew and Koine Greek – the *y*-axis indicates exact statistical values, ranging from 0% to 100% through a gradual continuum of intermediate but always precise numbers. In the present study for reasons exposed in section 1.3.3, this precision was simplified to four rounded values: prototypical, semi-prototypical, non-prototypical and void. As the values of the *y*-axis are highly rounded, they are imprecise. For instance, the measure ‘non-prototypical’ can include cases of extreme rareness and absolute non-saliency of a sense (cf. the domains of a non-perfective past of the NAATA form) as well as instances of a mere non-commonness (cf. the domain of ongoingness of the KA gram). A comparable lack of precision corresponds to the value labelled as semi-prototypical, which includes all possible intermediate states between non-prototypicality and prototypicality. This imprecision of the values, with which the arguments of the *x*-axis are correlated, renders the entire shape of the waves greatly approximated. Moreover, the four values are not only imprecise but also non-numerical *sensu stricto* – they are, in a way, narrative and, thus, their position on the *y*-axis is, to a degree, metaphorical. In addition, the very procedure of relating an argument of the *x*-axis with one of the four values of the *y*-axis (V, NP, SP and P) is approximate and not entirely objective – at least not objective to the extent that a statistically based technique is. To be exact, the summation of the three features that underlie the *y*-axis (realistic frequency in the corpus, my experience from Basse, and syntactic, pragmatic or lexical constraints), which are all qualitatively distinct from each other (one of them being relatively subjective), into a single value is clearly non-arithmetical. In fact, it is partially intuitive and, thus, arbitrary.

As explained in the Introduction, the selection of only four degrees of prototypicality essentially stems from the lesser degree of objectivity, non-numerical nature of the *y*-axis and its non-arithmetical calculation. But it is because of using such broad categories of the *y*-axis

that the shapes of the waves can be viewed as realistic and robustly accurate. In other words, the imprecision of the values enables me to preserve the robust accuracy of the model – albeit imprecise in detail, the representation is accurate as far as macro-features are concerned. In this manner, one of the two main imitations of the study paradoxically renders the model much more effective and realistic than if a greater granularity of the values of the y-axis was chosen.

Nevertheless, it is evident that a precise analysis in terms of frequency – the most tangible indicator of, at least, the wave's internal prototypicality – will render the waves designed in this study more accurate, more objective and, thus, more realistic. For this, more coherent corpora are needed, which, in turn, necessarily requires more field work in Basse. However, it is important to note that if the behaviours of the waves were plotted statistically, they would most likely be consistent with the shapes developed in this dissertation. As explained above, the waves designed here and the waves based on precise statistical data will differ in detail. However, their robust features – especially, the contours of their topologies and their peaks (either monotonous or non-uniformly spread) should remain identical. As a matter of fact, in a pilot study – albeit dedicated to the issue of semantic maps in general and not to Basse Mandinka specifically – I offered a precise statistical analysis of the semantic potentials of the TA/YE<sub>1</sub>, NAATA and RIO grams based on a non-extensive but consistent corpus. The waves of these grams were, thus, plotted given the objective input data. Once located on the stream, the relations between the three waves – and hence their robust features – were roughly analogical to those discovered in the present dissertation (cf. Andrason forthcoming (d)). This validates the findings of this dissertation despite the above-mentioned imprecision and lesser degree of arithmetical foundation.

Furthermore, a detailed statistical study will have another effect on the model. In the waves presented here, the values are, in a way absolute, i.e. irrespective of the status of the other senses of the gram. This means that, for instance, all the senses of a gram can be prototypical on a wave and, thus, lifted to the highest degree. Compare, for example, the TA form on the anterior path that exhibits the wave with its peak of prototypicality lifted equally throughout the four stages of the cline (resultative proper, perfect, perfective past and non-perfective past) and, most importantly, to the highest position. In the statistical analysis, such a situation is impossible, as the values are relative – each value strictly depends on its share in the total 100%. As a result, if the four senses located on the anterior path are equally prototypical (i.e. each one of them being prototypical in the way as approached in this study), in a statistically driven model, they will only ascend to 25% each. Fortunately, this will render the interaction of the waves on the stream more easily recoverable. In this statistically based approximation, it is clear that the waves of the NAATA and RIO grams surpass the wave of the TA form at the stages of a resultative proper, perfect and perfective, because the latter, at those stages, ascends only to 25% and not to the maximal degree as in the model formulated in this dissertation. Once more, although the details of the wave will change, the topology of the cline and its relation to other clines of the stream will remain analogical.

The statistically plotted maps will also enable us to precisely relate the internal wave's prototypicality to speakers' perception of the gram (recoverability of a sense by the speakers or first-come-to-mind meaning) and show that the latter is directly related to the

product prototypicalities of the grams, i.e. to the prototypicalities derived from the internal statistics and the position of the wave on the stream. This relation has been suggested in the above-mentioned pilot research on waves where the constructions from Greek, Hebrew and Mandinka that inhibit the anterior stream were analysed statistically (Andrason forthcoming (d)).

The lack of precise statistical data extracted from coherent corpora additionally implies that I was unable to plot specific waves for different types of texts (narrative, discourse, embedded narrative, embedded discourse, etc.) and for different genres (stories, poetry, religious texts, etc.). As demonstrated in several studies, the shapes of maps, waves and streams can be dissimilar in various types of texts and genres, because of the distinct speed of the grammaticalisation process and, thus, the properties of a gram exhibited in such different textual and stylistic milieus (Andrason & Locatell forthcoming). A study where different corpora would be analysed separately will determine how waves of the same gram relate to one another in distinct types of texts, additionally enhancing the model and its precision.

The other limitation of the model formulated in this dissertation corresponds to the module- and/or system-level representations which were extremely coarse-grained. Grams were represented as linear or even monolithic objects, i.e. points (cf. Figure 7.19 and 7.20) despite the fact (of which I am fully aware and which I explicitly mentioned on various occasions) that they are multi-branched networks. An alternative representation developed in the Appendix tended to incorporate both systemic and stream (wave) perspective. However, for the sake of simplicity, the multi-branched maps of grams were again simplified to linear clines. A better macroscopic model which could preserve this complexity in a less reductionist way would therefore be more advantageous. This especially holds true for the ocean which should be portrayed as a fluctuated surface of multiple streams along which grams-networks (and not simplified clines or points) propagate. Likewise, the exact position of the streams in the ocean bed should be less arbitrary, but rather as objective, rational and empirically driven as possible. In addition, by acknowledging the gradualness of meaning extensions and blurry modifications linking one domain with another, a more fuzzified (and inversely less discrete and crisp) model should be proposed. This representation should not only acknowledge the fuzziness in principle, but also fully incorporate it into a higher-level representation. Of course, this requires an improvement of the model itself.

Two further problems are related to typological and diachronic limitations. On the one hand, certain grammaticalisation paths – especially their fine-grained representations and precise stage-to-stage orders – may still be regarded as relatively hypothetical. Only by analysing a more extensive sample of languages, can such clines be rendered more accurate. On the other hand, more diachronic and comparative evidence from Manding and Mande should be used in order to corroborate mappings developed in this dissertation and select those that are the most plausible. This is especially relevant for grams that might have followed more than one evolutionary scenario (e.g. the SI form) and grams whose diachrony is still debatable (e.g. the YE<sub>1</sub> and TA forms). These two problems clearly hinge on the advances of grammaticalisation theory in the realm of verbal semantics and on the progress of Manding and Mande comparative linguistics.

Lastly, the present study exclusively dealt with affirmative grams, excluding their negative counterparts. It is evident that in order to deliver a holistic picture of the Basse Mandinka verbal system, a detailed analysis of negative formations composed of negative predicative markers is necessary.

To conclude, most of the shortcomings specified above stem from the novelty of the framework, the limited data of Basse Mandinka language itself, and the scope of analysis adopted in this study. Therefore, this study only constitutes the first step – a foundation – for upcoming research on Mandinka (Basse Mandinka and Gambian Mandinka) which I would like to carry out in the future. I am convinced that these future investigations will render the model more precise and stronger, both empirically and theoretically.

However, one should not view the upgrading of the present model of waves, streams and ocean as *the* ultimate objective of my future activities. The dynamic representation of verbal semantics in terms of many-body model offered here is only one of many possible ways to treat the TTAM systems in a non-structuralist, non-modernistic and over-rational manner. There is no doubt that other means of modelling will emerge, increasingly more realistic and more complex. I am convinced that by constantly testing new representations and rejecting a dogmatic defence of a model formulated in one's study, we will gradually learn to view and treat language as it is and not as we want it to be. Therefore, rather than formulating a model which I would like to stand for decades, I engage in the construction of models. If in the future there would be a new theory that would enable me to increase the complexity and accuracy of this model, and still preserve its manageability, I would be the first one to embrace that framework. I am not a defender of any models that I have developed – I would rather be the models' destroyer. By refuting what I previously believed to be true, I am an eternal traveller through the reality of models. A boat that breaks the waves across the ocean. By visiting various such realities, I head towards the only one that is worth the journey – *the reality of reality*. Alas, I perfectly know I will never get there.

*J'ai vu des archipels sidéraux ! et des îles  
Dont les cieux délirants sont ouverts au vogueur :  
- Est-ce en ces nuits sans fond que tu dors et t'exiles,  
Million d'oiseaux d'or, ô future Vigueur ? -*

*Mais, vrai, j'ai trop pleuré ! Les Aubes sont navrantes.  
Toute lune est atroce et tout soleil amer :  
L'âcre amour m'a gonflé de torpeurs enivrantes.  
Ô que ma quille éclate ! Ô que j'aïlle à la mer !*

*Si je désire une eau d'Europe, c'est la flache  
Noire et froide où vers le crépuscule embaumé  
Un enfant accroupi plein de tristesses, lâche  
Un bateau frêle comme un papillon de mai.*

*Je ne puis plus, baigné de vos langueurs, ô lames,  
Enlever leur sillage aux porteurs de cotons,  
Ni traverser l'orgueil des drapeaux et des flammes,  
Ni nager sous les yeux horribles des pontons.*

Arthur Rimbaud "*Le Bateau Ivre*"



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INITIAL CONDITIONS

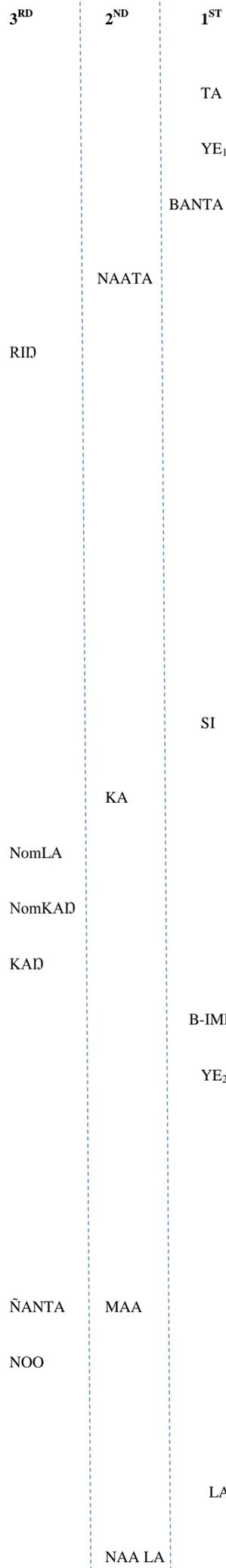
PATHS

ATTRACTORS

SHORES

STREAMS

WHIRLPOOLS



ANTERIOR

EVIDENTIAL

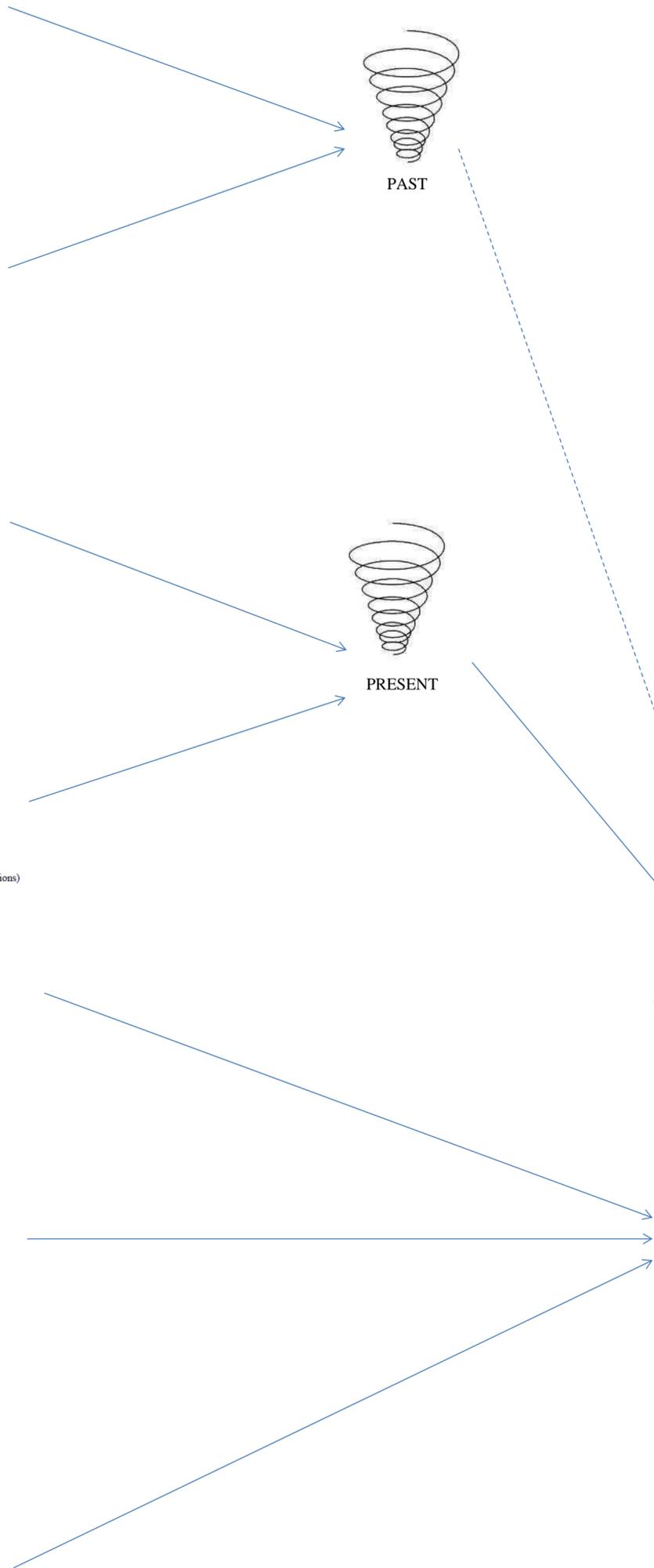
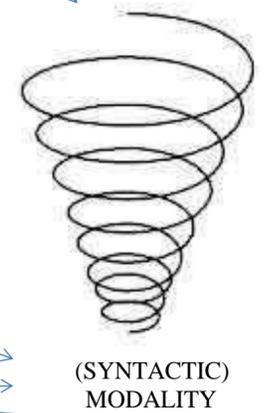
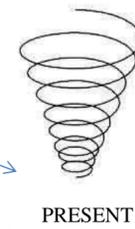
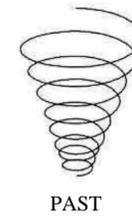
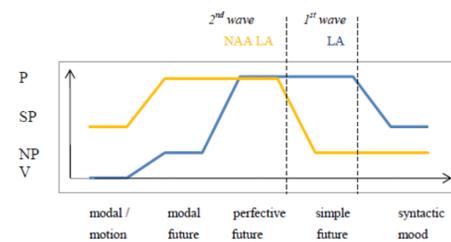
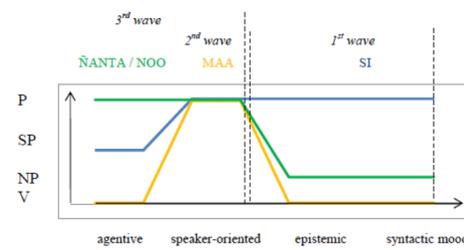
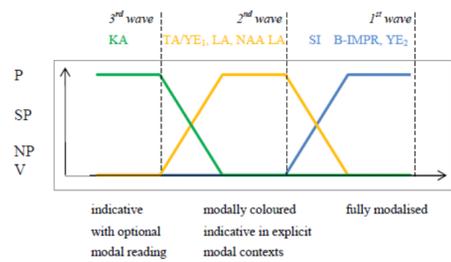
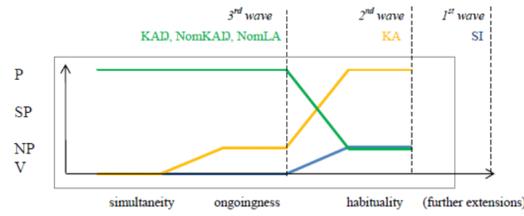
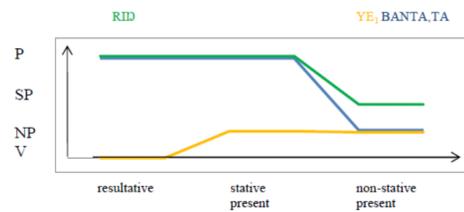
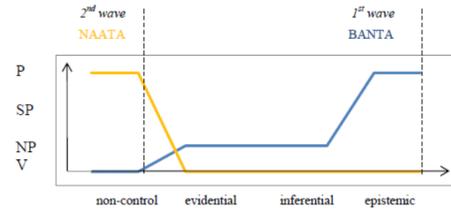
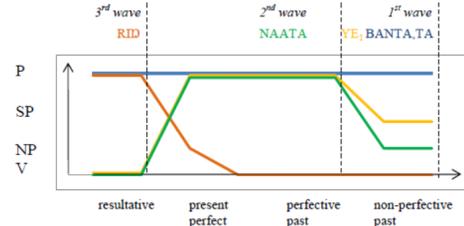
SIMULTANEOUS

IMPERFECTIVE

MODAL CONTAMINATION

MODAL

FUTURE



APPENDIX

DYNAMIC MAP OF THE BASSE MANDINKA VERBAL OCEAN