LEXICAL SEMANTICS AND DEVERBAL NOMINALISATIONS IN SESOTHO

by

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DECLARATION

I, the undersigned, hereby declare that the work contained in this dissertation is my own original work and that I have not previously in its entirety or in part submitted it at any university for a degree.

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ABSTRACT

In this dissertation, the semantic and syntactic properties of deverbatives are analyzed in the context of Generative Lexicon theory, which is a model of lexical semantics.

The aim of the analysis relates to the existence of the relationship between nominals derived directly from an event description and their inheritance of the properties of that event. The deverbal nouns in Sesotho are analyzed semantically within specific parameters taking into account the deverbal noun as a whole. This is done by viewing how word meaning interact with a set of generative mechanisms to account for the creative use of language. These mechanisms involve the levels of representations (i.e. argument, event and qualia structures) which provides information about the number and type of arguments; the event type of a lexical item and how these events are tied together within different relations.

There are correlations between lexically encoded base forms and morphological derived forms. These correlations provide a need for a representational structure to distinguish between stage-level and individual-level nominals. Focusing on the role of events in the semantics of nouns, it is shown that stage-level and individual-level nouns differ in the type and the quantification of their defining event. This led to the adoption of the view that that nominals in general should be named after the events they each fulfil.

OPSOMMING

In hierdie proefskrif word die semantiese en sintaktiese eienskappe van deverbatiewe in Sesotho ontleed binne die raamwerk van Generatiewe Leksikonteorie, ‘n model van leksikale semantiek.

Die doel van die analise hou verband met die verhouding tussen nominale direk afgelei vanaf ‘n gebeurtenis (‘event’) beskrywing en die oorerwing van die eienskappe van daardie gebeurtenis (‘event’). Die Sesotho deverbatiewe word semanties ontleed binne spesifieke parameters met inagneming van die semantiese eienskappe van die deverbatief as geheel. Dit word gedoen deur ‘n ondersoek te doen na hoe woordbetekenis in interaksie is met ‘n stel generatiewe meganismes om ‘n verklaring te bied vir die kreatiewe gebruik van taal. Hierdie meganismes betrek die vlakke van representasie (nl. argumentstruktuur, gebeurtenis (‘event’) struktuur en qualia-struktuur) wat inligting voorsien omtrent die getal en tipes argumente (dit is, uitdrukkings wat tematiese rolle het), die gebeurtenis (‘event’) tipe van ‘n leksikale item, en hoe hierdie gebeurtenisse (‘events’) saamhang binne verskillende verbande.

Daar is korrelasies tussen leksikaal ge-enkodeerde basisvorme en morfologies-afgeleide vorms. Hierdie ko-relasies bied ‘n behoefte vir ‘n verteenwoordigende struktuur om te onderskei tussen fase-vlak (‘stage-level’) en individuele-vlak nominale. Daar word aangetoon, met fokus op die gebeurtenisse (‘events’) in die semantiek van naamwoorde, dat fase-vlak en individuele-vlak verskil in die tipe en die kwantifisering van hulle definieerbare gebeurtenis. Dit lei tot die aanvaarding van die siening dat nominale in die algemeen benoem moet word na die gebeurtenisse waaraan elk voldoen.

DEDICATION

To the memory of my mother.

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CHAPTER 1: INTRODUCTION

1.1 RATIONALE OF STUDY

The theoretical component in this study is aimed at extending some of the ideas and mechanisms developed in the Generative Lexicon theory (Pustejovsky 1996). This will be done by investigating a specific set of data: deverbatives in Sesotho, i.e. nouns which are derived from verbs. This issue is largely unexplored within a theoretical framework in the African languages although descriptive grammars regularly include reference to and limited examples of verbal nouns (Guma 1971).

A further reason for the proposed research is the lack of studies on semantics in the African languages and Sesotho in particular. The major emphasis in Sesotho linguistics has been on morphology and the semantics of morphemes (see Du Plessis (1997) for overview of this issue).

A further part of the rationale for the proposed study is that the semantic analysis of lexical items is a prerequisite for applied linguistic research such as lexicology and lexicography. This study will thus be of value to researchers in the field of lexicology. Informed lexicographic practice crucially relies on a sound knowledge of lexical semantics and the associated morphosyntax of lexical items.

Current approaches to morphology play a prominent role in research on the semantic interpretation of deverbal nouns. Deverbal nouns in Sesotho are morphologically derived by affixation, e.g. a prefix [mo-] and a suffix [-i]: [mo- [rek[i]] (buyer) from the verb [-rek-] (buy). The [-i] morpheme appears with underlying verbal forms which have an external argument in their argument structure representation. In the same way, the morpheme [-o] in a deverbal noun such as [thek-o] (purchase) from the same verb [-rek-] (buy) needs an underlying verbal form with an internal argument in their argument structure (Di Sciullo and Williams (1987), Rappaport and Levin (1992)). This morphological generalisation does not account for the semantic similarities of nominals such as [mo-[utsw[i]] (stealer) and [le-[shodu]] (thief), i.e. the semantic similarity is between the deverbal derived noun **moutswi** and the non-derived noun **leshodu**.

Furthermore, this generalisation does not fully explain the semantic difference between the same noun interpreted as an event or the manner in which the event is being performed e.g. [mo-[bin[-o]] (singing, or, way / style of singing, from the verb [-bin-] (sing). The morphemes [-i] and [-o] which respectively control the external and internal argument of an underlying verb, may appear in class 9 deverbal nouns where both of them control the internal argument but with a semantic difference: [peleh-i] (confinement) and [peleh-o] (birth) from the verb [-beleh-] (give birth).

One of the problems with the above account which is based on argument generalisation is that a generalisation reflecting the specific concern of characterising the interface between morphology and syntax is taken to be the unique hypothesis for explaining semantic interpretation. This problem is responsible that productive processes such as nominalisations with [-i] or [-o] are associated with largely unpredictable semantic interpretations. These issues have an important bearing for lexical choice. For example, if **setitimi** (runner) is an individual who generally runs, **mosibolli** (discoverer) is not an individual who generally discovers but one who has discovered something. Thus, relying exclusively on morphological clues to determine the interpretation of a deverbal noun obscures the problem rather than clarifying it. The claim is that if the event of running plays a role in the interpretation of **setitimi**, then also the event of discovering should play a role in the interpretation of **mosibolli.** These two events are of different types. The related nominals should then also be interpreted differently.

The syntactic generalisation also appears to be inadequate. A large number of verbal forms do not have an associated deverbal noun e.g. **babasela** (itch), **ngena** (gallop), **opa** (be sore). Secondly, some verbal forms allow a large number of derivations while other allow only one or two derivations e.g. from the verb **nona** (be fat/ rich): **mononi** (fat/rich person), **senoni** (very fat/rich person), **bononi** (fatness/riches), but from the verb **bohla** (belch) only **pohlo** (belching). The solution to these issues assumes a notion of blocking or suppletion which rules out the deviant derivation (Aronoff 1981). This solution ignores potential generalisations: it provides no method for enumerating all the predicates that lack an associated derivation. It should be necessary to exploit known grammatical and semantic properties that appear to be responsible for certain linguistic

phenomena e.g. the event-based information that is associated with the verbal stem at least partially determines the availability of a derived noun.

1.2 PROBLEM STATEMENT AND FOCUS

The central problem to be investigated in this study relates to an account for the semantic similarities of the deverbal noun such as **moutswi** (stealer) and the non-derived noun such as **leshodu** (thief). Previous studies focused on only specific features of deverbal nouns. These descriptive semantic studies failed to account for important questions as regard the morphological and semantic properties of deverbal nominals. The framework of Generative Lexicon Theory (GLT) that will be employed for my research on Sesotho deverbal nouns contains in its architecture the appropriate theoretical devices and principles to account for the intriguing questions posed by the morphosyntactic kind of semantic properties of Sesotho deverbal nouns.

GLT as postulated by Pustejovsky (1996) has been refined and modified since then in various studies. At present GLT has emerged as an influential theory on lexical semantics. The deverbal nouns in Sesotho will be analysed semantically within specific parameters but examining the deverbal noun as a whole. The study will be undertaken within the assumptions of Generative Lexicon theory which is a theory within the field of lexical semantics. The semantic interpretation of deverbal nouns in Sesotho will be addressed within these assumptions. The kind of analysis within the GLT framework will solve the above-mentioned problem within purely descriptive accounts of deverbal nouns i.e. the emphasis on morphology with the semantic analysis of morphemes.

These productive or creative processes should be characterised from the point of view of lexical semantics. It requires a model that accounts for similarities of underlying semantic types and provides a rich vocabulary for describing the generative mechanisms that take advantage of semantic knowledge in the lexicon. The Generative Lexicon theory provides this model and thus the foundation for the analysis of derived nominals.

The basic assumption within Generative Lexicon theory is that the lexicon is an essential and coherent component of linguistic knowledge through which it is possible to study how word meaning interacts with a set of generative mechanisms to account for the creative use of language. Lexical items have an internal structure which involves more than one level of representation namely argument structure, event structure and qualia structure.

Argument structure provides information about the number and type of arguments and how they are realized syntactically. The argument types are distinguished according to the role that they play in the representation of a lexical item e.g. the noun **lemati** (door) may have two arguments: a physical object and an aperture. A verb such as **aha** (build) may also have two arguments, i.e. an animate individual who builds and an artefact as a house which has been built.

Event structure defines the event type of a lexical item and a phrase. The following aspectual types are recognized: activities or processes, states and transitions. Events themselves are complex semantic objects and they are composed of sub-events such as temporally ordered sub-events, e.g. with the verb **aha** (build): there are two events i.e. a process and state which have a restriction with regard to sub-events: the two events are temporally ordered. The process of building is the first event and the transition to a state is the second event.

In terms of the qualia structure the arguments and events are tied together within different relations which explain the meaning of a lexical item. Such relations are expressed within four qualia roles: formal roles distinguish the object within a larger domain, constitutive roles express the relation between the object and its constitutive parts, telic roles express the purpose of the object and agentive roles express the factor that brought the object into existence.

The lexical structure of a verb or a noun will thus refer to these three levels of representation. A comparison is given below of the difference in the lexical structure of a verb and a derived noun from that verb:

Verb

Tsuba (smoke)

ARGSTR = [ARG1 = x : human
ARG2 = y : substance]

EVSTR = [E1 = e_1 : process]

QUALIA : [Formal = x
AGENTIVE =
smoke-act (e_1,x,)]

Noun

Motsubi (smoker)

ARGSTR = [ARG1 = x : human
D-ARG1 = y : substance]

EVSTR = [D-E1 = e_1 : process
D-E2 =e_2 : state
Restr = Temporally
Ordered(e_2,e_1)]

QUALIA= [FORMAL = x
TELIC= [1] =smoke(e_1,x,y)
AGENTIVE = habit(e_2,x,[1])]

The verb **tsuba** has two arguments referring to a person and a substance which is smoked. The noun **motsubi** has the same human argument but the second argument of substance is now a default argument of the noun.

The verb tsuba has one event i.e. a process, while the noun has two default events: process and state. There is a restriction on these events: they are temporally ordered (e_2,e_1).

The formal qualia role is the same in the verb and the noun, i.e. the argument human. The telic role refers to the function of the smoker i.e. she (=x) smokes (=e_1: process) a substance (=y). This telic role is referred to as [1].

1.3 GOALS

The study will be concerned with nominalisation in Sesotho i.e. a process whereby nouns are formed from some other word class, in this instance specifically verbs. The aim will be to explore a semantic analysis of such deverbal nouns in Sesotho within the assumptions of lexical semantics with a focus on Generative lexicon theory.

The goals are to prove that:

- Nominals such as **motsubi** above are directly derived from an event description. Such nominals inherit the properties of that event. In the case of a process (smoking) there is a habitual reading in the nominal and a specific reading of the activity. In a comparison between the derived noun and verb, one finds an exchange between the agentive role in the verb and the telic role in the derived noun. The agentive role **smoke** in the verb becomes the function of the derived noun **smoker** in its role.

- Following from this theory, a second assumption is necessary, namely one which requires that we find correlations between lexically encoded base forms and morphological derived nominals reflect a more general behaviour of nouns which also denote an individual involved in an event but which are encoded in the lexicon as base forms. Thus, there are correlations between words that are not derived (**ngaka** (doctor), **kgosi** (chief) and morphological derived forms (**setitimi** (runner), **sesesi** (swimmer)).

- A third assumption is based on the argument that deverbal nominals are characterised in terms of events, irrespective of whether or not the event is presupposed. The differences in interpretation are the result of the event type: the non-derived noun **ngaka** (doctor) refers to an individual who is trained to fulfill the event of doctoring while the derived noun **sesesi** (swimmer) tells us that the individual in question is engaged in the event of swimming. The derived noun **mohlodi** (winner) signifies an individual who has successfully completed a given event. (Nominals in general should then be named after the events they each fulfill.)

- A further assumption of the research is concerned with the necessity of a representational structure to distinguish between stage-level and individual-level nominals. Individual-level properties refers to properties which an individual retains more or less throughout its lifetime e.g. **ngaka** (doctor), **lehlanya** (mad person). Stage-level properties are usually identified with non-permanent states of individuals e.g. **mmadi** (reader), **moreki** (buyer).

1.4 METHOD

The research method which will be employed to solve the problems with regard to deverbal nouns mentioned above, will follow the theoretical model of the Generative Lexicon theory. Firstly an extensive study of a wide range of recent literature on lexical semantics with framework of Generative Lexicon Theory will be undertaken. Secondly, a variety of verbs will be identified. These verbs will be selected on syntactic as well as semantic grounds. In particular, the verb selection for investigation of the lexical semantic properties of the corresponding derived nominals within the GLT framework will be based on a wide range of semantic verb classes on the one hand, and the range of thematic roles that may be realised in the verb constellation (i.e. subject and complement categories of the verb). Syntactically, the focus will be on transitivity. Semantically, the three levels of representation within the Generative Lexicon theory will be employed to select a variety of verbs i.e. argument structure, event structure and qualia structure. The emphasis on this selection is on verbs which result in productive processes of derivation.

These verbs will form the basis for nouns with the nominal suffixes [-i,-o] and the verbal suffix [-a], as well as the various noun class prefixes which may possibly appear with such nouns.

A comparative analysis of the lexical structure of the verb and the derived noun from that verb will then be done to arrive at the lexical semantics of derived nominals.

In the derivation of nouns from verbs attention will only focus on productive or creative processes of derivation. Idiosyncratic derivations and non-productive derivations will not be taken into account.

1.5 ORGANISATION OF THE STUDY

Chapter one presents the aim of the study and outlines the theoretical framework, method and organisation of the content of the study.

Chapter two focus on a literature review of recent research within GLT.

Chapter three will give an overview on morphology with focus on derivation.

Chapter four will present the nominal derivations in Sesotho.

Chapter five will give the conclusions of the study.

CHAPTER 2: LEXICAL SEMANTICS

2.1 AIM

An overview will firstly be given of developments within the Generative Lexicon theory of Pustejovsky (1996). Secondly, attention will then focus on a more detailed summary of aspectual verb classes. These verb classes form an extension of the event structure in Pustejovsky (1996). An application of the major findings on aspectual verb classes will then be attempted in Sesotho.

The focus in this chapter will be on those issues which are of concern in the eventual analysis of the nominal derivations in Sesotho i.e. the argument structure, event structure and qualia structure including later developments with regard to these levels of representation.

2.2 THE GENERATIVE LEXICON (GL)

2.2.1 Pustejovsky (1996)

In the sections below, an overview will be given of the Generative Lexicon from the work of **Pustejovsky** (1995). The references will be from the second edition (1996). References will also be made to Busa (1996) because she attempted an overview of the Generative Lexicon for her doctoral degree.

Lexical Semantics is the study of the meaning of the various lexical categories of a language. These lexical categories are present in a lexicon of the language where they appear as lexical items with various category labels such as noun (N), verb (V) and adjective (A). Lexical Semantics is then the study of lexical items to ascertain how and what the lexical items of a language denote, i.e. what is their meaning, what do they refer to in the real word? Such lexical items nowadays also supply much of the structural information of a sentence e.g. its syntactic category as noun or verb etc

In the study of the meaning of lexical items , two issues have received considerable attention:

a The creative use of words in novel contexts, e.g. the word '**Newspaper'** may refer to a **product**, i.e. the actual paper that one can read, or the **producer** of the paper who may hire or fire journalists. The actual meaning of the word will then depend on the specific **context** in which it appears.

b. The combination of the lexical items , i.e. the issue of compositionality. Central to this issue is the specification of the selection restrictions which are placed on the words which may combine with each other e.g. the lexical item **'drink'** may appear with a specific noun as its object i.e. **'liquid.'**

It is important to note that linguistic studies nowadays need computational complexity of large lexical databases. On the other hand, computational research need the grammatical and syntactic distinctions of lexical items: Natural language processing (NLP) systems must account for these differences in their lexicons and grammars. These two disciplines need to be married because it is very difficult to carry out serious computational research in linguistics and NLP without the help of electronic dictionaries and computational lexicographic resources. Right in the centre of this marriage is the study of word meaning, i.e. lexical semantics.

Two assumptions need to be taken into account in the study of lexical semantics (Pustejovsky 1996:5-6):

a. Lexical Semantics need syntactic structure. Meaning can never be completely divorced from the structure that carries it.

b. The meaning of words should reflect the deeper conceptual structures in the cognitive system, and the domain it operates in.

Older assumptions include the notion that words must somehow refer to some person, place or thing in the real world.

There are a further three principles which should guide the study of lexical semantics:

a. The notion of semantic well-formedness should be formulated to arrive at a theory of possible word meaning, i.e. other influences on the meaning of words should be avoided e.g. discourse and pragmatic factors.

b. Thematic roles (θ-roles) do not supply enough information for semantic decomposition. A principled method for lexical decomposition will include a recursive theory of semantic well-formedness and an appeal to several level of interpretation in the semantics (Pustejovsky 1996:6)

c. Lexical Semantics must study all the lexical categories which appear in i.a. syntactic structures in order to characterize the semantics of a language. Thus, such a semantic study should include the following lexical categories which have been recognized for the African languages: Noun (including locative noun), verb, adjective, quantifier, preposition, adverb, complementizer, conjunct and demonstrative.

It should be noted that there are many separate semantic levels which are necessary for the representation of the context of an utterance. The semantic level on which we are concentrating here is **Lexical Semantics.** Other levels include pragmatics and discourse structure as well as temporal structure (i.e. the interpretation of the functional category of inflection).

In the study of meaning, the aim is to provide an adequate description of how our language expressions have content, and how this content appears to undergo continuous modification in new contexts. In fact, what makes language so uniquely expressive is the way it seems to embrace meaning shifts such as polysemy. Polysemy is central to language and the first step in examining the meaning of a word is to see the range of polysemics it exhibits. One must account for the expressive and creative power of word sense. The second interesting step is then to establish the relationship between the senses.

The Generative Lexicon is a computational system involving four levels of representation (Pustejovsky 1996: 61):

ARGUMENT STRUCTURE : Which specify the number and type of logical arguments, and how they are realized syntactically.

EVENT STRUCTURE : Which define the event type of a lexical item and a phrase. They include state, process and transition , and events may have sub-eventual structure.

QUALIA STRUCTURE : This is the mode of explanation, composed of formal, constitutive, telic and agentive roles.

LEXICAL INHERITANCE STRUCTURE : This identify how a lexical structure is related to other structures in the type lattice, and its contribution to the global organization of a lexicon.

The four levels of representation are connected by a set of generative devices. They are (Pustejovsky 1996:61):

i. **TYPE COERCION**: Where a lexical item or phrase is coerced to a semantic interpretation by a governing item in the phrase, without change of its syntactic type.

ii. **SELECTIVE BINDING**: Where a lexical item or phrase operates specifically on the substructure of a phrase, without changing the overall type in the composition.

iii. **CO-COMPOSITION**: Where multiple elements within a phrase behave as factors, generating new non-lexicalized senses for the words in composition. Cases of underspecified semantic forms are included such as Manner Co-composition, feature transcription and light verb specification.

These three semantics transformations are important in the discussion of how to capture the semantic relatedness between syntactically distinct expressions.

The ability of a lexical item to cluster multiple senses is referred to as a Lexical Conceptual Paradigm (ICP) (Pustejovsky 1996:62, 91-92). The intuition behind the notion of an ICP is that there is something inherent in the semantics of a noun so that it

is able to project separate senses of the noun in distinct syntactic and semantic environments.

The ICP provides a means of characterizing a lexical item as a meta-entry. This turn out to be useful for capturing the systematic ambiguities which are pervasive in language. Nouns such as '**Newspaper'** appear in many semantically distinct contexts, able to function sometimes as an organization, a physical object, or the information contained in the articles within the paper.

The notion of an ICP permits us to treat these nouns not as distinct senses, but as logical expressions of different aspects to the meta-entry for **'Newspaper'**. Among the alternations that can be analyzed in this way are those of Nominal alterations exhibiting logical polysemy such as these below:

- Count / mass alternations, lamb
- Container / containee alternations, bottle
- Figure / Ground reversal, door, window
- Product / Producer diathesis, Newspaper, Honda
- Plant / Food alternations, fig, apple
- Process /Result diathesis, examination, merger
- Place / People diathesis, City, New York.

Three levels of represntation will be summarised below with some detail, i.e. argument structure, event structure and qualia structure.

(1) Argument Structure (Busa 1996: 38-40)

Argument structure provides information about the number and the type of parameters of a predicate. Recent developments in the theory of argument structure have shown that in order to account for the constraints on how arguments are linked to syntactic positions a number of distinctions need to be drawn. Williams (1981) distinguishes

between external and internal argument, which correspond to the syntactic subject and the syntactic object respectively.

Grimshaw (1990) extends this view by arguing in favor of a hierarchically structured representation or argument structure on the basis of thematic roles of the different parameters. The view that emerges is that argument structure represents the minimal lexical semantic specification of a word.

Pustejovsky (1995) argues that a distinction based on the thematic roles alone is not sufficient to account for the constraints on expressibility of arguments. In particular, the distinction between arguments (obligatory parameters) and adjuncts (optional parameters) is too course-grained to explain the observation that certain arguments do not require obligatory realization, but they still appear to have an important status in the meaning of a lexical item. In GL, argument types are distinguished according to the role they play in the representation of a lexical item.

- True arguments

These arguments are obligatory realized syntactically as parameters of the lexical items e.g.

a. John devoured the **sandwich**
b. *John devoured
c. **Our** new neighbor came to visit.
d. ?? The new neighbor came to visit.

- **Default arguments**

These arguments are logically part of the expressions in the qualia, but do not need to be obligatorily realized syntactically e.g.

a. John built a house **out of wood**.
b. John built a house.

c. The author **of the book.**

d. The author.

- **Shadow arguments**

These arguments are semantically incorporated in the meaning of a lexical item and they can only be expressed by means of a subtype, otherwise the resulting expression is semantically odd, e.g.

a. John buttered the bread **with salty butter.**

b. ?? John buttered the bread with butter.

c. a **truck** driver.

d. ? a vehicle driver.

In a GL lexical entry, these argument types are directly encoded in the representation of argument structure, as illustrated below, where ARG is a true argument, D-ARG is a default argument, and SH-ARG is a shadow argument:

$$\begin{bmatrix} \alpha & \\ \text{ARGSTR} = & \begin{bmatrix} \text{ARG 1} = \ldots\ldots \\ \text{ARG 2} = \ldots\ldots \\ \text{D-ARG 1} = \ldots\ldots \\ \text{SH-ARG 1} = \ldots\ldots \end{bmatrix} \end{bmatrix}$$

(2) Event structure

Aspectual class (Pustejovsky 1996 : 12-16)

The essential idea behind the aspectual classification of verbs and verb phrases, is that they differ in the kinds of eventualities in the world they denote. It is normally assumed that there are at least three aspectual types: **state, activity,** and **events** where the last class is itself sometimes broken down into **accomplishment**, and **achievement** events. For example, the verb **'walk'** in sentence (1) denotes an activity of unspecified duration. That is , the sentence itself does not convey information regarding the temporal extent of the activity, although deictically it is an event in the past which did terminate.

(1) a. Mary **walked** yesterday.
b. Mary **walked** to her house yesterday.

Such a sentence as (1a) is said to denote an **activity**. Other examples of activity verbs are **sleep, run**, **work**, and **drink** . Sentence (1b) conveys the same information as (1a), with the additional constraint, however, that terminate her activity of walking to her house. Although not making explicit reference to the extemporal duration of the activity , (1b) does assert that the process has a logical culmination, whereby the activity is over when Mary is at home. This type of sentence is said to denote an **accomplishment** event.

Just as the verb **'walk'** seems to lexically default to any activity, there are verbs which seem to lexically denote accomplishments. For example, the verbs **'build'** and **'destroy'**, in their typical transitive use, denote accomplishment events because there is a logical culmination to the activity performed.

(2) a. Mary **built** a house.
b. Mary **destroyed** the table.

In (2a) the existence of the house is the culmination of Mary's act, while in (2b) the non-existence of something denotable as a table is the direct culmination or consequence of her act.

Creation-verbs are only the best example of accomplishments; **performance-verbs** such as **'play'** permit both activity usage (3a) and accomplishment usage (3b), depending on the complement structure.

(3) a. Mary **played** soccer (for many hours)
b. Mary **played** soccer in 10 minutes.

As illustrated in (3b) above, one classic diagnostic for testing whether a verb or verb phrase denotes an accomplishment is modification by temporal adverbials such as **'in an hour'**, the so called frame adverbials. In (4), both derived and lexical accomplishments license such modification, while activities (5) do not.

(4) a. Mary walked to the store in an hour.
b. Mary built a house in a year.

(5) a. *John **drank** in 20 minutes.
b. *Mary **worked** in an hour.

The frame adverbial seems to require that the verb or verb phrase make reference to an explicit change of state, a precondition missing in (5a) and (5b).

The last conventional aspectual classification is that of **achievement**. An achievement is an event that results in a change of state, just as an accomplishment does, but where the change is thought of as occurring instantaneously. For example, in sentence (6b) and (6c) the change is not a gradual one, but something that has a point-like quality to it. Hence, modification by point adverbials such as **'at 3pm'** is suggestive that a sentence denotes an achievement (cf Dowty,1979).

(6) a. John **died** at 3pm.
b. John **found** his wallet at 3pm.
c. Mary **arrived** at noon.

Point adverbial modification is not restricted to achievements, as the examples with accomplishment verbs below show:

(7) a. She **swam** the river at 10h00.
b. He **played** the piano at noon.
c. James **taught** his class at 2h30 pm.

Here the point-adverbial indicates the starting time of an event of some specific duration.

Derived activities and accomplishments.

What are apparently lexical properties of the verb can be affected by factors that could not possibly be lexical. For instance, consider the sentence in (8) where there is a shift in the meaning of **'eat'** from an activity as in (8a) to an accomplishment as in (8b).

Similarly, the lexically specified accomplishment verb build in (9) can appear with either a bare plural object or mass, thereby assuming an activity reading:

(8) a. Mary **ate** cookies. (activity)
b. Mary **ate** a cookie. (accomplishment)

(9) a. These people **built** a road in Cape Town.
b. These people **build** roads in Zimbabwe.

The presence of a bare plural object shifts the interpretation of a typically telic (or completive) event to an unbounded process.

Another indication of an aspectual shift resulting from pluralisation of the subject of achievement predicates comes from complementation patterns with the aspectual predicates such as **'begin'** and **finish'**. Normally achievements are not grammatical as complements of these verbs, as illustrated in (10, but the same predicates with the plural subjects suggest an aspectual distinction:

(10) a. *John began **finding** a flea on his dog.
b. *The guest began to **arrive.**

(11) a. John began **finding** fleas on his dog.
b. The guests began to **arrive**.

Finally, let us examine the behavior of states. Following Carlson (1977) and Kratzer (1989), we can distinguish two kinds of stative predicates: **individual-level** and **stage-level.**

Predicates such as **tall, intelligent**, and **overweight** might be thought of as properties that an individual retains, more or less, throughout its lifetime, and can be identified with the individual directly. These are **individual-level** predicates. Properties such as **hungry**, **sick**, and **clean** are usually identified with non-permanent states of individuals, and have been called **stage-level** predicates.

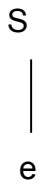
Individual-level predicates may appear in the present tense and may be verbal or adjectival predicates: **old**, short**, tall, white**, **black**, **mad**, **lazy**.

Extended event structure (Pustejovsky 1991, 1996)

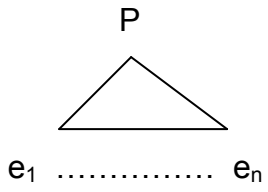
Event Types

One of the levels of representation in a generative lexicon is the Event structure which defines the event type of a lexical item and a phrase. It is assumed that the following categorization of aspectual type of verbs, verb phrases and sentences may be found: activities, accomplishments, achievements and states. Within the Event structure of the generative lexicon, events are assumed to be primitive entities which fall into three broad classes (**activities or processes**, **states** and **transitions**). Transitions are further distinguished into accomplishments and achievements.

States (s): (a single event which is evaluated relative to no other event).
Example: be sick, love, know.
Structural representation:



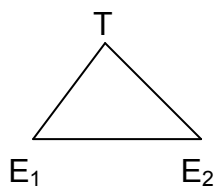
Process (P): a sequence of events identifying the same semantic expressions.
Example: run, push, drag.
Structural representation:



Following Dowty (1979) and others, we will assume that when **P** is a process verb, then if the semantic expression $\mathbf{P^1}$ identified with **P** is true at an interval **I**, then $\mathbf{P^1}$ is true for all subintervals of **I** larger than a moment.

Transition (T): an event identifying a semantic expression which is evaluated relative to its opposition (Jackendoff, 1972, Lakoff, 1970,Wright, 1963).

Examples: give, open, build, destroy.
Structural representation (where E is a variable for event type).



As in the case of argument structure, it is now also possible to give a listing of an event structure represented as a listing of event variables:

[ARGSTR =ARG1 , ARG2…..ARGn]
[EVENTSTR = EVENT1 , EVENT2 …,EVENTn]

For example, the verb **'build'** is typically analyzed as involving a development process and a resulting state (cf Dowty, 1979, Moens and Steedman, 1988, Pustejovsky, 1991).

$$\begin{bmatrix} \text{Build} \\ \text{EVENTSTR} = \begin{bmatrix} \text{E1 = process} \\ \text{E2 = state} \end{bmatrix} \end{bmatrix}$$

Unlike **'build'** however, which constrains the types of its two sub events to Process and State, the verb **'accompany'** permits either telic events, **TRANSITION, or PROCESS:**

$$\begin{bmatrix} \text{Accompany} \\ \text{EVENTSTR} = \begin{bmatrix} \text{E1 =T1} \\ \text{E2 =T2} \end{bmatrix} \end{bmatrix}$$

Complex Semantic Objects

There are aspectual distinctions which need finer-grained descriptions of events i.e. it is clear that events are themselves complex semantic objects. A motivation may be given for events as complex objects because it explains in what way different temporal modifiers make reference to different components of the event structure e.g. the different interpretations with adverbs such as **'quickly'**:

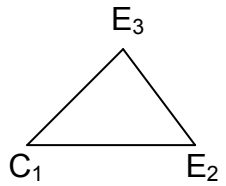
a. John ran **quickly.**
b. John died **quickly.**
c. John built his house **quickly.**
d. *John lived in Cape Town **quickly.**

- With (d) above: quickly may not appear with events denoting states.

- With (b) and (c) above: events denoted by '**die'** and '**build'** are transitional, i.e. the process which led to John's death or the house being built was quick. The scope of quickly requires a distinction between the internal composition of a transition from that of a process or state.

- With (a) above: the adverb quickly modifies the whole activity.

Events are thus composed of subevents and this issue leads to the defining of an extended event structure within the Generative Lexicon. This extended event structure can be represented with respect to the three different types of relations between an event and its subevents. The relation between an event as a complex object and its subevents may be shown by the following diagram:



[E_3] is the complex event with [e_1, e_2] as subevents. The three relations between these two subevents are the following:

Temporally Ordered Sub events

This restriction on the event structure may be indicated as follows: the event [e_3] is a complex event structure with two sub events [e_1, e_2] where [e_1] and [e_2] are temporally ordered such that the first event [e_1] precedes the second event [e_2] while each is a logical part of [e_3] and there is no other event that is part of [e_3]. Examples of temporally ordered subevents are to be found with verbs like **'break**, **'die'** and causatives: the process of breaking precedes the **state** of the broken object.

Simultaneous Subevents

The event [e_3] may be composed of two completely simultaneous subevents e.g. with the verbs **'accompany'**, **'marry'**.

Because it makes reference to an implicit event, it is aspectually underspecified and assumes both telic and atelic interpretations, depending on the context:

a. John will accompany Mary **to the store** (telic).
b. Mary accompanied me **while I was walking** (atelic)

Temporal Overlap

The event [e_3] contains two sub events [e_1, e_2] where [e_1] starts before [e_2], but there is a temporal overlapping relation between the subevents. Verbs such as **'walk'** and **'run'** are analyzed as involving this subeventual structure, where two motion process are structured in an overlapping relation, i.e. the efficient motion of the legs bringing about the final motion of the body.

Ordering Restrictions.

The specific events and their types need to be specified, as well as the ordering restrictions over these events.

$$\begin{bmatrix} \text{EVENTSTR} = & \text{E1} = \ldots\ldots \\ & \text{E2} = \ldots\ldots \\ & \text{Restriction} = \end{bmatrix}$$

The verb **'build'** includes two sub events: a developing process and a resulting state. The ordering restriction between these two sub events is one of temporally ordered sub events:

$$\begin{bmatrix} \text{build} \\ \text{EVENTSTR} = \begin{bmatrix} \text{E1 = process} \\ \text{E2 = state} \\ \text{Restriction : Temporally ordered} \end{bmatrix} \end{bmatrix}$$

The verb **'accompany'** permits either telic events (transitions) or atelic events (processes). These subevents appear in a coordinate structure because they must be of like type:

$$\begin{bmatrix} \text{Accompany} \\ \text{EVENTSTR} = \begin{bmatrix} \text{E1} = T_i \\ \text{E2} = T_i \\ \text{Restriction = simultaneous subevents} \end{bmatrix} \end{bmatrix}$$

The two sub events with verbs like 'run' or 'walk' may be represented as follows:

$$\begin{bmatrix} \text{Walk} \\ \text{EVENTSTR} = \begin{bmatrix} \text{E1} = e_1 \\ \text{E2} = e_2 \\ \text{Restriction : Temporal overlap} \end{bmatrix} \end{bmatrix}$$

Headedness

The above structural information for event structure needs a further distinction with respect to the relative prominence or importance of the subevents of a larger event i.e. event headedness. The head is defined as the most prominent subevent in the event structure of a predicate which contributes to the focus of the interpretation.

Assuming that events have at most a binary event structure, and that there are three temporal ordering relations realized in language, there are 6 possible head

configurations with 2 events given a single head, there are 12 possibilities if unheaded and double-headed constructions are included:

Temporally Ordered Sub events:

a. e_1 (head) e_2 : accomplishments : creation verbs e.g. **build**.

b. e_1e_2 (head) : achievements : change of state e.g. **arrive**, **die**.

c. (head) e_2 (head): transitions with three arguments: the events involve a relational predicate on each subevent: ditransitive verbs such as **give, take.**

d. e_1e_2 (no head) :Unheaded: polysemy: headless event structures admit of 2 possible interpretations: causative / anaccusative verbs such as **break / sink** : When head is e_1 = transitive, when head is e_2 = intransitive.

Simultaneous Sub events

a. e_1 (head) e_2 (one only is focused by the lexical item such as **buy**).

b. e_1e_2 (head) (one only is focused of the **2** sub events by the lexical item such as **sell**).

c. e_1 (head) e_2 (head): **marry**, **accompany**

d. e_1e_2: headless: argument inversion predicate such as **rent**.

Temporal Overlap

a. e_1 (head) e_2: Motion verbs :walk, run.

b. e_1e_2 (head): walk home.

c. e_1 (head) e_2 (head) (?)

d. e_1e_2 (headless): raising / control predicates such as begin / stop.

The head of the event structure may be indicated as follows:

$$\begin{bmatrix} \text{Build} \\ \text{EVENTSTR} = \begin{bmatrix} \text{E1 = process} \\ \text{E2 =state} \\ \text{Restriction = Temporally ordered} \\ \text{Head = } e_1 \end{bmatrix} \end{bmatrix}$$

(3) Qualia Structure (Busa 1996 : 45-55)

Qualia structure is the level of representation where arguments and events are tied together within different relations which explain or elucidate the meaning of a lexical item. Such relations are expressed within four **qualia roles,** which are based on the Aristotelian **modes of explanation** (or **generative factors**). These roles are summarized below:

1. **FORMAL ROLE** : distinguishes the object within a larger domain.

2. **CONSTITUTIVE ROLE** : expresses the relation between the objects and its constitutive parts.

3. **TELIC ROLE :** expresses the purpose of the object.

4. **AGENTIVE ROLE** : expresses the factor that brought the object into existence.

(3.1) The interpretation of the FORMAL ROLE

The formal quale provides the information that distinguishes an individual within a larger set, by making reference to the type of the individual which is specified in the argument structure.

Consider, for instance, the representation of the nominal **'knife'**, whose FORMAL ROLE expresses the typing restriction specified in the argument structure. This is illustrated below:

```
( Knife
  ARGSTR =      ( [ARG1 =x :artifact –tool]  )
  EVENTSTR =    ( [      ]                   )
  QUALIA        ( [FORMAL = x ]              )
```

Verbal forms have also a qualia-based representation. Consider, for instance, the verb **'sleep'**, which denotes a passive process.

```
( Sleep

  AGRSTR = [ARG 1 = x : animate-individual ]
  EVENTSTR = [E1    = e1 : process ]

  QUALIA = [FORMAL = Sleep-act (e1, x)]  )
```

The FORMAL ROLE expresses the information that **'sleep'** is a relation between an animate individual and an event, which is typed as a process. For verbal forms expressing causative semantics, the FORMAL ROLE encodes the resulting state. Finally the FORMAL quale plays an important role in denoting whether a given nominal has a relational status , given that in the case of nouns such as **'wife'** it expresses the relational content of the noun:

```
( Wife
  ARGSTR =      [ARG1 = x : human]
                [D-ARG1 = y : human]
  EVENTSTR  =   [     ]
  QUALIA =      [FORMAL = Wife_of ( x,y) ]  )
```

(3.2) The Interpretation of the Constitutive Role:

The CONSTITUTIVE role may express a variety of relations concerning the internal constitution of an individual (e.g. Material, weight, dimension, and so on). Furthermore, in addition to specifying the well known **part-of relation,** the CONSTITUTIVE quale may

contain other distinguishing features, as illustrated for the noun **'wife'**, where we need to make explicit the gender of the individual:

```
( Wife                                                  )
  ARGSTR =      [ARG1 = x: human]
                D-ARG1 = y: human]

  EVENTSTR =    [      ]

  QUALIA =      [FORMAL =Wife_of (x,y)]
                [CONSTITUTIVE = Female (x)]
```

The information encoded within the **CONSTITUTIVE** quale plays an important role in certain compositional operations, such as elucidating the implicit semantic relation between members of a certain class of noun-noun compounds, e.g. **'glass door'** (cf. Busa and Johnston, 1996). In addition, a number of compositional operations involving a head noun and a complement can be defined by establishing a membership relation based on the information provided in the **CONSTITUTIVE** role of one of the nouns. This is the case, for instance, of the expression **' violinist of the orchestra'**, where the compliment is not underlyingly expressed as an argument of the nominal **'violinist'**, but in composition it acquires argument status.

(3.3) The Interpretation of TELIC ROLE:

The TELIC role refers to the stereotypical function of the individual, and it can be defined for nominals as well as for verbs.

Pustejovsky (1995) distinguishes between two types of **TELIC: direct telic** and **indirect telic**. The distinction emerges as the result of the configurational properties of events and arguments.

DIRECT TELIC

```
α
ARGSTR =    [ARG1 =x: α]
            [D-ARG1 = y: ß]

QUALIA =    [FORMAL = x]
            [TELIC = R ( e,x,y)]
```

INDIRECT TELIC

```
α
ARGSTR =    [ARG1 =x: α
            [D-ARG1 y: ß]

QUALIA =    [FORMAL =x]
            [TELIC = R (e,y,x)]
```

The direct telic denotes "**instrumentality**" or **"agentivity**" in a broad sense, that is by viewing argument structure along the lines defined in Williams (1981), and Grimshaw (1990), the individual which is specified in the FORMAL role corresponds to the external argument in the relation in the TELIC, while in the **indirect telic** the individual corresponds to the **'internal argument'**. The **DIRECT TELIC** is involved in the representation of nominals like '**knife**', while the **INDIRECT TELIC** is part of the representation of 'beer' for instance:

```
knife

ARGSTR =        [ARG1 = x: artifact – tool]
                [D-ARG1 =y : phys-obj]

EVENTSTR =      [D-E1 = e1 : transition]

QUALIA =        [FORMAL =x]
                [TELIC =cut (e1 ,x ,y)
```

beer

ARGSTR = [ARG1 = x : beer]
[D-ARG1 = y : individual]

EVENTSTR = [D-E1 =e_1 :Process]

QUALIA = [FORMAL = x]
[TELIC = drink (e_1,y,x)]

The event expressed in the event structure representation has a default status, which means that it is quantified.

The TELIC role has a generic interpretation, in that it specifies what is, when properly used, the particular function(s) of the object being defined. In other words, the TELIC role imposes a particular interpretation to the relation that it encodes.

Within GL, the information contained in the TELIC role is taken to express analytic information about the function of the object. The information encoded in the TELIC refers to a persistent property of an individual, given that a **'knife'**, for instance, has the analytic property of cutting even though it is not being used in that capacity. Although when interpreting lexical items in context, we are faced with variable circumstances, our linguistic knowledge that **'knives'** are for cutting does not entail that every knife cuts or that a particular knife will be cutting in any given circumstance.

The interpretative constraints that emerge from knowing that a certain lexical property is persistent depend also on what property that is, and for which kind of individual that property is defined. For the general class of artifacts, the conditions under which the event in the TELIC role is likely to occur depends on some individual using that artifact in its analytical capacity. On the other hand, if the TELIC role is defined for an actual occurrences of **'milkman'**, then the conditions on actual occurrences of **'milk deliveries'** are going to be dependent on the individual being on the job.

Finally, while the preconditions are unavailable, namely the **'knife'** is used in its capacity, and the individual is employed, there might be many reasons for which the actual occurrences might be false. For instance the **'knife'** lost its blade, the individual had a car accident, and so on. Specifying the set of these circumstances is not the task of a theory of the lexicon.

The theory of lexical semantics indicates that the preconditions which determine the occurrences of the event encoded in the TELIC of '**knife**', are different from the conditions associated with the TELIC of '**milkman**'. Consider again the representation of the DIRECT TELIC, which is itself a complex structure that contains information relative to the conditions under which it encodes is likely to occur. The DIRECT TELIC of an artifact can thus be expressed as below:

DIRECT TELIC

```
( α                                                    )
  ARGSTR =      [ARG1 = x : α]
                [D-ARG1 = z : ß]

  QUALIA =      [FORMAL = …..]
                [TELIC =    [TELIC = R (e,x,y,stuff)]
                [AGENTIVE = C ( e,z,x)]
                [AGENTIVE = …..]                       )
```

The relation between the AGENTIVE and the TELIC in the complex structure can be expressed as a Conditional expression stating that if condition C holds, then R. For each lexical item the preconditions associated with C are going to be dependent on what R is. Thus, for the nominal **'knife'**, whose purpose is specified by the relation **'cut'**, the preconditions associated with these event are going to be minimally determined by some individual using the 'knife' in its TELIC capacity. This is shown below:

```
( Knife

  ARGSTR =        [ARG1 =x :artifact-fool]
                  [D-ARG1 = z : human]
  EVENTSTR =      [          ]

 QUALIA =         [FORMAL =x]
                  [TELIC = [TELIC = Cut (e,x,y : stuff)]
                  [AGENTIVE =Use (e,z,x)]                )
```

(3.4) The Interpretation of the AGENTIVE Role:

The AGENTIVE role denotes the event that brings an individual into being. Unlike the TELIC role which makes no assertion about actual occurrence, the event encoded in the AGENTIVE is a necessary condition for the existence of that individual. The interpretation of the AGENTIVE quale relative to the other qualia roles asserts that the coming into being of an object is a necessary condition for its existence. The conditions for the existence of a **'knife'** and hence of its purpose depend upon the object being manufactured. The explanation of what brings something about is not restricted to artifacts alone, but it is part of the representation of other nominal types, as well as verbs.

We have different modes of AGENTIVE. Artifacts are brought about by a creation event, whereas natural kinds are usually interpreted in a way that we can generally characterize as develop, to account for the coming into being of things like **'rocks'**:

CREATE AGENTIVE

```
( artifact

  ARGSTR =        [ARG1 =x : phys-object]
                  [D-ARG1 = y : individual]

 EVENTSTR =       [D-E1 =e1 : transition]
 QUALIA    =      [FORMAL = x]
                  [AGENTIVE = Make (e1,y,x)]              )
```

NATURAL KIND

Natural kind

ARGSTR = [ARG1 =x : phys – object]
EVENTSTR = [D- E1 =e_1 : transition]

QUALIA = [FORMAL =x]
[AGENTIVE = develop (e_1,x)]

2.2.2 Pustejovsky, Boguraev (1996)

Pustejovsky and Boguraev (1996) reported on different papers on Lexical Semantics that constitute a set of articles on the relationship between logical polysemy, sense extension and discourse structure.

There are three major subthemes running through the papers (Pustejovsky and Boguraev 1996 : 1) :

(i) the role of pragmatics and discourse structure in lexical disambiguation,

(ii) the analysis of logical polysemy as compositional process;

(iii) and the treatment of sense extension and referential transfer phenomena.

Semi-productive Polysemy and Sense Extension (p. 6-7)

There are two types of systematic polysemies for nominals, i.e. constructional polysemy (which appears in situations where there is really one lexical sense, and apparent ambiguities arise from a process of co-composition in the syntax) and sense extension that requires lexical rules for deriving new senses and it is only semi-productive and can be blocked or pre-empted by other lexical items or overriden.

Copestake and Briscoe (1996) analyze subselecting adjectives such as “fast” and “good” to examine how constructional polysemy is treated in their framework. In analysing sense extension, they pay attention to mechanisms of “grinding” and “animal

grinding" and they posit a general abstract lexical rule of grinding and allow for conventionalized subcases, licensed by pragmatic effects from the discourse.

Lexical Disambiguation in a Discourse Context (p. 8-9)

Asher and Lascarides (1996) examine the role that lexical semantics plays in discourse-level reasoning and the effects discourse coherence has on the lexical disambiguation process; i.e. how discourse structure can affect the selection of lexical senses.

They integrate three components to describe the mechanisms whereby lexical semantics affects and contributes to discourse interpretation :

i. A theory of discourse structure called SDRT, which represents discourse in terms of rhetorical relations that connect together the propositions introduced by the text segments;

ii. An accompanting theory of discourse attachment called DICE, which computes which rhetorical relations hold between the constituents, on the basis of the reader's backround information; and

iii. A formal language for specifying the lexical knowledge-both syntactic and semantic-called the LRL, Lexical Representation Language, which, among other things , incorporates certain Generative Lexicon Mechanisms into a typed feature structure logic.

They encode two heuristics for lexical disambiguation:

i. disambiguate words so that discourse incoherence is avoided, and

ii. disambiguate words so that rhetorical connections are reinforced.

Asher and Lascarides use the two heuristics to handle cases of lexical disambiguation outside the scope of theories of lexical processing. The following words "plant", "bar", and "dock" are used to show the knowledge resources encoded in a theory of discourse attachment.

Transfers of Meaning (p. 9-10)

Nunberg (1996) explores the concept of predicate transfer. He states that there are pragmatically licensed conditions which allow the predicate to extend its sense, where it is retyped to select for the subjects that are present in the syntax. According to Nunberg's formulation of the phenomena, predicate transfer is subject to two general conditions (Nunberg 1996:9):

i. the basic and derived property must stand in a functional correspondence to one another;

ii. the derived property should be a 'noteworthy' feature of its bearer.

He argues that reference to predicate transfer allows the maintanance of a strict definition of syntactic identity. All cases of sortal crossing are ruled out. Nunberg thought that the problem in current lexical treatments of systematic polysemy, is that they emphasize the lexical nature of the sense relations. Transfer is essentially a phrasal process and it cannot be charecterized as a purely lexical phenomenon without a loss of explanatory power.

Aspectual Coercion and logical Polysemy

Pustejovsky and Bouillon (1996:10) examine the behavior of aspectual predicates in French and English in order to explain the constraints on the operation of type coercion in complement position. Without a proper notion of constraints on generative mechanisms, there will be overgeneration of interpretations in the semantics. An idiosyncratic behavior of coercion with aspectual verbs is due to different types of event selection on the complement position. Complement coercion is possible with the subject control senses of the predicates. Their contribution provides an analysis of verbal polysemy which extends the generative treatment developed for nominals in the generative lexicon approach.

In their study, they discovered that verbs such as **"begin"** and "**finish**" are logically polysemous between their control and raising senses and that their underlying lexical representation for the verb is the same in each form.

A Typology and Discourse Semantics for motion verbs and spatial PPs in French

Asher and Sablayrolles (1996:11-12) use verbs of motion in an attempt to integrate lexical information into discourse contexts in order to determine the spatial and temporal structure of texts. In the examination of motion verbs, they provide a typology for semantic behavior for the different verb classes. Verbs of motion and their complexes cannot be lumped together into the same typology.

They define posture as a term to do largely with the manner of the individual situated in a position or location. Motion verbs are classified into four categories, i.e. change of location, change of position, inertial change of position, and change of posture. Lastly Asher and Sablayrolles apply their semantics to the problem of lexical disambiguation for prepositional phrases in context.

2.2.3 **Bouillon, Busa** (2001)

According to Bouillon and Busa (2001:149); the polymorphic behavior of the French verb "attendre"(wait) shows that its multiple senses can be derived co-compositionally from the semantics of the verb and its arguments.

It was observed that when the verb "attendre" subcategorizes for a clausal component, it means 'to wait for the state of affairs described by the complement to become true' (Bouillon and Busa,2001:150)

But when the complement of "attendre" is an NP, its semantics is less transparent. Bouillon and Busa (2001:150) noticed that 'where the object of the verb is an individual, the interpretation is different, in the sense that the individual is waiting for the object to exist'.

It was discovered that the verb "attendre" has two entries that is linked at the semantic level. According to Bouillon and Busa (2001:151) in both entries, the verb takes three

semantic arguments: the individual who is waiting (WAITOR), the event that the individual expects to take place (THE WAITED); and the event that will occur if the WAITED IS TRUE (RESULT).

According to Bouillon and Busa (2001:151), “when the complement is clausal,the semantics of the verb are obvious, but in the case of a nominal complement, the structure of the verb “attendre” has to contain information relative to the predicates that must be interpolated to interpret the different kinds of NPs”.

‘Attendre” in the Perspective of GL

According to Bouillon and Busa (2001:152), as compared to the monomorphic approach, the theory of Generic Lexicon adopts an agentive (or semi-polymorphic point of view). They mention the description involving three orthogonal levels of representation namely : (i) the argument structure (argstr); (ii) the event structure (eventstr); and (iii) qualia structure (qs). These three level are involved in the representation of all major categories (Nouns, Verbs, and Adjectives).

For verbs, the list of arguments distinguishes between obligatory arguments (ARG1), and default arguments (D-ARG1). The event structure describes the events (state, process, transition). Qualia structure links arguments and the events together and defines their role in the lexical semantic of the word.

According to Bouillon and Busa (2001:153), ‘the four qualia roles are interpreted features that provide the basic vocabulary for lexical description’. These are the FORMAL, the CONSTITUTIVE, the TELIC and the AGENTIVE. Bouillon and Busa (2001:154) state that irrespective of the type of the object, the semantics and the syntax of the verb remain the same in the treatment of the polymorphism of “attendre”. As the lexical semantics varies from phrase to phrase, what changes is the way in which the verb co-composes with its arguments.

Clausal Complements and “Pour”-VP

According to Bouillon and Busa (2001:155), ‘when “attendre” takes a clausal complement, the event specifies the semantic component that corresponds to the WAITED’. They further state that states are more natural if they are lexically created, artifictual (i.e. stage-level) as it is the case for adjectives.

According to Bouillon and Busa (2001:157), ‘when the verb subcategorizes for a “Pour”-VP, the event saturates the RESULT directly and is underspecified’. They state that the complex structure of the telic in the representation of “attendre” reflects appropriately the control structure of the verb: the complement that corresponds to the RESULT is subject controlled.

Different complements expressed as “pour”-VP and “que”-sentence / “de”VP saturate different roles in qualia structure: the AGENTIVE OF THE TELIC represents the WAITED, the FORMAL OF THE TELIC the RESULT:

attendre

TELIC------ ----“que” sentence / “de”-VP, (e.g WAITED)
AGENTIVE
TELIC---------- “pour”-VP, (e.g. RESULT)
FORMAL

The distinction explains the different modal force of the complements.

When “attendre” take an NP, the semantics of the verb does not change. An NP may apppear as the object of the verb if its semantics is rich enough to satisfy such a requirement.

According to Bouillon and Busa (2001:158), “attendre” may compose with nouns denoting a “created” individual, like for example “Newspaper”, “car”, “symphony” denote both the music and the process of playing it.

According to Bouillon and Busa (2001:160), ‘ one of the possible interpretations is that the individual is waiting for the object to be in his /her possession of the user ‘so that he /

she can use it'. They state that another possible interpretation is where the AGENTIVE OF THE TELIC of the verb is bound to the AGENTIVE of the noun and the result is bound to the TELIC of the noun. With individual nouns, "attendre" has two interpretations that are constructed by different bindings of events provided by the qualia of the noun.

Bouillon and Busa (2001:164) state that 'when the nominal denotes a process like "voyage' (trip) or "course" (race), the individual is waiting for the beginning of the action'. They state the relationship between the two senses is specified by the qualia structure.

According to Bouillon and Busa's (2001:165) analysis of the French verb "attendre", they claim that their presentation of this analysis extend to the Italian verb "aspettare" (wait). They behave differently even though they are almost synonyms. The different acceptability of the two verbs (attendre and aspettare) depends on the presuppositions of the verbs.

2.2.4 Pustejovsky (2001a)

Pustejovsky (2001a) attempts to respond to Fodor and Lepore's "The Emptiness of the Lexicon: Critical Reflections on James Pustejovsky's The Generative Lexicon", regarding the research program outlined in Pustejovsky (1995).

Pustejovsky's (2001) response is focused on two themes : Fodor and Lepore's misreadings and misinterpretations of the substance as well as the details of the theory and the negative unconstructive view of the study of semantics and natural language meaning inherent in their approach. As compared with their approach a framework, Generative Lexicon Theory is proposed.

The continuous modification and modulation in new contexts of language expressions is the aim in the study of meaning. Generative lexicon Theory adopted the stance that human linguistic capacity is the reflection of the ability to categorize and represent the world in particular ways.

Pustejovsky (2001) argued that what makes language uniquely expressive is the way it seems to embrace meaning shifts such as polysemy. The three major themes in the study of polysemy are defined as firstly the systematic formal treatment of inherent polysemy and secondly the formal treatment of polyvalency phenomena in verbs; and lastly logical polysemy. Nouns such as “Newspaper”, “book”, “lunch” and “appointment” are used to show they are logically polysemous between different aspects of the noun meaning; in which all the above nouns will denote two ways of meaning if used in different sentences e.g. “Lunch” denotes (food and event).

These diverse conceptions of syntactic variation, type shifting and regular polysemy in a systematic formulation of sematic compositionality has to be unified by Generative Lexicon Theory as one of its goals.

Early Semanticists and Semasiologists, viewed polysemy as the life force for human language and as a necessary part of the functioning of language itself. They also attempted to account for meaning shifts in language.

Generative Lexicon Theory is concerned with the following problems (Bouillon and Busa 2001:55):

a. Explaining the polymorphic nature of language,
b. Charecterizing the semantical of natural language utterances,
c. Capturing the creative use of words in novels contexts,
d. Developing a richer, co-compositional semantic representation.

Generative Lexicon Theory assumes a fixed number of generative device that are to construct semantic expressions, i.a. four basic levels of linguistic representation (Bouillon and Busa 2001:56):

ARGUMENT STRUCTURE: Specification of number and type of logical arguments.
EVENT STRUCTURE: Definition of the event type of an expression and its subeventual structure.
QUALIA STRUCTURE: A structural differentiation of the predicate force for a lexical item.

LEXICAL INHERITANCE STRUCTURE: Identification of how a lexical structure is related to other structures in the type lattice.

The above levels are connected by a set of generative devices. They include (Bouillon and Busa 2001:56): Type coercion, subselection, and co-composition. Word meaning is structured on the basis of four generative factors or qualia roles:

FORMAL: the basic category that distinguishes the object within a larger domain.
CONSTITUTIVE: the relation between an object and its constituent part.
TELIC: the object's purpose and function,
AGENTIVE: Factors involved in the object's origin or "coming into being".

The qualia structure is at the core of the generative properties of the lexicon. This may be illustrated as follows.

```
α

  ARGSTR =      [ ARG1 = x]
                [ ……..    ]

  QUALIA =      [ CONST= what x is made of]
                [ FORMAL= what x is ]
                [TELIC =funtion of x]
                [AGENTIVE=how x came into being]
```

Nominal Polysemy

Pustejovsky (2001) models the syntactic and semantic behavior of polysemous nominal types such as "lecture", "price", "book", and "lunch". These nouns are represented as complex structures. There is a distinction between "food" and "lunch" in that "lunch" seem to be more complex. The qualia structure for "food" may be represented as follows:

```
 Food
ARGSTR = [ARG1=x : Substance]

 QUALIA = [FORMAL =x]
          [TELIC = eat (e,y,x)]
```

The contradictory nature of the two senses for “food” and “lunch” reveals a deeper structure that relates to these senses. This is called a complex type (or dot object). The dot object can be thought of as an abstraction of the relation between the types, where the types are abstracted together.

The lexical structure for “book” as a dot object is represented below:

```
( book                                          )
  ARGSTR =     [ARG1 =y: information]
               [ARG2 = x: phys.obje]

  QUALIA =     [information.phys.obje.]
               [FORM=hold (x,y)      ]
               [TELIC = read (e,w,x,y)]
               [AGENT=write (e^1,v,x,y)]
```

The idea of complex type proves helpful in explaining the polysemy associated with process – result nominalizations.

The range of complex types encounter in natural language includes the following type combinations (Bouillon and Busa 2001:63):

a. Phys-obj. info: e.g. “book”, “record”:
b. event.event: e.g. “construction”, “examination”:
c. event.question: e.g. “exam”:
d. event.food: e.g. “lunch”, “dinner”:
e. event.human: e.g. “appointment”

Verbal Polysemy (Bouillon and Busa 2001:64-68)

A verb can be seen as exhibiting polysemous behavior in many ways. These may be separated into syntactic (which deals with polyvalency, object deletion and general properties of argument expression) and semantic (which deals with the different but related senses of a verb) polysemies.

When qualia structure of an NP is combined with that of a governing verb co-composition emerges to captures the creative use of words. Advantages of introducing more abstract and linguistically motivated descriptions, are as follows (Bouillon and Busa 2001:67):

a. To allow for a correct treatment of argument selection. To limit the production of unmotivated ambiguous parses;

b. To permit a correct “reconstruction” of the full explicit metonymic constuction;

c. To introduce a clear distinction, whenever possible, between basic meanings and derived meanings that are produced generatively.

Pustejovsky (2001) used the verbs “tell” and “read” to illustrate how much of the syntactic behavior of a lexical item is determined by the semantic typing. The verb “read” permits complements of type physical object; while the verb “tell” will selects for a complement that is of type information and does not allow “book” as its complement.

What Fodor and Lepore proposed on this matter (Pustejovsky 2001):

1. Regarding semantic differentiation involving argument structure and object drop phenomena, Fodor and Lepore, deny that any generalizations are possible and are silent on this question.

2. Concerning the conditions for a constraints on coercion. Fodor and Lepore deny that any systematicality or generalization is possible, but are silent on what is responsible for the observable regularities of behavior.

3. For polysemy phenomena in verbs and nouns, Fodor and Lepore claim to not understand the relevant examples and doubt that they are real phenomena in any case. Hence, even in the face of observable systematicity, they are silent on this issue.

4. Regarding the qualia structure and how the generative factors contribute to word meaning, Fodor and Lepore provide no explanation for how qualia-related

inferences and not arbitrarily any others are associated with the meanings of lexical items. They provide no system predicting how interpretations should be performed.

5. Finally, regarding cross-linguistic phenomena, their account is unable to say anything of interest about how languages vary systematically along a number of semantic parameters, including coercion and type selection, because such generalization would be arbitrary or conventionalized at best.

2.2.5 **Pustejovsky** (2001b)

Language and category formation

According to Pustejovsky (2001:91) early 'reseachers struggeled to find a satisfactory definition for category or concepts, that meet formal demands on soundness and completeness'. He points out that in their endeavour the account of knowledge representation was missing.

Pustejovsky's approach to answer the basic five questions regarding concept construction, is clearly seen when he describes a framework within which he constructs complex types from a set of basic building blocks. Pustejovsky (2001:92) finds 'a type constructional system of concepts based in part on the classic Aristotelian notion of substance, together with the generative mechanisms recently developed in Generative Lexical Theory.

Generative Lexicon Theory, according to Pustejovsky (2001:93) 'assumes that semantic descriptions, as constructed from lexical expressions, make use of four kinds (levels) of linguistic representations'. He claims that these include argument structure, Event structure, Qualia structure and Lexical inheritance structure. According to Pustejovsky (2001:95), 'motivation for three of the four levels of representation in GL are tied to fairly familiar methodological strategies'.

Toward a Generative Type System

Pustejovsky (2001:96) claims that 'a distinction in conceptual partitioning of the word involves the notion of natural kind. He states that some concepts are bound directly to a specific activity or event. He noticed that conventional approaches to lexicon design and lexicography are liberal with forming taxonomic structures. He further states that 'WORDNET' handles both contrastive ambiguity and complementary ambiguity (polysemy) in the same way.

Pustejovsky (2001:97) points out that the extreme difficulty facing semanticist is to add ontological richness to a formal type system for language rather than examining the shortcomings of WORDNET. He argued that WORDNET does not model lexical items in formal terms but many approaches to ontology construction do formalize the categories as types.

The Natural Types

According to Pustejovsky (2001:98), these types refer to real objects that are identified through classic principles. He explores the basic distinction between natural kinds and artifacts. What concerns Pustejovky (2001:98) is the difference in how natural kinds are evaluated relative to artifacts. He argues that the major discriminant in distinguishing between natural kinds and artifacts is intentionality as expressed in relation to the agentive and telic qualia in GL.

For the construction of predicates from natural types, the following is noticed below : E_n and $\underline{t}$ are in the set of natural types, N:

(1). a. die:$e_n \rightarrow \underline{t}$:

b. touch: $e_n \rightarrow ({}_n \rightarrow \underline{t})$

c. be under: $e_n \rightarrow (e_n \rightarrow \underline{t})$,

d. give: $e_N \rightarrow (e_N \rightarrow (e_N \underline{t})$

Concerning the predicates that select for natural types, Pustejovsky (2001:101) maintains that the predicate and relational types that result from natural type entities are those predicates and relations that are natural types themselves:

Pustejovsky (2001:101) observes ‘that the propositions formed by the composition of a natural predicate with a natural type entity will be ‘brute propositions’. He cites Anscombe’s (1958) and Searle’s (1995) proposal regarding ‘brute facts’ to explain the qualia and the principle of type ordering.

Functional Types

The functional types represented as F, are virtual, in that from a realist perspective, each is still identifiable by the properties that satisfy its being a natural type.

Pustejovsky (2001:103) identifies other aspects of intentional description as associated with the AGENTIVE quale. He further refers to natural artifacts as those naturals with no expressed purpose or TELIC associated with them.

When reference is only made to AGENTIVE, those concepts will be called ‘semi-intentional’. Real artefactual concepts such as ‘table’ , ‘knife’ , and ‘computer’ are intentionally defined by reference to both AGENTIVE and TELIC. According to Pustejovsky (2001:104), ‘ other concepts that are semi-intentional in nature are types involving individuals where a relational state is defined in terms of the AGENTIVE quale.

When coming to the predicates, natural predicates are defined in terms of natural entity types, but functional predicates are defined in terms of functional entities. Here are some examples of functional propositions composed from functional entities and functional predicates:

(1). a. The beer spoiled.
b. The rabbit ate the carrots.
c. The rabbit fed the bunny the food.

According to Pustejovsky (2001:106), ‘if the functional expression such as “ the beer” is predicated by a natural event expression, then the natural proposition is denoted by virtue of the base natural type constituting the expression , i.e. ‘liquid’.

Pustejovsky (2001:106) maintains that ‘ in the context of a functional predicate, such as the verb “spoil”, the same expression denotes both a natural proposition and a functional proposition’.

A Complex Type Language

According to Pustejovsky (2001:107), such a language introduces types containing a coherence relation between two natural or functional types. Here are some resulting objects that are also virtual types:

(2) a. phys-obj. info:e.g. “book”, “record”
b. event-event:e.g. “contruction”. “examination”
c. event-question:e.g. “exam”
d. animal-rational:e.g. “person”

Here are some examples of complex propositions, below, making use of complex entities and complex relations:

(3) a. The music played.
b. The man read the book.
c. The man bought the food from the vendor.

Coercion Revisited.

According to Pustejovsky (1996:111), ‘ type coercion is a semantic operation that converts an argument to the type which is expected by a function, where it would result in a type error’. He maintains that these operators are the qualia themselves and the resulting types are the values of the qualia.

Pustejovsky (2001:109) presents the following value of the predicate ‘enjoy’, below in (4).

(4). a. SPECIFICATION IN COERCION: For a coercing predicate ß and its argument α, the specification is controlled by the following two factors:

b. the selectional specificity of the coercing predicate,

c. the aliases Σα,available to the argument being coerced, here are the two types of aliases for an expression:

(i) Globally available methods of type-shifting, such as grinding and packaging.

(ii) Locally available values in the qualia structure of an expression, such as TELIC and AGENTIVE events.

Pustejovsky (2001:110), claims that 'where the complement is a functional type, the natural complement of a functional type can be selected and itself coerced into the selected type.

According to Pustejovsky (2001:110), Natural Coercion (like enjoy) imposes an event description interpretation on its complement. He distinguishes between types of coercion operations that occurs in grammar i.e. Domain-preserving and domain-shifting. He provides the following table of coercion relations:

COERCION TYPES	**Rank- preserving**	**Rank-shifting**
Domain-preserving	Sub-typing	Evaluative-predicates
Domain-shifting	Natural-coercion	Imposed-TELIC

The sentences in (5) contain instances illustrating the distinct coercion types referred to in the figure above.

(5) a. Mary threw the rock

b. John enjoyed the flower

c. The water spoiled

d. John began the rock

Elements of Type Construction

Pustejovsky (2001:112) provides the following answers for the questions he posed: that (a) the criteria for the subtyping are distinct to each type rank; that is, each level of type is structured according to distinct partitioning strategies; (b) Underspecification over the different levels of representation in GL allows for parameterizable views on specialization relations in the type system.

Pustejovsky (2001:112) clearifies these points by discussing how the type-subtype relation in the natural type lattice and the functional type, F, are structured:

According to Pustejovsky (2001:113), 'discriminant properties (both logical and natural) are typed according to the kind of opposition involved'. He also points out that unlike the natural types, where subtypes are defined in terms of natural tangible discriminants, subtyping in F operates in an entirely different manner, in terms of functional behavior.

Pustejovsky (2001:117) maintains that in many cases there is no justifiable natural subtyping relation between two types.

The Conceptual Architecture

Pustejovsky (2001:119) provides a summary of a three-way distinction of increasingly complex types (or ranks) as follows:

a. NATURAL TYPES: Predication from the domain of substance, e.g. the qualia FORMAL or CONST.
b. FUNCTIONAL TYPES: Predication includes reference to either AGENTIVE or TELIC qualia.
c. COMPLEX TYPES: Cartesian type formed by Dot object construction.

Similarly, the domains of relations and properties are also partitioned into three ranks:

a. NATURAL EVENTS: Arguments in the predicate or relation are only from the domain of substance, e.g. the qualia FORMAL or CONST.

b. FUNCTIONAL EVENTS: At least one argument in the predicate or relation is a functional type, e.g, makes reference to either AGENTIVE or TELIC qualia.
c. COMPLEX EVENTS: At least one argument in the predicate or relation is a complex type, e.g. a type formed by Dot object construction.

2.3 ASPECTUAL VERB CLASSES

2.3.1 Four aspectual verb classes

Since Vendler (1967) four aspectual verb classes have been recognized. They are divided into two classes. i.e. stative classes which do not involve any change (non-dynamic) and non-stative classes which are distinguished by means of the presence or absence of an inherent temporal endpoint: accomplishments and achievements have such an endpoint and they are telic predicates. Activities do not have any inherent temporal endpoint and they are atelic predicates (Levin and Hovav 2005).

These verb classes have been identified by means of certain temporal properties i.e. temporal duration, temporal termination and internal temporal structure (or the lack of it). Two other properties have also received some attention: agency and causation, but they are not temporal properties.

Rosen (1999: 3) defined the four aspectual verb classes as follows:

Activities: events that go on for a time, but do not necessarily terminate at any given point. They are atelic and they have temporal duration, e.g.

a. Terry walked for an hour.
b. Terry is driving a car.

Accomplishments: events that proceed toward a logically necessary terminus: they are telic predicates with duration:

a. Terry built five houses in two months.
b. The child is drawing a circle.

Achievements: events that occur at a single moment and therefore lack continuous tense (e.g. the progressive). They are also telic predicates but they designate instantaneous events that result in a change of state:

a. Terry reached the summit in 15 minutes.
b. The vase broke.

States: non-actions that hold for some period of time but lack continuous tense:

a. Terry knows the answer.
b. Terry resembles his brother.

Temporal duration

Duration refers to the time during which a state or event exists, lasts or continues. A durative property is to be distinguished from an instantaneous event as in achievements above in which the resultant change happens at once.

States and events with duration may be identified by means of various diagnostics for duration:

(1) Duration adverbial expressions e.g. for an hour, from one to three:
   a. John pushed the cart [for three minutes] (activity)
   b. John was happy [for three years] (state)
   c. *He ate the pie [for an hour] (accomplishment)
   d. *He reached the summit [for an hour] (achievement)

(2) Inceptive and terminative expressions with verbs such as **begin, stop**. Such situations have a certain duration:
   a. She began to run (Activity)
   b. They stopped loving each other (State)

(3) Momentary or locating adverbials:
   He pushed the cart [at noon] (Activity)

(4) Durative adverbials:
He pushed the cart [slowly/quickly] (Activity)

(5) Progressive: He is pushing the cart

Telicity (temporal termination)

"Telic events have a change of state which constitutes the outcome or goal of the event. When the goal is reached, a change of state occurs and the event is complete. Telic events have a natural final endpoint or intrinsic bound" (Smith 1997:19). Accomplishments and achievements are events with such a final endpoint:

a. She ate an apple (Accomplishment)
b. She arrived in Cape Town (Achievement)

There are various diagnostics for telicity:

(1) Temporal expressions of completion with **in**:
   a. He repaired the car [in an hour] (Accomplishment)
   b. She left [in an hour] (Achievement)

(2) With verbs of completion:
He (finished) repairing the car (Accomplishment)

(3) Verbal expressions of time with **take**:
It took him an hour to repair the car

Levin and Hovav (2005) discussed two major approaches to the representation of telicity:

First approach: **result** state or **culmination** perspective: the endpoints of accomplishments and achievements, which determine their telicity, are represented as result states:

(i) The soup was cool
(ii) The soup cooled

(iii) Alex cooled the soup

Cool can represent an adjective which describes an entity in a **state** as in (i), an **inchoative** intransitive verb describing the attainment of this state by an entity (an achievement) as in (ii), and a transitive causative verb describing a **cause** bringing about this state in an entity (an accomplishment) as in (iii). The relation between the different uses of the same predicate is captured by **deriving** the **achievement** from the **state** with the addition of the primitive predicate BECOME to the state's predicate decomposition, and the accomplishment from the achievement by the addition of the predicate **cause** to the achievement's decomposition. In addition, the derivation of an accomplishment from an activity can be viewed as the addition of a result state to an activity.

Second approach: makes reference to mereological (i.e. part) structure of events, and in particular whether an event has a proper subpart which could be described by the same event predicate. Telic predicates are "indivisible", or "quantized", i.e. they describe events which have no proper parts describable by the same predicate. The indivisibility of the event described by a predicate is attributed to the existence of an inherent terminal point. Since any subpart of the event does not include this terminal point, it cannot be described by the same telic predicate. In many instances, telic predicates have a designated argument, which plays a crucial part in determining whether the inherent terminal point has been attained.

Agentivity and causation

Levin and Hovav (2005) discussed in some detail the non temporal semantic properties of causation and agentivity which are involved in the aspectual verb classes.

Agentivity

a. Most statives are nonagentive, leading some researchers to identify what are actually **agentivity tests as stativity** tests, e.g. if a predicate lacks an imperative form, then it is stative (*know! vs learn!). But it is not **stativity** that is at issue,

since **nonagentive activity** verbs also lack imperatives (*Roll downhill ball! *Babble, stream!). Rather, the imperative is **sensitive** to agentivity.

b. Certain diagnostics purported to single out **achievements** actually turn out to be sensitive to **agentivity**, picking out achievements because they are **nonagentive** e.g. achievements contrast, with accomplishments in not being found with adverbs such as **attentively** or **carefully** as in *My mother carefully noticed the spot vs. My mother carefully read the letter. But the determining factor is **not aspect** but **agentivity** as shown by the oddness of *The top carefully spin on the table, which contains a **nonagentive activity**.

c. Thus, once aspectual classes are purely temporally defined, agentive and nonagentive predicates are found in every aspectual class.

Casativity (in relation to **accomplishment** and **achievements**): The core accomplishments such as **cool**, **empty** and **melt** are indeed causative, and many achievements such **reach**, **die**, , **notice** are noncausative. Some researchers say that all accomplishments are causatives. If so: aspectual classes have a nontemporal definition. But the conflation of causation with aspectual classification cannot be correct:

a. Certain verbs such as **break** and **explode** have causative and noncausative uses, which are indistinguishable aspectually since they are usually both **punctual**.

b. The intransitive uses of break, cool, harden and melt are uniformly noncausative, yet these verbs vary in their aspectual properties, being telic (break) or telic or atelic(cool), and durative (cool) or punctual (break).

c. There are pairs consisting of semantically related causatives and noncausatives in all aspectual classes. Thus, the members of causative verb classes do not have uniform temporal properties, while the members of classes defined by temporal properties are not uniformily causative.

Agentivity and causation should not be included among the criteria for aspectual classification.

Complex events

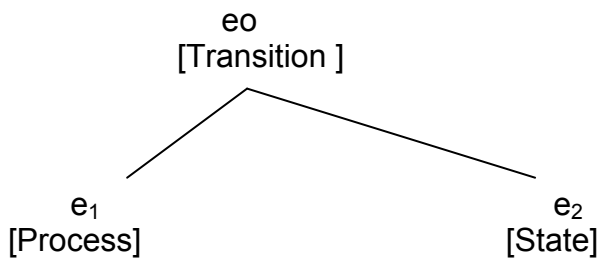
Tenny and Pustejovsky (2000) discussed the issue of predicate decomposition in their introductory article.

The meaning of a verb can be analyzed into a structured representation of the event that the verb designates.

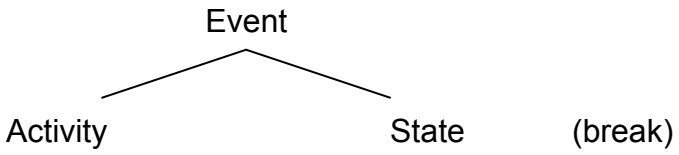
The grammar does not treat events only as unanalyzeable atomic units, but recognizes the existence of **complex events** having an internal structure.Complex events are structured into an **inner** and an **outer** event, where the outer event is associated with **causation** and **agency**, and the inner event is associated with telicity and **change of state** e.g. an accomplishment predicate as in **John sliced the bread** can be represented as composed of an inner and outer event. The inner event is the telic event in which the bread undergoes a change of state in a definite amount of time (such that it becomes sliced where it was not sliced before). The outer event is the event in which John acts agentively (to do whatever is involved in theact of slicing). Since the outer event causes the inner one, it is associated with **causation**.

Levin and Rappoport (1988) mention the predicates **cause** and **become** in these complex events. Predicates may thus be decomposed into more basic predicates. A cause argument relates to a causer argument and an inner expression involving a change of state in the argument represented with the predicate **become**.

Pustejovsky (1995) develops a “syntax of event structure” which makes explicit reference to **quantified events** as part of the word meaning. He further introduces a tree structure to represent the temporal ordering and dominance constraints on an events and its subevents e.g. a predicate such as **build** is associated with a complex event:



The process consists of the building activity, the state represents the result of there being the object built. See also Grimshaw (1990):



In this structure, the activity consists of what **x** does to cause the breaking, and the state is the resultant state of the broken item. The activity corresponds to the **outer causing event** and the state corresponds in part to the **inner change of state event**.

Pustejovsky and Grimshaw assume a specific level of representation for event structure, distinct from the representation of other lexical properties. The grammar of natural language structures certain of the events represented by verbs into complex events, with a causative outer event and a change of state inner event.

2.3.2 Activities

Activities are processes that involve physical or mental activity, and consist entirely in the process (Smith 1992:23)

Activities may be identified by means of the following features:

(1) They are durative: they go on for a time: She walked for an hour. The time stretch of activities is inherently indefinite (Mourelatos 1981:192). Such sentences describe an event as extended in time (Moens, Steedman 1988:16)

(2) They are atelic. The feature [±telic] groups states and activities together on the one hand, and achievements and accomplishments on the other. Activities have the feature [-telic]: once they have started, they can go on indefinitely, since the nature of the eventuality itself does not determine its endpoint. In the activity: **Mary ran**, the description of the event does not say when or if the running event stopped (Rothstein 2004:7). According to Smith (1997:23), activities terminate or stop but they do not finish: the notion of completion is irrelevant to a process event. They have no anticipated result or any particular conclusion (Vendler 1967:100).

(3) **Cumulativity**

Activities have the part-whole relation of cumulative events. If John walked in the park for some interval, the sub event of his walking for a few minutes of the interval is also an instance of walking (Smith 1992:23)

"A predicate P is cumulative if it has at least two distinct entities in its denotation, and for any x and y in P, their sum is also in P. Krifka argues that **run** is cumulative because the sum of two running events is also in the denotation of **run**" (Rothstein 2004:8)

(4) **Homogeneity**

Activities are homogeneous: " any part of the process is of the same nature as the whole" (Vendler 1967:101).

"A predicate X is strongly homogeneous if every subpart of it is also in X. Thus **love Mary** and **run** are strongly homogeneous, since they can be subdivided into a number of events all of which are also events in **love Mary** and **run**, resp. Homogeneous predicates tend to be cumulative. If x is strongly homogeneous and x and y are in X, and x is a proper part of y, then there must be some z which is also a proper part of x and which is in X (Rothstein 2004:10).

(5) **Stage**

Activities generally appear in the progressive with the feature [+stage]: "A sentence with a verb in the progressive asserts that an eventuality of a particular kind is in progress or going on" (Rothstein 2004:11).

DIAGNOSTIC FOR ACTIVITIES

(1) Verb classes

Verb classes denoting activities:

Motion verbs: walk, run, crawl, creep, flee

Communication verbs: gossip, talk, joke

Weather verbs: rain, snow, thunder, lightning, blowing of wind

Physical perception: see, hear, smell

Verbs of existing involving motion: float, flutter, sway, rotate, vibrate

Performance verbs: play, dance, whistle

Verbs of searching: hunt, fish, search, dig

Verbs involving the body: sneeze, snore, breath, bleed, cough, sweat, laugh, weep, sleep

Verbs of bodily care: shave, dress, wash, undress

(2.) **Duration**

(2.1) Durative adverbial expressions with **for**:

a. They walked [for an hour]

b. She danced [for 10 minutes]

(2.2) Inceptive and terminative verbs:

a. It **began** to rain at 3

b. They **stopped** playing at 5

(2.3) Momentary or locating adverbials:

a. He shaved [at 7]

b. It rained [at noon]

2.4. Durative adverbials:

a. They worked [slowly]

b. He ran [quickly]

2.5. Progressive:

He is pushing the car

ACTIVITIES IN SESOTHO

Duration

(i) With adverbs of duration (a certain time)

(a) Kgothometsa:

Thabo o kgothomeditse koloi [hora]

(Thabo pushed the car for an hour)

*Thabo o kgothomeditse koloi [metsotsong e mehlano]

(Thabo pushed the car in five minutes)

(b) tsheha:

Seswaswi se tshehile [dihora tse tharo]

(A joker laughed for three hours)

*Seswaswi se tshehile [metsotsong e mehlano]

(A joker laughed in five minutes)

(c) Palama:

Seswaswi se palame pere [matsatsi]

(A joker rode a horse for days)

*Seswaswi se palame pere [matsatsing a mane]
(A joker rode a horse in four days)

(ii) With inceptive/terminative: 'qala' (begin) / 'emisa' (stop)

(a) Kgothometsa
Thabo o qadile ho kgothometsa koloi
(Thabo began pushing the car)

Thabo o emisitse ho kgothometsa koloi
(Thabo stopped pushing the car)

(b) Tsheha:
Thabo o qadile ho tsheha batho
(Thabo began laughing at people)

Thabo o emisitse ho tsheha batho
(Thabo stopped laughing at people)

(c) Palama:
Thabo o qadile ho palama pere
(Thabo began riding a horse)

Thabo o emisitse ho palama pere
(Thabo stopped riding a horse)

(iii) Momentary adverbial (Locative NPs/PPs)

(a) Kgothometsa:
Thabo o kgothomeditse koloi [thapama]
(Thabo pushed the car at noon)

Thabo o kgothomeditse koloi [mesong]
(Thabo pushed the car in the morning)

Thabo o kgothomeditse koloi [ka 5]
(Thabo pushed the car at 5)

(b) Tsheha:
Thabo o tshehile ngwana [thapama]
(Thabo laughed at the child at noon)

Thabo o tshehile ngwana [mesong]
(Thabo laughed at the child in the morning)

Thabo o tshehile ngwana [ka 5]
(Thabo laughed at the child at 5)

(c) Palama:
Thabo o palame pere [thapama]
(Thabo rode a horse at noon)

Thabo o palame pere [mesong]
(Thabo rode a horse in the morning)

Thabo o palame pere [ka 5]
(Thabo rode a horse at 5)

(iv) With durative adverbs (Manner) / PPs

(a) Kgothometsa:
Thabo o kgothomeditse koloi [butle]
(Thabo pushed the car slowly)

Thabo o kgothomeditse koloi [ka potlako]
(Thabo pushed the car quickly)

(b) Tsheha:
Thabo o tshehile ngwana [butle]
(Thabo laughed at the child slowly)

Thabo o tshehile ngwana [ka potlako]
(Thabo laughed at the child quickly)

(c) Palama:
Thabo o palame pere [butle]
(Thabo rode a horse slowly)

Thabo o palame pere [ka potlako]
(Thabo rode a horse quickly)

(v) With imperfective 'Ne'

(a) Kgothometsa:
Thabo o ne a kgothometsa koloi
(Thabo was pushing the car)

(b) Tsheha:
Thabo o ne a tsheha ngwana
(Thabo was laughing at the child)

(c) Palama:
Thabo o ne a palame pere
(Thabo was riding a horse)

2.3.3 States

Features of states

States are stable situations which hold for a moment or an interval: they have the property of duration. States consist of an undifferentiated period without internal structure. They have no dynamics and require external agency for change (Smith 1997:32).

States are cumulative homogeneous and non-dynamic (they may not appear in the progressive).

States are cumulative: If John was in the state of believing in the afterlife from 1970 to 1980 and he was in the same state from 1980 to 1990 then he believed in the afterlife from 1970 to 1990.

States are strongly homogeneous: **John love Mary for 20 years** entails that any time during those 20 years he loved her, even down to instants (Rothstein 2004:14).

States are atelic and co-occur with **for x-time** in the same way as activities: He loved her [for years]

DIAGNOSTIC FOR STATES

(1). Verb classes

Conjecture verbs: know, feel, recognize
Experiencer verbs: Amaze, amuse, annoy, love, admire, hate, fear, think, be mad, be lazy, be glad
Verbs of existence: live, stay, wait, hide
Verbs of bodily positions: fat, lean, healthy, hungry, thirsty, sick
Generic predicates: Lions eat meat, Frogs stay in water and on land

They hold of classes of kinds and are individual-level predicates.

Habitual predicates:

Sentences with **frequently, often, everyday, always** e.g.

- eat meat everyday
- often go to town
- frequently play tennis

Habitual predicates present a pattern of events and denote a state that holds consistently over an interval.

(2). Durative adverbial expressions: [for x-time]

He knew her [for years]

(3). Agentivity

Stative eventualities do not generally occur:

(1) in the complement of **force** and **persuade:**
*John forced Harry to know.

(2) as imperatives:
*know the answer

(3) with adverbs indicating agentivity (carefully, willingly):
*John deliberately know the answer

(4) in the pseudo-cleft constructions:
*What John did was know the answer

(5) with instrumentals:
*The door was open with a key

STATES IN SESOTHO

(1). Duration

(i) With adverbs of duration

(a) ba toropong:
Batho ba toropong [hora]
(The people are in town for an hour)

*Batho ba toropong [metsotsong e mehlano]
The people are in town in five minutes)

(b) kula:
Ngwana o kutse [matsatsi a mararo]
(A child was sick for three days)

(c) thaba:

Batho ba thabile [hora]

(The people are happy for an hour)

*Batho ba thabile [metsotsong e mehlano]

(The people are happy in five minutes)

(ii) with inceptive/ terminative ‘qala’ / ‘emisa’

(a) ba toropong:

*Batho ba qadile ho ba toropong

(The people began to be in town)

*Batho ba emisitse ho ba toropong

(The people stopped to be in town)

(b) kula:

*Ngwana o qadile ho kula

(The child began to be sick)

*Ngwana o emisitse ho kula

(The child stopped to be sick)

(c) thaba:

Batho ba qadile ho thaba

(The people began to be happy)

*The sentence in (c) ‘thaba’, has a change of state interpretation (Meaning they started to enjoy).

(iii) With momentary/locating adverbials

(a) ba toropong:

Batho ba toropong [thapama]

(The people are in town at noon)

Batho ba toropong [mesong]
(The people are in town in the morning)

Batho ba toropong [ka 5]
(The people are in town at 5)

(b) kula:
Ngwana o kutse [thapama]
(The child was sick at noon)

Ngwana o kutse [mesong]
(The child was sick in the morning)

Ngwana o kutse [ka 5]
(The child was sick at 5)

(c) thaba:
Batho ba thabile [thapama]
(The people are happy at noon)

Batho ba thabile [mesong]
(The people are happy in the morning)

Batho ba thabile [ka 5]
(The people are happy at 5)

(iv) Durative adverbs of manner/PPs

They are not compatible with adverbs of indirect duration:

(a) ba toropong:
*Batho ba toropong [butle]
(The people are in town slowly)

(b) kula:

*Ngwana o kutse [butle]

(The child was sick slowly)

*Ngwana o kutse [ka potlako]

(The child was quickly sick)

(c) thaba:

*Batho ba thabile [butle]

(The people are slowly happy)

*Batho ba thabile [ka potlako]

(The people are quickly happy)

(v) With imperfective 'ne'

(a) ba toropong:

Ba ne ba le toropong

(The people were in town)

(b) kula:

*Ngwana o ne a kula

(The child was sick)

(c) thaba:

*Batho ba ne ba thaba

(The people were happy)

(2). Telicity

(i) With verbs of completion: 'qeta'

(a) ba toropong:

*Batho ba qetile ho ba toropong

(The people finished to be in town)

(b) kula:

*Ngwana o qetile ho kula

(The child finished to be sick)

(c) thaba:

*Batho ba qetile ho thaba

(The people finished to be happy)

(ii) With verbs of time

(a) ba toropong:

*Ho nkile batho [hora] ho ba toropong

(It took people an hour to be in town)

(b) kula:

* Ho nkile ngwana [hora] ho kula

(It took a child an hour to be sick)

(c) thaba:

*Ho nkile batho [hora] ho thaba

(It took people an hour to be happy)

2.3.4 Accomplishments

Features of accomplishments

(1.) Process and state

Accomplishments consist of a process and an outcome or change of state. The change is the completion of the process (Smith 1997:26). Thus, accomplishments are culminated process with a temporal extension and a consequent state (Moens, Steedman 1988:17). They are change of state predicates.

(2.) Telicity

Accomplishments are telic, they are bounded. An accomplishment is an activity which moves toward a finishing point or set terminal point or culmination or telic point:

John ate a sandwich.

This event of John's eating is over when the sandwich is eaten. It has an internally determined point at which it ends. Telicity is indicated by non-cumulativity (Rothstein 2004:21).

(3.) Non-homogeneity

Accomplishments fail to be homogeneous: a part of an **eat the sandwich** event cannot be described as an **eat the sandwich** event because the whole sandwich isn't eaten. This property of downward homogeneity is Krifka's property [+quantized] (Rothstein 2004:21).

(4.) Stages

Accomplishments have the property of having stages: they occur in the progressive: John is eating a sandwich. (Rothstein 2004:22).

DIAGNOSTICS FOR ACCOMPLISHMETS

(1.) Verb classes

Verbs of creation: build, write, paint, draw
Verbs of ingesting: eat, drink, chew
Verbs with direction; walk to the river

(2.) Features of telicity:

The grammatical correlates of telicity involve the notion of completion:

(2.1) With verbs and expressions of completion with **finish, in an hour:**

With completion adverbial expressions:

Sam walked to school [in an hour]

With verbs of completion:

Sam finished writing a letter.

(2.2) With verbs of time: **take + time**

It took Sam an hour to walk to school.

(3.) Progressive

Sam is walking to school

ACCOMPLISHMENTS IN SESOTHO

(1.) Duration

(i) Adverbs of duration [Certain time]

(a) ja:

*Ngwana o jele apole [hora]

(A child ate an apple for an hour)

Ngwana o jele apole [metsotsong e mehlano]

(A child ate an apple in five minutes)

(b) ‘ngola’:

*Ngwana o ngotse lengolo [hora]

(A child wrote a letter for an hour)

Ngwana o ngotse lengolo [metsotsong e mehlano]

(A child wrote a letter in five minutes)

(c) ‘tsamaya’:

*Ngwana o tsamaetse toropong [hora]

(A child walked to town for an hour)

Ngwana o tsamaetse toropong [metsotsong e mehlano]
(A child walked to town in five minutes)

(ii) With inceptive/terminative: 'qala' / 'emisa'

(a) ja:
Ngwana o qadile ho ja apole
(A child began eating an apple)

Ngwana o emisitse ho ja apole
(A child stopped eating an apple)

(b) 'ngola':
Ngwana o qadile ho ngola lengolo
(A child began writing a letter)

Ngwana o emisitse ho ngola lengolo
(A child stopped writing a letter)

(c) 'tsamaya':
Ngwana o qadile ho tsamaela toropong
(A child began walking to town)

Ngwana o emisitse ho tsamaela toropong
(A child stopped walking to town)

(iii) With momentary adverbs / PPs / Locative NPs

(a) 'ja':
Ngwana o jele apole [thapama]
(A child ate an apple at noon)

Ngwana o jele apole ka 5
(A child ate an apple at 5)

Ngwana o jele apole [mesong]
A child ate an apple in the morning)

(b) ‘ngola’:
Ngwana o ngotse lengolo [thapama]
(A child wrote a letter at noon)

Ngwana o ngotse lengolo [ka 5]
(A child wrote a letter at 5)

Ngwana o ngotse lengolo [mesong]
(A child wrote a letter in the morning)

(c) tsamaya:
Ngwana o tsamaetse toropong [thapama]
(A child walked to town at noon)

Ngwana o tsamaetse toropong [ka 5]
(A child walked to town at 5)

Ngwana o tsamaetse toropong [mesong]
A child walked to town in the morning)

(iv) With durative adverbs / manner /PPs

(a) ‘ja’:
Ngwana o jele apole [ka potlako]
(A child ate an apple quickly)

Ngwana o jele apole [butle]
(A child ate an apple slowly)

(b) ‘ngola’:
Ngwana o ngotse lengolo [ka potlako]
(A child wrote a letter quickly)

Ngwana o ngotse lengolo [butle]
(A child wrote a letter slowly)

(c) ‘tsamaya’:
Ngwana o tsamaetse toropong [butle]
(A child walked to town slowly)

Ngwana o tsamaetse toropong [ka potlako]
(A child walked to town quickly)

(v) With imperfective ‘ne’

(a) ja:
Ngwana o ne a ja apole
(A child was eating an apple)

(b) ngola:
Ngwana o ne a ngola lengolo
(A child was writing a letter)

(c) tsamaya:
Ngwana o ne a tsamaela toropong
(A child was walking to town)

(2.) Telicity

(i) With verbs of completion ‘qeta’

(a) ‘ja’:
Ngwana o qetile ho ja apole
(A child finished eating an apple)

(b) ‘ngola’
Ngwana o qetile ho ngola lengolo
(A child finished writing a letter)

(c) ‘tsamaya’

Ngwana o qetile ho tsamaela toropong

(A child finished walking to town)

(ii) With verbs of time (see also (i) above for [in x time]

(a) ja:

Ho nkile ngwana [metsotso] ho ja apole

(It took a child minutes eating an apple)

(b) ngola:

Ho nkile ngwana [matsatsi] ho ngola lengolo

(It took a child days writing a letter)

(c) tsamaya:

Ho nkile ngwana [dihora] ho tsamaela toropong

(It took a child hours walking to town)

2.3.5 Achievements

Features of achievements

Achievements have the properties telic and instantaneous. They are instantaneous events that results in a change of state, i.e. near instantaneous changes of state:

a. John died

b. Mary recognized John

An event as in (a) above which is in the denotation of **die** is a change of state from being alive to not being alive, while an event in the denotation of **recognize** as in (b) is a transition from not being able to categorize information to being able to categorize it. The actual transition event occurs in next to no time and none of its internal structure is accessible for description (Smith 1997:30, Rothstein 2004:22, 23, Carlson 1981:39, Moens and Steedman 1988:17). Achievements are changes of state which are not associated with any preceding task or activity (Ryle 1949).

With regard to telicity: achievements are not downward homogeneous since a part of a dying event is not in itself an event of dying. These events have no internal structure. They are also not cumulative with respect to contiguous events: two contiguous events of John recognizing a friend cannot together form a single event in the denotation of **recognize a friend** (Rothstein 2004:22).

DIAGNOSTICS FOR ACHIEVEMENTS

(1.) Verb classes:

Verbs of change of state: break, tear, divide, crack, crush, demolish, bend, open, close, light/extinguish (fire/lamp)
Verbs of change of possession: find, loose, steal, win, receive, pick, fruit, shoot, game, slaughter animal
Appoint verbs: appoint, choose, elect, mark, define
Verbs of disappearance: die, disappear, set (sun)
Motion verbs: arrive, depart, return

(2.) Telicity with completion:

He recognized her [in a minute]

ACHIEVEMENTS IN SESOTHO

(1.) Duration

(i) With adverbs of duration (certain time)

(a) fihla
*Ngwana o fihlile hae [hora]
(A child arrived home for an hour)

Ngwana o fihlile hae [metsotsong e mehlano]
(A child arrived home in five minutes)

(b) roba:

*Ngwana o robile kopi [motsotso]

(A child broke a cup for a minute)

Ngwana o robile kopi [motsotsong]

(A child broke a cup in a minute)

(c) hlola:

*Ngwana o hlotse mojaho [hora]

(A child won a race for an hour)

Ngwana o hlotse mojaho [horeng]

(A child won a race in an hour)

(ii) With inceptive / terminative ‘qala’ / ‘emisa’

(a) fihla:

Ngwana o qadile ho fihla hae

(A child began arriving at home)

Ngwana o emisitse ho fihla hae

(A child stopped arriving at home)

(b) ‘roba’:

Ngwana o qadile ho roba kopi

(A child began breaking a cup)

Ngwana o emisitse ho roba kopi

(A child stopped breaking a cup)

(c) ‘hlola’:

Ngwana o qadile ho hlola mojaho

(A child began winning a race)

Ngwana o emisitse ho hlola mojaho
(A child stopped winning a race)

(iii) Momentary adverbials /PPs / locative NPs

(a) ‘fihla’:
Ngwana o fihlile hae [hoseng]
(A child arrived home in the morning)

Ngwana o fihlile hae [thapama]
(A child arrived home at noon)

Ngwana o fihlile hae [ka 5]
(A child arrived home at 5)

(b) ‘roba’:
Ngwana o robile kopi [hoseng]
(A child broke a cup in the morning)

Ngwana o robile kopi [thapama]
(A child broke a cup at noon)

Ngwana o robile kopi [ka 5]
(A child broke a cup at 5)

(c) ‘hlola’:
Ngwana o hlotse mojaho [hoseng]
(A child won a race in the morning)

Ngwana o hlotse mojaho [thapama]
(A child won a race at noon)

Ngwana o hlotse mojaho [ka 5]
(A child won a race at 5)

(iv) Durative adverbs (manner) / PPs

(a) ‘fihla’:

Ngwana o fihlile hae [butle]

(A child arrived home slowly)

Ngwana o fihlile hae [ka potlako]

(A child arrived home quickly)

(b) ‘roba’:

Ngwana o robile kopi [butle]

(A child broke a cup slowly)

Ngwana o robile kopi [ka potlako]

(A child broke a cup quickly)

(c) ‘hlola’:

Ngwana o hlotse mojaho [butle]

(A child won a race slowly)

Ngwana o hlotse mojaho [ka potlako]

(A child won a race quickly)

(v) Imperfective ‘ne’

(a) ‘fihla’:

Ngwana o ne a fihla hae

(A child was arriving home)

(b) ‘roba’:

Ngwana o ne a roba kopi

(A child was breaking a cup)

(c) ‘hlola’:

Ngwana o ne a hlola mojaho

(A child was winning a race)

(2.) Telicity

(i) Verbs of completion ‘qeta’

(a) ‘fihla:

*Ngwana o qetile ho fihla hae

(A child finished arriving home)

(b) ‘roba’:

*Ngwana o qetile ho roba kopi

(A child finished breaking a cup)

(c) ‘hlola’:

*Ngwana o qetile ho hlola mojaho

(A child finished winning the race)

(ii) Verbs of time (See also [in x time] in (i) above

(a) ‘fihla’:

Ho nkile ngwana [dibeke] ho fihla hae

(It took a child weeks arriving home)

(b) ‘roba’:

Ho nkile ngwana [metsotso] ho roba kopi

(It took a child minutes breaking a cup)

(c) ‘hlola’:

Ho nkile ngwana [hora] ho hlola mojaho

(It took a child hour winning a race)

2.3.6 Coercion

Verbs may be forced or coerced to be interpreted in different aspectual classes. The section below will focus on some derived classes of verbs where one class of verbs may have more than one interpretation. Coercion thus refers to the potential of grammatical constructions to move a verb or verb phrase from one category to another (Lambalgen, Hamm 2005:170)

Smith (1997:48) uses the term “derived situation type” instead of coercion. A derived situation type is formed by a situation type shift.

The verb **arrive** has an achievement interpretation:

a. Chapman o fihlile
(Chapman arrived)

b. *Chapman o fihlile bosiu bohle
(*Chapman arrived all night)

But if a bare plural subject appears instead of a proper name as subject, the sentence is acceptable:

c. Baeti ba fihla bosiu bohle
(Visitors arrive all night)

Sentence (a) is an achievement but the interpretation in the second sentence has shifted to an activity (Lambalgen, Hamm 2005:169).

Accomplishment → Stative

Sentences may present an event as part of a pattern of situations (habitual stative) (Smith 1997:18). An accomplishment may become a stative with the addition of a PP such as **ka mehla** (always) or a verb such as **tlwaetse** (usually) followed by a preposition:

(1) Thabo **o jele apole** hoseng
(Thabo ate an apple in the morning)

(2) a. Thabo o **tlwaetse** ho ja apole hoseng
(Thabo usually ate an apple in the morning)

b. Thabo o jele apole **ka mehla** hoseng
(Thabo always ate an apple in the morning)

The VP in (1) is interpreted as an accomplishment because there is a completion of the event. In (2) no such completion is apparent because the interpretation of the sentences needs a habitual feature. The eating of the apple is not completed but it is now interpreted as a stative with a habitual meaning.

Accomplishment → Activity

Accomplishments which are telic, may be interpreted as atelic when certain prepositions such as **in, away** in English appear with the event (Smith 1997:25):

a. ….read [the book] (Accomplishment)
…read [in the book] (Activity)

b. ….paint [the fence]
…paint [away at the fence]

In Sesotho the object NP has to appear in the locative:

a. Monna o ngotse [lengolo] (Accomplishment)
(The man wrote a letter)

b. Mona o ngotse [lengolong] (Activity)
(The man wrote in the letter)

Activity → Achievement

Inceptive focuses on the beginning of the event. Inceptive focus may be due to a verb such as **begin** or a punctual adverb such as **suddenly**. In both cases the activity changed into an achievement. With inceptive focus, durativity is not possible (Smith 1997:25).

Inceptive focus with **begin**:

a. Thabo o mathile
(Thabo ran)

b. Thabo o qadile ho matha
(Thabo began to ran)

Inceptive focus with **suddenly**:

a. Thabo o mathile
(Thabo ran)

b. [Ka panyo ya leihlo] Thabo o mathile
(Suddenly Thabo ran)

Achievement → Accomplishment

a. They reached the top

b. They were reaching the top when a blizzard forced them to go back.
With the addition of the progressive, a dynamic component is added.
(Lambalgen, Hamm 2005:127, Rothstein 2004:36.37).

Accomplishment → Activity

a. He drank [a glass of wine]: O nwele [kgalase ya veine]
b. He drank [wine]: O nwele [veine]

c. She played [a sonata]: O bapetse [sonate]

d. She played [sonatas]: O bapetse [disonate]

Telic events are countable ((a) and (c) above). A telic verb with a mass NP complement (no.(b) or a bare plural NP (no (d) changes into an atelic activity (Lambagen, Hamm 2005:172, Smith 1997:20, 25, Kearns 200:219,221).

The progressive may convert an accomplishment into an unbounded event which is the process part of the event:

a. O ahile ntlo [kgweding tse tsheletseng]
(He built a house [in 6 months]

b. O ne a aha ntlo [kgweding tse tsheletseng]
(He was building a house [for 6 months]) (Kearns 200:216).

Activity → Accomplishment

Process sentences with independent explicitly stated bounds become accomplishments. Temporally bounded processes have specific finite endpoints (like telic events). But they are unlike telic events because there is no change of state:

a. Re tebukile pela noka [hora tse pedi]
(We strolled by the river [for two hours]

b. Sam o sebeditse [ho tloha ka 2 ho fihla ka 4] hoseng hona
(Sam worked [from 2 to 4] this morning)

Sentences with atelic verbs and telic adverbials are also derived accomplishments:

a. Thabo o sesitse
(Thabo swam)

b. Thabo o sesitse mekgatlelo [horeng]
(Thabo swam laps in an hour)

A telic event is present in (b): a particular amount of swimming took place during an hour.

Derived accomplishments (like achievements) may have verbs such as begin, stop which focuses on one endpoint of an event. The endpoints are changes of state with internal structure. The outcome is the change into a new state or the change out of an event to a state of rest:

a. Ba qadile butle-butle ho tsamaya
(They gradually began walking)

b. O emisitse butle ho tsamaya
(He slowly stopped walking) (Smith 1997:25)

Unbounded events can be modified to describe an event with a bounded form. A resultative phrase or a direction with an activity may change the activity to an accomplishment:

a. Ba tsamaetse [lebenkeleng]
(They walked [to the shop])

b. Ba kopantse mahe [ho ba lekweba]
(They beat the eggs [to a froth])

c. O hutse ropo [hukung]
(He pulled the rope [off the hook]) (Kearns 2000:219)

Resultative phrases allow an **x-time** expression:

a. Mary o otlantse tshepe ka hamore dihora/*dihoreng tse pedi
(Mary hammered the metal for hours/*in two hours)

b. Mary o otlantse tshepe sepapetlo ka hamore horeng tse pedi/*dihora
(Mary hammered the metal **flat** in two hours/*for hours)
(Rothstein 2004:59)

a. O a aha
(He builds)

b. O aha [ntlo]
(He builds [a house]

The verb **build** is an activity which is transformed into an accomplishment by adding a direct object such as **a house**. (Lambalgen, Hamm 2005:171).

State → Achievement

When the focus of the sentence is on the beginning of a situation, the interpretation of state changes to one of achievement i.e. inchoative achievement (Smith 1997:18). The expressions **ka panyo ya leihlo, hang-hang** changes the interpretation of a state to an achievement. The term inchoative refers to the coming about of a state and it is associated with the verb **become** in English:

a. O tsebile nnete
(He knew the truth) (state)

b. [Ka panyo ya leihlo] o tsebile nnete
(Suddenly he knew the truth (achievement)

An inchoactive interpretation as above may also appear in the context of a **when**-clause (Smith 1997:49):

O ne a kwatile ha mosadi a shapa ngwana
He was angry when the woman hit the child.

Inceptive and egressive verbs may appear with states. In such cases the sentence also has a change of state interpretation. The term inceptive refers to the beginning of an event while the term egressive refers to the ending of an event:

O qadile ho mo rata
(He began to love her)

O qadile ho kwata
(He began to get angry)

The inceptive focus is due to the verb **begin.**

O emisitse ho mo rata.
(He stopped loving her)

O emisitse ho kwata
(He stopped getting angry)

Egressive focus is due to verbs such as **stop.**

State → Activity

a. O tshwana le mmae
(She resembles her mother (state)

b. O tshwana le mmae ho feta le ho feta letsatsi le le leng le le leng
(She is resembling her mother more and more everyday (activity))

c. Ke a mo rata
(I love her)

d. Ke mo rata haholo le haholo, haholo ha ke ntse ke mo tseba le ho feta
(I am loving her more and more, the more I get to know her).

The phrase **more and more** and the progressive adds a dynamic interpretation. (Lambalgen, Hamm 2005:173).

Derived statives

(1.) Generics

Generics hold of classes or kinds and are thus individual-level predicates. Generic sentences ascribe a property to a class or kind:

Dinkwe di ja nama
(Tigers eat meat) (Smith 1997:33)

(2.) Habitual sentences

Habitual predicates present a pattern of events and denote a state that holds consistently over an interval.

Katse ya ka e ja ditweba kgafetsa
(My cat eats mice **frequently**)

Katse ya ka e jele tweba letsatsi le leng le le leng
(My cat ate a mouse **everyday**)

Fiona o ne a tlwaetse ho ba leratong
(Fiona was **often** in love)

Fred o tsamaetse sekolong kgafetsa
(Fred **frequently** walked to school)

Event sentences with the present tense may be taken as habitual:

Mary o fepa katse
(Mary feeds the cat)

Fred o bapala tenese
(Fred plays tennis) (Smith 1997:34, 50)

CHAPTER 3
MORPHOLOGY AND DERIVATIONS

3.1 AIM

This chapter will give an overview of the literature on morphology with special emphasis on derivation in various languages. The focus will be on the lexical derivation of nouns from other categories. Secondly, an overview will be given of various viewpoints on the semantics of the noun classes in the African languages. Thirdly, the morphological structure of the noun in Sesotho will be given.

3.2 OVERVIEW OF THE LITERATURE ON MORPHOLOGY AND DERIVATION

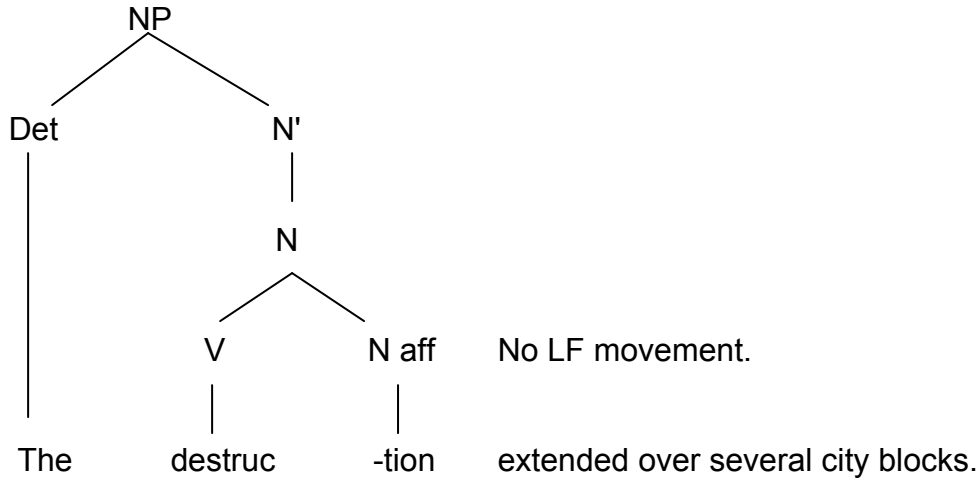
3.2.1 Lebeaux

In this study Lebeaux explored issues connected with the interrelation of verbal nominalizations, argument structure, and derivational morphology.He concentrated on the corresponding verb, and the outcomes that this has on the interpretation of such nominals.

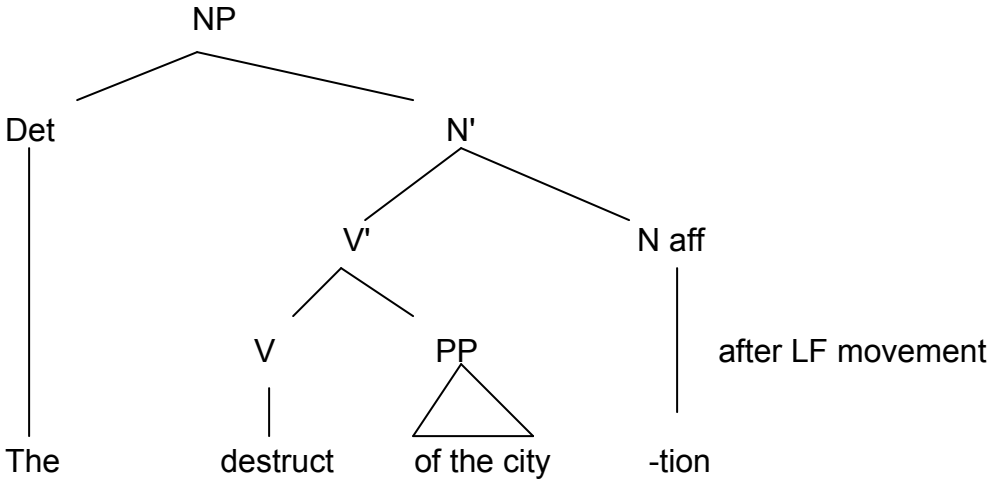
Assuming that there is a difference in the syntactic structure at level of LF of both action and result nominals, Lebeaux states that these nominals may be systematically captured by assuming an application of affix movement at LF. By using the verb ‘destroy’, these may be represented as follows:

(1) a. Nominal type: representation at LF

(a).



(b) Verbal type: representation at LF



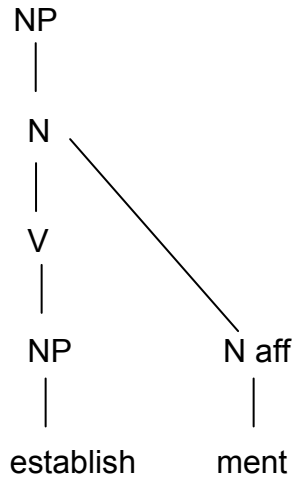
The difference between action and result nominals are captured by supposing that a different category level is being nominalized at LF.

The affix raising is the result of the semantic relation of nominalizations to the meaning of the corresponding verb, and the semantic drift by N-nominals.

Chomsky's (1961) projection principle is cited to explain the behavior of 'establishment' and what it categorizes. Lebeaux argued that the morpheme **-ment** (as a bound morpheme) must be attached to a word, and that a verb subcategorizes not for a

particular projection of N, but simply for a nominal category. This is represented as follows:

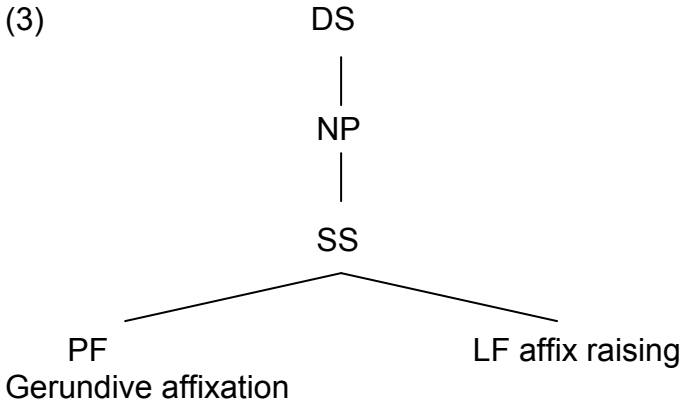
(2)



Chomsky's (1970) case assignment is cited to show the mixed properties of derived nominals. It is argued that C-command requirement by the stem for case assignment to apply (i.e. the verbal stem is marked to assign case, and internal inflectional bracketing counts to prevent C-command), affixation relies on idiosyncratic lexical properties of the stem in cases of derivational morphology.

It was noted that cases of deverbal nouns like 'criticism' or 'destruction' may undergo affix raising at LF. This may be represented as follows:

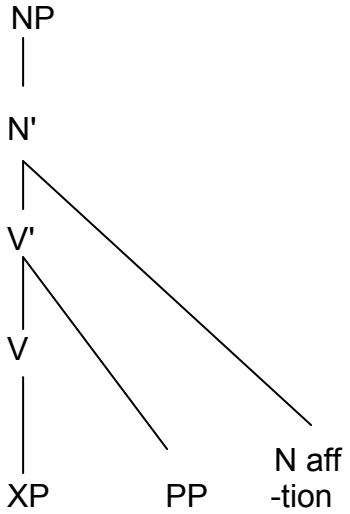
(3)



Concerning affix raising and deployment of arguments, Lebeaux suggested that the process of reading nominals should possess verbal characteristics. That after affix raising the subcategorization properties of the head would have to be satisfied in a way

comparable to that of normal verb. A verb like destroy is cited as an example. This will be represented as follows:

(4)



destruct of the city

The stem destruct- would retain the subcategorization properties of the verb, requiring an object. Then if there is no affix raising, the subcategorization frame of the stem need not be satisfied, and transitivity properties need not be retained.

Lebeaux argued that even though in NPs, all arguments appear to be optional (unlike sentences), the subject / object asymmetry will be a problem (i.e. dropping of the subject and allowing its object to retain the thematic role accorded to it.

The prediction that either the subject position or object position may or may not be lexically realized was found to be false.This was done by applying the Theory of Percolation and the Revised Theta Criterion. In this case Lebeaux proposes clusters of properties associated with V- and N- deverbal nominals:

i. “Nominal” deverbals: (-No process reading, -No affix movement, -Subcategorization frame of the verbal base need to be satisfied).

ii. “Verbal” deverbals: (-Process reading, -affix movement, -subcategorization frame of the stem must be satisfied). Lebeaux (1986:240)

Other sorts of properties cluster appropriately as well:

a. Temporal adjuncts like while-clauses (they have a characteristic of the process of reading of the v-nominal).

b. Purpose clauses like to-clause (which shows a difference between V-(which allows them) and N- (which do not allow them) Nominals)).

Clauses like purpose or temporal adjuncts selects for the category to which they apply (which is v').

Lebeaux maintains that affix raising is obliged to allow for the incorporation of the modifying element into the argument structure and the transitivity properties of the stem are retained.

3.2.2 Binnick (1978)

Binnick (1978) wrote a paper in which he argued against the assumption that syntactic derivation of deverbatives from forms marked for tense is applicable to all languages. His argument is based on three aspects, i.e.

i. - the behavior of Khalkha Mongolian deverbatives and finite verbs,
ii. - the facts of the English perfect are falsified by syntactic derivation,
iii. - Neutralization of underlying tense in Greek deverbatives poses a problem.

His argument is concluded by admitting that deverbatives need not be marked for underlying tense. His main reason is that tense is a main clause phenomenon that involves practical functions of discourse.

A distinction is made between surface verbs and deverbatives as distinct sets of words based on verbal roots in English.

An assumption is made in which it is claimed that English deverbatives are transformationally derived from full clauses.

More proposals were made in which sentences containing infinitives, indirect questions, Nominalizations and other deverbatives were analysed. What was common to those

analysis was the implication that deverbatives are derived from clauses which contain tensed verbs forms or that are similar to them.

This has led to transformational treatments of deverbatives in other languages to follow the treatment of English.

Binnick (1978:290) in his examination of Non-Indo-European grammar, found that it is not satisfying to derive deverbatives from tensed finites as in English. He uses Modern Khalkha Mongolian as an example.

He mentioned four complete sets of verb endings: imperative, gerundial, participial and finite in Khalkha. They are all suffixal but have no morphological relationship to one another, and no forms are shared across the sets. It was discovered that finding a set of semantic categories for these sets is difficult or impossible.

Binnick (1978:293) cites Chomsky's (1965, 1970) English use of 'Aux' as 'Aspect' (i.e. as 'perfect' or 'progressive' or both) to show how syntactic derivation can falsify the facts of English perfect. He argued that the problems encountered by Mongolian would not be answered by the approach done in English as far as underlying tense of deverbatives is concerned.

He showed that though English deverbatives have perfect / imperfect oppositions, no attempt has been made to relate the pairing of the deverbatives to that of the finites. This is problematic and mysterious in Mongolian.

Concerning the problem of Neutralization in classical Greek, seven morphologically marked tenses were discovered in its finite verb. These tenses can contrast in one or both of these ways.

*- the present tense differs from the imperfect only in time, from the perfect only in aspect, from the aorist in both. The aorist is a past tense, but contrast with both the imperfect and pluperfect in aspect.

The Greek Neutralization eradicates time distribution, and also reduces the seven-tense system to three tenses. The syntactic property of the Greek verb also compound the

problem of neutralization. The verb governing a dependent mood take, under certain conditions, either the optative or subjunctive, depending on the tense of the governing verb.

Deverbatives are neither inherently ‘primary’ nor ‘secondary’ and they merely transmit the primacy force of the verb governing them.

Binnick also argued that Neutralization causes loss of primacy. And that means primacy must be defined after Neutralization (i.e. deverbative formation) which is a transformation process.

Amongst all the theories, what is required is the theory in which deverbatives do not derive from underlying tenses, but in which they are systematically linked to finite tense.

Binnick proposes that deverbatives are indeed derived from underlying structures marked for oppositions of ASPECT, but not tense. That proposal led to the independent justification in the sense that tense in all languages must be observed as primarily a category of independent (i.e. topmost, clauses). non-topmost clauses and Non-finite forms are usually neutral as to tense distinctions.

English has special environments in which other phenomena of topmost or main clauses may occur in embedded contexts. The tense oppositions themselves (temporal and attitudinal) are not present in underlying embedded clauses.

3.2.3 Comrie, Thompson (1985)

Comrie and Thompson (1985) wrote about the lexical nominalization in which their concern is based on what forms can be turn into nouns and with what kinds of nouns result from these operations.

This work is organized into four sections. In section 1, the derivational devices that create nouns from lexical verbs and adjectives are discussed. They are categorized as follows:

A. Name of activity or state

1. Action / state nouns.

B. Name of an argument

2. Agentive nouns
3. Instrumental nouns
4. Manner nouns
5. Locative nouns
6. Objective nouns
7. Reason nouns

In section 2, Comrie and Thompson created the devices by which predicates and propositions can be turned into noun phrases, and also the discussion of the types of devices found, he verbal and nominal categories represented in the nominalization, the syntactic collocations of action nominals.

Section 3 discussed the nouns derived from nouns and the whole discussion is summarized in section 4.

1. Process for forming nouns from lexical verbs and adjectives:

Action / state nominalization

The creation of action nouns from action verbs and state nouns from , stative verbs or adjectives depend on suffixes as in English or the reversal of the order of the verb and object in a verb phrase consisting of a transitive verb (English and Gwari, a Kwa language), and the prefix where the stem final vowel changes (Lakhota language).

There is a distinction between nominalizations designating a process and one designating a non-process (Thai-language as an example).

Agentive nominalization

This is a process by which action verbs are turned into nouns meaning ‘one which “verbs” (e.g. in English the suffix –er. derives nouns meaning ‘one which verbs from agentive and non-agentive verbs: sing-singer).

In Tagalog, any verb or adjective may become a noun meaning “one which verbs”. In Modern Hebrew the partial form of the verb serves the function of agentive nominalization.

Kunene (1974) is cited to show how in Zulu, agentive nouns can be formed by prefixing to a verb root the prefix which occurs on all nouns in the human class, Um (u) and replacing the verbal suffix –a by an –i (Comrie and Thompson 1985:353).

Instrumental Nominalization.

This is a morphological process for forming a noun meaning an instrument for “verbing”. The examples are from Wappo, a South American Indian Language: suffixes are added to the verb root, Lakhota, Diola, Western Atlantic Language of the Niger-Congo family and English (in which **–er** is a suffix for agentive and instrumental).

Manner Nominalization

This is the formation of nouns which means ‘way of “verbing”’ from verbs. The examples are from the Turkish, whereby the suffix –(y) performs that function.

The action noun in English, Hebrew and Zulu languages can distinguish between fact / occurrence interpretation and a manner interpretation. In English gerunds, his ‘walking’ can refer either to the fact of or occurrence of ‘his walking’ or to the way he walks.

In Zulu, verbal noun with an infinitival prefix (-hamba-ukuhamba) will have

i. .the fact of walking
ii the way of walking interpretations.

Locative Nominalization

This is the formation of nouns which means ‘a place where “verb”’ happens.Most Bantu Language have this device. They include: Situyana, Sudanese, Austronesian language of West Java.

Objective Nominalization

The formation of nouns designating the result, or the typical or cognate object of an action through the use of an affixes. These include Diola and many Bantu Languages (Zulu, Si-Luyana and Sudanese).

The noun will mean the object that result from an action. In Zulu, the suffix –o will turn a verb into a noun. In Sudanese, -an- will perform the function.

Reason Nominalization

The formation of a noun meaning ‘the reason for “verbing”’ can be created from a verb. This is applicable in Sudanese Language.

Predictability and Productivity

There is a low reflection of predictability in languages regarding noun formation processes. English, Zulu and Hebrew languages reflect this.

According to Comrie and Thompson (1985:357), it is very common to find a deverbal noun taking on special and unpredictable meanings precisely because it is a noun and as susceptible to idiosyncratic semantic change as any other lexical item. The concretization of action nouns is very common in English.

In English the word ‘Proposal’ may refer to either the fact or activity of proposing or to an actual statement or piece of writing in which an act of proposing is conveyed, but ‘refusal’ is much less amenable to a concrete interpretation.

2. Process for forming noun phrases from predicates and propositions

The 'action nominal'

This is a noun phrase which contains, in addition to a noun derived from a verb, one or more reflexes of a proposition or a predicate. Action nominal could also refer to a noun phrase. The derived noun itself in the action nominal is formed by the process which creates action / state nouns from action or stative verbs.

Comrie and Thompson (1985:359), examine the syntactic properties of action nominals in different languages by comparing the action nominal with sentence expressing the same information content with non-derived noun phrases.

Their findings reflect that action nominals have some of the syntactic characteristics of both sentences and non-derived noun phrases.

Verbal and Nominal Categories

Verbal Categories

Action nominals retain verbal categories like tense, aspect, voice, transitivity and negation.

In terms of tense as a verbal category, there is no tense visible in English action nominal. Hence the present and past time reference may be forced depending on the contexts.

There is some neutralization of tense opposition in English with non-finite verbal forms e.g. past / non-past distinctions is combined with the perfect / non-perfect aspectual distinction to give a single opposition, past or perfect versus non-past

Tense distinction may not be made in English with action nominal. In languages like Turkish, tense distinctions are possible like the future / non-future is required.

The aspectual distinction (i.e. perfective versus imperfective) of Russian and Polish is lost with verbal nouns. In both cases non-finite verbal forms shows aspect. The failure to

show aspect in the action nominal is clear loss of a verbal category. This loss is much more widespread in Russian than in Polish.

When coming to voice as a verbal category, Comrie and Thompson (1985:363) uses English, Russian and Maori examples to show how there is no visible morphological distinction corresponding between active and passive verbal forms. There is motivation for saying that in these languages the syntactic active / passive distinction is maintained even though it is not morphologically.

In languages like Turkish, the active / passive distinction with the action nominal is made both syntactically and morphologically.

In terms of transitivity, Comrie and Thompson (1985:366) maintains that there is no distinction between transitive and intransitive members of a verbal pair. These distinctions are visible in Russian and Polish languages but in English there is no distinction and there is no loss of distinction in the action of the nominal.

According to Comrie and Thompson (1985:367), three ways in which an action nominal could be negated are mentioned as follows:

i. in the same way a sentence. (examples in Thai and English languages).
ii. in the same way as nouns (example in English)
iii. in a way different from that found with either nouns or verbs (example Modern Hebrew).

Nominal Categories

The main categories that are emphasized regarding the action nominal are case, number, and definiteness.

Case and definiteness are the defining characteristic of action nominals.

Number as a category, is difficult to signal in action nominals as certain non-derived noun phrases, particularly abstract noun phrases do not show number.

Number is reflected only when it can be understood as signaling ‘occurrences’, or ‘cases’ of verb-ing.

In some languages, the case category is less important. Comrie and Thompson (1985:369) use Turkish to demonstrate the partial nominal character of certain action nominals. In other languages like Modern Slavic, the infinitive has been integrated into the verbal paradigm.

Syntactic Collocation

This issue is concerned with valency and adverbs and adjectives. With regard to valency:

(i) the subject and the object are assimilated to NP syntax in English (i.e. a sentence contains a verb preceded by a subject),

(ii) the subjects and the objects retain sentence syntax (this is visible in languages like Tamil and Avar, Russian and Czech whereby the internal syntax of the actional nominal noun phrase is like that of a sentence).

(iii) subjects and objects only partially assimilate to NP syntax (this is possible in languages like Turkish and classical Arabic, Written Modern Hebrew and Maori whereby in the action nominal noun phrase there is assimilation to noun phrase syntax, but sentence syntax is retained for the expression of the direct object).

(iv) the unexpressed subjects (this feature is possible in all languages with action nominalization).

(v) and the idiosyncrasies in valency of action nominals stem from the discrepancies that appear where the syntax of the action nominal differ from that of both sentence and noun phrase, the behavior of the passive agent between the action nominal and the sentence, and the lack of correspondence between verbal and action nominal object. This is reflected in languages like Italian, German, Modern Welsh, Russian and English.

With regard to adverbs and adjectives:

The difference between verbs and nouns is that verbs are modified by adverbs while nouns are qualified by adjectives.In the action nominals, the difference is with manner adverbial: verbs takes manner adverbials but action nominals require the corresponding adjective.

Nominalization with no lexically derived noun.

This is a process whereby some languages create action/state nouns and a separate process for nominalizing clauses to be used in various nominal contexts. According to Comrie and Thompson (1985:392), there is no ‘evidence favor of viewing its head as a lexical noun.

The verb in this clause lack tense – aspect marking. It has no nominal characteristics. Comrie and Thompson (1985:392) cite Mojave language, a Yuman language of Arizona and California as the best example of a nominalized clause language.

The verb in nominalized clause differ from that of simple sentence in that it appears in a different form, and the tense marker is absent.

The clausal nominalization in Mojave reflects that the subject appears in the accusative case and the verbal category of ‘person’ is marked on the nominalized clause verb. Clausal nominalization in Lakhota is accomplished by suffixing the article of the sentence.

Functions of Nominalizations

The nominalizations occur as subjects or objects of the sentence or as objects of prepositions. It also functions in adverbial clauses together with a subordinating connector. There are also some instances in Luiseno Language where it functions as a relative modifying head noun.

3. Devices for forming nouns from nouns.

Nouns can be formed from abstract nouns (examples are from SI-Luyana and English in which the prefixes and suffixes are the role players) and the concrete nouns (which involve augmentative / pejorative / diminutive, in this regard a new form will denote a larger, smaller or less desirable version of referent of the stem).

Reduplication of stem is another process used to derive forms meaning diminution.

Lastly, Comrie and Thompson (1985:397) summarize their discussion by outlining the following points:

1. Nouns are formed from verbs and adjectives designating either the name of an activity / state or the name of one of the arguments of the verb / adjective.

2. Nouns are derived from other nouns.

3. Processes for forming nouns are not so important because of irregularity and unpredictability.

4. Languages differ as to whether their action nominals more closely resemble noun phrases or sentences in terms of these parameters:

   (a) the number of verbal versus nominal categories shown by the head noun of the action nominal,

   (b) whether the nouns functioning as subject and object of the corresponding sentence are marked as genitive or oblique (i.e. more nominal) or with the case forms they would have in a full sentence (i.e. more verbal),

   (c) Whether the adverb in the corresponding sentence appears as an adverb (i.e. more verbal) or as an adjective (i.e. more nominal)

5. In some languages derived noun phrases cannot be analyzed as having head nouns.

3.2.4 Beard (1998)

Derivational Morphology (word formation) differs from inflectional morphology (which specifies the grammatical functions of words in phrases without altering their meaning) in that it results in the derivation of a new word with new meaning.

1. The derivation – inflection interface (Beard 1998:44-46)

This explains the meeting of derivation and inflection in morphology. Beard (1998:44) cites Chomsky's (1970) proposed Lexicalism to show how words are derived in the lexicon and emerge with an internal structure to which syntax has no access.

Lexicalism provides a set of four diagnostics which distinguish derivation from inflection. That is :

i. the output of inflectional rules cannot be listed lexically, and the output of a derivation rule is a new word which is subject to lexical listing,

ii. if derivational operations map isomorphically onto marking operations, inflectional markers will always occur outside derivational markers,

iii. inflectional cannot change the lexical category of a word, while derivation can,

iv. inflection specifies syntactic relations and is therefore productive, the productivity of derivation is determined by semantic categories. (Beard 1998:44-45).

A broader picture of derivation emerges from the data underlying these diagnostics, even though there are some problems of contradictions involving them.

2. The nature of derivation (Beard 1998:46-50)

Three accounts of derivation are mentioned (i.e. derivation as lexical selection, derivation as morphological operations and derivation as a set of lexical relations)

Lexical entries upon which derivational rules operate comprise three types of features:

- a phonological representation, and
- grammatical representation, and
- semantic representation. (Beard 1998:46)

2.1 Derivation as lexical selection (Beard 1998:47-48)

This view of derivation is dependent upon the existence of word-internal hierarchical structure (i.e. below X_o level). This structure is identical to syntactic structure.

A lexical selection is a process that occurs, 'If words contain their own structure, and if affixes are regular lexical entries like stems, derivation, compounding and regular lexical selection' (Beard 1998:47).

Example like 'bread winner', 'unhealthy' and 'draw bridge' may show how compounds and derivations might share the same structure.

2.2 Derivation as morphological operations. (Beard 1998:48-49)

This is a kind of process morphology in which types of morphology other than external affixation are addressed. Reduplication is regarded as one of the characteristics of both inflectional and derivational morphology.

Reduplication is regarded as copying all or part of the phonological representation of a stem as an affix. It must take place subsequent to lexical selection.

Concerning the issue of external affixation, processual morphology handles infixation with the same sort of rules employed in accounting for external affixation.

According to Beard (1998:49), affixation applies after morpholexical and morphosyntactic rules have provided the base with derivational features. There are no grammatical or semantic operations involved.

2.3 Derivation as lexical relation (Bard 1998:49-50)

This view is supported by Jackendoff (1975) and Bybee (1988).According to Beard (1998:49), Jackendoff argued that all derivates must be listed in the lexicon as they are subject to lexicalization. Derivational rules are regarded as redundancy rules.

According to Beard (1998:50), Bybee argues for a connectionist theory of morphology, inflectional and derivational, based on the theory of parallel distributed processing. In her view, lexical rules have no status independent of the lexical items to which they are applicable, but rules are highly reinforced representational patterns or schema.

A derivation rule on Bybee's account is a relationship which is more strongly represented. Bybee's suggestion has the advantages of conflating derivation and derivational acquisition. But many of the processes vital to her model remain undefined.

3. Derivational heads (Beard 1998:50-53)

Here affixes are regarded as being able to serve as heads as do fully derived words. If they are the results of processes, they cannot be lexical heads.

3.1 Affixes as heads (Beard 1998:51)

According to Beard (1998:51), Williams (1981) advanced the simplest account of affixes as heads of words. He states that the head of a word is its rightmost element.

He cites Disciullo and Williams's (1987) proposal that feature inheritance relativizes the head (i.e. features of categories present in the stem but not in the affix determine the lexical categorization of the final derived word).

Beard (1998:51) maintains that relativizing morphological heads defeats the original purpose of postulating affix heads.

3.2 Head operations (Beard 1998:52-53)

This stems from some instances where morphosemantic mismatch arises. Beard (1998:52) cite Hoeksema's (1985) proposal that every rule of derivation has a correlate that applies specifically to heads.

Head operations are regarded as being able to extend to instances of inflection occurring inside derivation. Head operations remain exceptional so long as affixes may be heads, since semantic evidence indicates that affixes are never themselves affixed. The scope of all derivational functions is the entire word to which it is added, derived or underived.

The stem or the root is regarded as the morphological head a word. The distribution of affixes seem to be determined by language-dependent rules of spell out.

4. Synthetic compounds and derivation (Beard 1998:53-54)

The presence of affixation assist in distinguishing analytic from synthetic compounds. Words like 'draw bridge', 'red head', 'house boat' are refer to as analytic compounds, while 'truck-driver', 'truck-driving', 'red-headed' are synthetic. Little evidence exists that there is a relation between derivation and most analytical compounds. Other analytic compounding appear to be a simple process of combining lexemes.

The head of those compounds composed of constituents belonging to different categories determines the category of the compound.

Synthetic compounds resemble simple derivations in several respects. For example, they share the same derivational categories often marked by the same affixes.

The best assumption is that analytical compounds represent an independent lexical means of derivation.

5. Morphological asymmetry (Beard 1998:54-55)

This is a phenomenon in which the derivational meaning and the affixation marking it are not always isomorphic.

According to (Beard 1998:54), Karcevskij (1929) and Matthews (1972) explored this concept of asymmetry in different ways.

Karcevskij (1929) noted that while several endings mark the genitive in Russian '-i', '-a', '-u', each of these endings also has multiple functions. The ending '-a' marks feminine nominative singular and neuter plural, while ending '-i' marks feminine and masculine nominative plural and genitive, dative and locative singular in declension III.

It is common in Russian for grammatical morphemes to be cofunctional (-i, -a, -u) and multifunctional (-i).

According to Beard (1998:54), Matthews (1972) identified extended and cumulative exponence as morphological asymmetries.

In both Karcevskij and Matthews's study, there is a reflection of phonological analysis of a word corresponding to its semantic analysis.

Beard (1998:55) states that the separation of grammatical and phonological operations allows for a simple account of all morphological asymmetry. He argued that the asymmetry explored by Karcevskij and Matthews is more a morphophonological mismatch between derivation and phonological realization.

He concludes by saying that the ultimate implication of asymmetry is that semantics, derivation, and affixation represent three distinct levels of morphological operations. (Beard 1998:55)

6. Type of derivation (Beard 1998:55-60)

Here particular properties of derivation (i.e. the types of derivation and the type of affixation marking them) are discussed.

It is said that words may be misanalyzed when a phonological sequence identical with that of an affix is misperceived as that affix. This may result in the back-formation. Several facts obstruct the conclusion that back formation is a derivational process.

i. in order to use back-formed words, you must be familiar with them.

ii. positions for back derivates are not found in lexical paradigms.

Back formed words create a new base, expanding the underived lexical stock in a way that regular derivations do not.

6.1 Lexical stock expansion (Beard 1998:56-57)

A number of processes assist in expanding the underived lexical stock without changing the base of the word. They are discussed under the concept of back formation (which generates a base which the lexicon lacks). Clipping produces a redundant base, but a new one all the same. The input and output of clipping rules are semantically identical, and both remain active in the lexicon. It usually reduces a polysyllabic word to a monosyllabic one e.g. ‘telephone’ = ‘phone’. In the case of blends, different parts of words are amalgamated to form a new word e.g. words like ’smog’, ‘motel’ and ‘tangelo’ by logical process rather than grammatical process.

Acronymizations are blends based on Orthography. Here the words have been converted from phrases to the initial letters of the words in those phrases, which are not part of the grammar e.g. AIDS (Acquired Immune Deficiency Syndrome) caser (light amplification by stimulated Emmision of Rader), Scuba etc. Analogical formulation differ from regular derivations in that they require prosodic identity e.g. ‘workaholic’, ‘chocaholic’ and ‘cheeseburger’ etc. Genuine suffixes like ‘-ing’ may be added to stems of any length or prosodic structure.

Other lexical stock expansion processes may involve:

- borrowing (troika, détente, thug)
- commonization (quisling / asprin)
- semantic narrowing (percolator, escalator)

- loan translation (German Einflu ß influence)
- folk etymology (craw [1] fish from old french crevise)

All these processes are grammatically irregular and extragrammatical.

6.2 Lexical derivation (Beard 1998:57-60)

It consists of four distinct types of regular grammatical derivation (i.e. feature derivation, functional derivation, transposition, and expressive derivation).

a. Featural derivation:

It operates on value of inherent features, it does not change category of the underlying base. A natural gender is an example, which falls under the concept of markedness. Unmarked masculine nouns may refer to males or females [+ feminine, + masculine]. A distinction is made between pure masculine and default masculine (like ‘student’)

Default masculine differs from pure masculine in that they are susceptible to feminization. Default masculine noun may be converted into a purely feminine one by toggling of the masculine feature from positive to negative: that is: [+feminine, + masculine] – [+ feminine, - masculine].

b. Functional derivation:

This type of derivation is based on case function: For an example:

- (accusative of) object.
- (locative of) place.
- (genitive of) possession.
- material
- (oblative of) purpose
- (instrument of) means.

Languages like Serbian, Polish, Latin, Turkish and Basque are cited as displaying such derivations, even at some point others are not displayed. Functional derivations involve

far more functions than the argument functions found in the base, yet few if any productive derivational functions fall outside those found in the inflectional system.

c. Transposition

This is another type of derivation which reflects a simple change of category without any functional change as shown below:

(I) a. Walk : walk-in (V →N)
b. New : New-ness (A →N)
c. budget : budget-ary (N →A)

It introduces no structure, but simply shifts a stem from one category to another.

d. Expressive derivation

Expressive derivation does not change the referential scope of its input and also it does not change the lexical category of the base. It may be recursive, applying to its own output. It also cannot be a form of transposition.

7. Realization and productivity (Beard 2998:60-64)

Bound phonological realization of derivational and inflectional morphology is provided by a single component 'INFLECTION'.

There are two specific types of marking ,'subtraction' and metathesis' that are represented in the inflection and they do not mark derivation. It is discovered that metathesis for the most part is an allomorphic change effected by affixation.

7.1 Discontinuous Morphemes (Beard 1998:61)

These are morphemes which may be loosened or removed from their base. Practical examples are the English proverbs that correlate. The verbs with proverbs are considered lexical derivates. These proverbs are often loosely attached to their stem.

One possible account of these morphemes is that they are ‘clitics, defined in terms of attachment to either the phrasal head or periphery’ (Beard 1998:61). Their position is morphologically predictable and requires no syntactic projection as do lexemes and free morphemes.

7.2 Other types of stems modification (Beard 1998:62-63)

They involve the following:

a. Affixation (i.e. prefixation, suffixation and infixation)

It is the most productive means of marking derivation. Affixation may be defined in the same terms as cliticization. Affixation may attach only to the inside or outside of the initial or final phoneme or syllable, or to either side of the head.

b. Apophony (Stem mutation, revoweling)

It is well attested in semitic languages (i.e. Hebrew, Arabic). Lexical items in these languages comprise consonants only, and vowels are used to mark morphological functions. Apophony like subtraction and metathesis, raises question of the limits on modification of the phonological representation of the base.

c. Conversion (transposing a lexeme from one category to another without affixation)

There is no separate operation of conversion, as the same semantic relations between conversional pairs as between derivational pairs are found.

d. Paradigmatic derivation (shifting the base from one nominal declension class to another with or without a derivational marker).

The most practical example is taken from Swahili in which diminutives are formed by shifting nouns to noun class 3. Feminine agentives in Russian are usually derived from masculine of declension I (= Noun class 1) by adding a declension II (= Noun class 2) suffix.

e. Prosodic Modification (shifting the accent of a word or modifying the intonation)

This may be a variant of apophony. This process is common in English. In English it is productive with verbs prefixed by ‘re-’: ‘rewrite’, remark: remake. The morpheme seems to be the process of shifting the accent from one syllable to another.

f. Reduplication (the full or partial reduplication of part of the stem in a derivation)

It is mostly common in Indonesian adverbs forms. Reduplication may be combined with various types of affixation.

7.2 Productivity and allomorphic variation (Beard 1998:63-64)

According to Beard (1998:63), It is noted that not all the modes of stem modification studied are equally productive. He claimed that some means of morphological marking are more productive than others.

It is stated that transparent (i.e. they do not involve allomorphy) affixes (i.e. English suffixes ‘-ing’ and ‘-ness’) tend to be more productive and more predictable than those which do induce allomorphy (e.g. ‘-ion’ and ‘-ity’).

If nominalization changes or adds semantic material to the underlying base, it should add phonological material to the stem iconically and transparently.

English derivates like ‘bak-er’, ‘resid-ent’, are likely to be productive, than unmarked derivates like ‘cook’, ‘guide’. Opaque affixes should be less productive inter- and intralinguistically.

Natural morphology offers a means of uniting word syntax and processual morphology. Processual morphology has no inherent account of why transparent, symmetrical markers seem to be more productive than asymmetrical ones.

3.2.5 Hazout (1994)

Hazout (1994) wrote about the analysis of verbo-nominal constructions in Hebrew and Arabic. These are constructions that show a mixture of verbal and nominal properties. This analysis is an attempt to add a new element to the theoretical study of verb-nominal construction (namely, the thematical function of nominalizing morphemes). The three types of nominal constructions that occur in Hebrew and Arabic are the main concern of this paper.

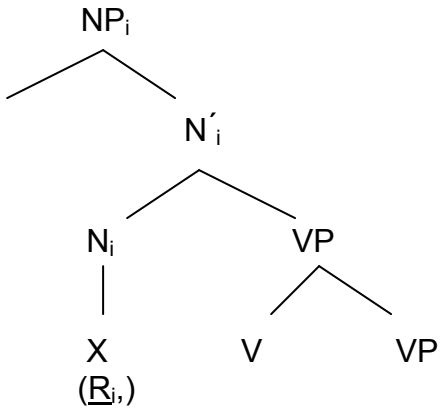
The thematic properties of nominalizers

A nominalizer is a nominal affix which must be affixed to a verb to produce a noun. This is a problem in Hebrew and Arabic as the affixation of a nominalizing morpheme to a verb does not always produce the same morphological output.

Hazout (1994:10) poses two questions that need a special attention regarding the argument structure in nominalizations. They are:

-whether the argument structure of x can contain only an external (R) argument or whether it may have additional internal arguments. The second question would be ‘what kind of internal theta role a nominalizer might have and what function it would have in a structure such as (1) below:

(1)



An argument from agent nominalizations

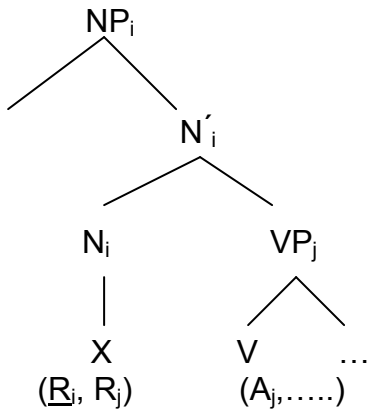
According to Hazout (1994:10), there is a motivation of the assumption that nominalizing morphemes may have an internal argument. The head noun of agent nominalizations have all the syntactic properties common to nouns (i.e. the ability of being modified by an adjective).

Agent nominalizations also manifest verbal properties (i.e. ability of being modified by adverbs and provide syntactical environment for assignment of accusative case).

Concerning the issue of subject, Hazout (1994:12) adopted the formulation proposed in Williams (1982) known as the NP_i/NP_i constraint (i.e no NP may be coidexed with an NP it contains).

He proposed that the external theta role of VP in a configuration like (1) is satisfied by an internal argument in the argument structure of the nominalizer. This can be represented as follows in (2):

(2).



The nominalizing morpheme in (2) has an internal R-role which is assigned and satisfies the external theta role of VP. The reference of the matrix NP and that of the external theta role of the underlying verb is identical.

The variety of nominalizers.

The two dimensions along which nominalizers may vary are:

(i) Nominalizers differ in the number of argument they may have (they must have at least an external R-role as a minimal number of argument, and the maximal number of arguments depends on the views on the relation between a nominalizer and its VP complement, the nominalizer may have either one or may have two R-roles, one of which is internal ($\underline{R}_i$, R_j);

(ii) They vary according to whether these arguments are associated with identical indices or not (if a nominalizer has two R-roles then their indices are either identical or they are not). (Hazout 1994:14-16).

Three types of nominalizers are mentioned as:

(3) a. ($\underline{R}_i$,)
b. ($\underline{R}_i$, R_i)
c. ($\underline{R}_i$, R_j)
(Hazout 1994:16).

Nominal gerunds

As they only appear in Hebrew, their properties are presented as follows:

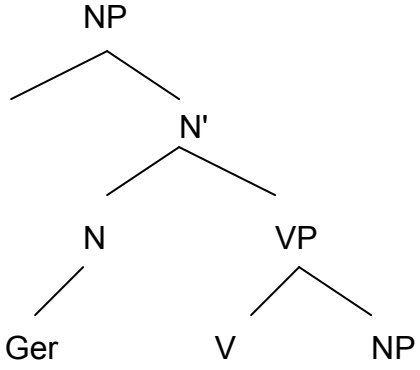
- they may occur as subjects, direct objects and indirect objects;
- they may occur as member of a bound genitive construction;
- their internal structure shows typical nominal properties;
- the subject of the construction can be governed by case marker;
- its head may be modified by an adjective;
- bound and double genitive can be realized in them (free genitive is impossible);
- concerning verbal properties of them, the heads of them may not appear on its own (a subject must be there to accompany it);
- they do not enjoy the freedom of distribution typical of most nouns;
- the corresponding deverbal nouns may occur unaccompanied by a subject;

- adverbs are also admissible in them (this also includes the appearance of both adjectives and adverbs)

(Hazout 1994:17-20)

When coming to the analysis of nominal gerunds, an assumption of a nominalization type underlying configuration (based on the verbo-nominals properties of the nominal gerund) is proposed and can be represented as follows:

(4)



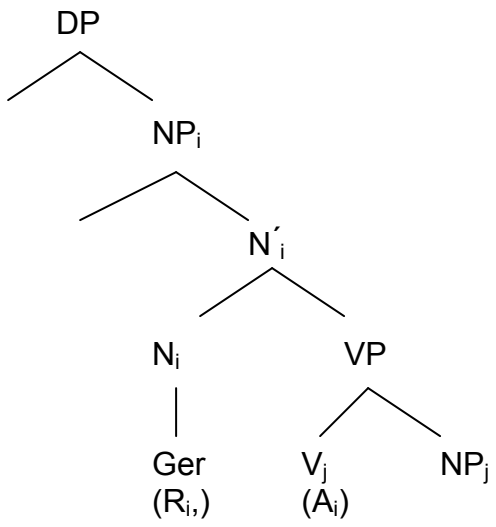
According to Hazout (1994:21), the bound morpheme Ger (is the head of the above construction in (4) subcategorizing for VP. The lexical entry of Ger contains the following information:

(5) a. Argument structure of Ger: ($\underline{R}_i$,)

b. Subcategorization frame of Ger: [__VP]

In the analysis of the nominal gerund, its thematic structure and the restriction on the class of verbs which may occur in it are considered. Hazout (1994:21) explained this by providing the following configuration:

(6)



The external theta role of Ger is vertically assigned to the dominating N' and then to NP. An NP governed by the verb may be assigned the internal theta role of that verb. If the verb heading the VP in (6) had an external theta role, that theta role would be vertically assigned to VP. The external R-role of Ger cannot satisfy the external theta role of VP. This configuration has only an internal theta role and no external theta role.

According to Hazout (1994:22), in terms of the analysis of gerund nominals, they are explained on the basis of the categorial identity of Ger (as the head of NP). He states that an NP moved to the specifier position may be in the bound genitive construction with the head.

Agent Nominalizations

Additional evidence is presented regarding the verbo-nominal nature of the construction. The assumptions about the argument structure pf the imder;uomg mp,oma;ozer pf am agemt mpp,oma;ozatopm make possible an explanation of various facts about this construction.

Hazout (1994:25-26), discusses ‘the participial noun forms’ that preserve some of the verbal force of the related verbs, in explaining the missing nominal forms scenario.

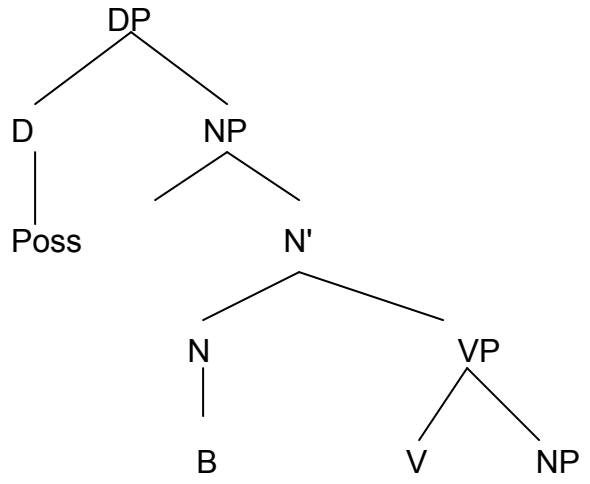
He maintained that any attempt to attribute a certain verbal force to the transitive agent nouns may leave some questions unanswered. He claimed that syntactic nominalization

processes applying to an underlying configuration such as the one suggested in (3) is expected to be general.

Adverbial modification is another piece of evidence in agent nominalization constructions. Hazout concluded that the head of construction(i.e. accusative case assignment in (1) above) is the product of a syntactic derivation and assumes as underlying structure involving a verb and a VP.

When coming to the analysis of agent nominalization, the underlying structure of it can be represented as follows:

(7)



Its lexical entry is like this:

(8) a. Argument structure of B: ($\underline{R}_i$, R_i)

b. Subcategorization frame of B: [___VP]

According to Hazout (1994:29), this analysis implies that the process involved is general and should apply to any verb.

In Hebrew, participial forms can occur as head in agent nominalization constructions. Other type of genitive construal like double genitives, bound genitives and free genitives (which are clearly impossible in Hebrew) are analysed.

The argument structure of –B, makes it possible to explain other syntactic properties of the construction. It also supplies an account for theta-theoretic and semantic properties of agent nominalizations.

Action Nominalizations

Concerning this type of nominalization, Hazout (1994:32-33), discusses the following points:

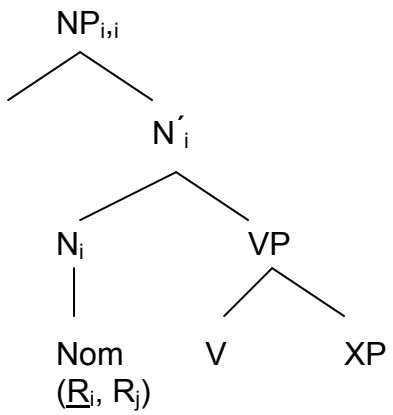
- it is the best known construction in Hebrew and Arabic;
- like the other constructions, they are NPs and manifest in their internal syntax typical nominal properties;
- they display nominal properties such as:
    - genitive construal
    - adjectival modification
    - adverbs
    - accusative case assignment
- accusative assignment is possible in the varient of action nominalization which lacks an overt subject.
- accusative case assignment in the subjectless varient arises in cases where the underlying verb has more than one object. In such cases first object will be deprived of the accusative case.

In the structure of action nominalizations, the head of action nominalizations is designated as Nom. The lexical properties will be represented as follows:

(9) a. Argument structure of Nom ($\underline{R}_i$, R_j)
b. Subcategorization frame of Nom: (___VP)

These properties will occur in the following configuration:

(10)



According to Hazout (1994:33), Nom has an internal R-role. It can satisfy the external theta role of VP. Since the indices associated with R-roles of Nom are not identical, the indices associated with NP_1, and VP are also not identical.

Hazout presented four arguments showing that subjectless variant of action nominalization does not involve passivization. The four arguments are based on the data from Hebrew and Arabic:

i. verbs which do not passivize in Hebrew (these are verbs that figure as transitive verbs in active sentences, but cannot passivise);

ii. verbs which do passivize in Hebrew (In Hebrew, verbs which take a prepositional complement is able to passivize, the preposition is dropped and the object becomes the derived subject);

iii. anaphors in Hebrew (a passivization analysis of subjectless action nominalizations show some problems with structures involving anaphors. A thoery of Binding is adopted to answer some questions);

iv. control structures in Arabic (the control of subjectless action nominalization in Arabic raises a problem for a passivization analysis). (Hazout (1994:36-40).

3.2.6 Hazout (1995)

Hazout (1995) wrote a paper in which he provided an explanation for the mixed verbo-nominal properties of action nominalization construction in Hebrew and Arabic. That

explanation is achieved by suggesting an underlying representation in which a VP figures as the complement of the abstract nominal head Nom.

That suggestion (of such an underlying representation) also makes it possible to explain other configurationally conditioned phenomena, such as distribution of adverbs and adjectives. A central assumption concerns the thematic properties, the argument structure of the nominalizer and the interaction with the overall thematic structure of action nominalization**s**. It is only within a non-lexicalist approach that elements such as Nom may be suggested.

The action nominalization constructions are referred to as verbo-nominal because they are typically headed by a noun that is morphologically related to a certain verb. Like the verb, the head of an action nominalization may be accompanied by a direct object marked with accusative case.

Verbo-nomimal properties of action nominalizations are presented as follows:

- they can appear as subjects and objects of prepositions (case is assigned in those positions);
- In Hebrew, the head and the subject may appear in the free and double genitive constructions,
- Free and double genitive constructions allow for the occurrence of an adjective modifying the head noun;
- the adjective intervenes between head and its subject;
- action nominalizations with nominal heads that are related to double-object verbs takes the same number of arguments; and
- adverb's occurrence syntactically conditioned.

(Hazout 1995:357-360)

Concerning the distribution of adverbs in action nominalizations, Hazout points out some concerns regarding the admissibility and distribution of adverbs:

- adverbs of manner and time occur freely in these constructions (but not sentential adverbs);
- adverb distribution in Hebrew action nominalization is syntactically determined;
- adverbs cannot follow head nouns in free and double genitives;
- adjectives are bad in final position as compared to adverbs,
- adverbs and adjectives are in complementary distribution concerning the final position and the position immediately following the head noun;
- switching order between adjectives and adverbs is wrong; and
- a distinction between a verbal (allows adverbs occurrence) and a nominal domain (allows occurrence of adjectives and excludes adverbs) is made.

Hazout (1995:361-365)

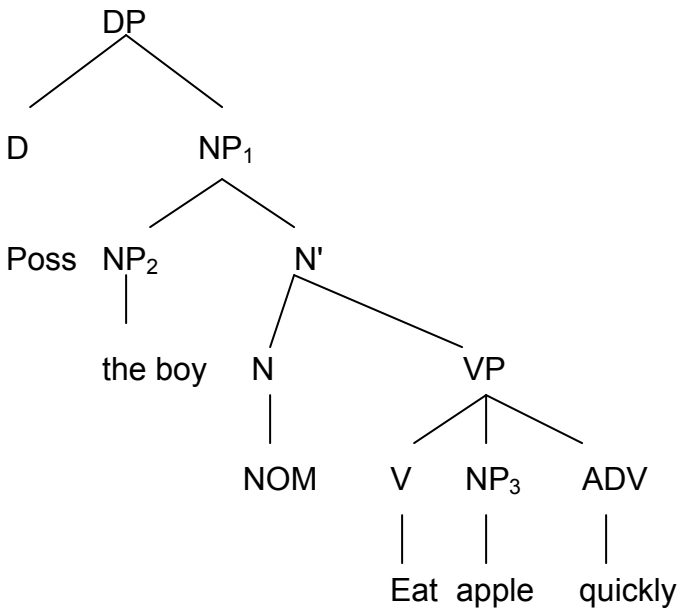
The structure of action nominalizations

The bound genitive variants, free and double genitive variants and passivization in action nominalizations are treated in this section.

Bound genitive variants are formed when the head noun combines with the subject. These cases are common in both Hebrew and Arabic.

The structural derivation with the cases involving an overt subject is presented as follows:

(1)

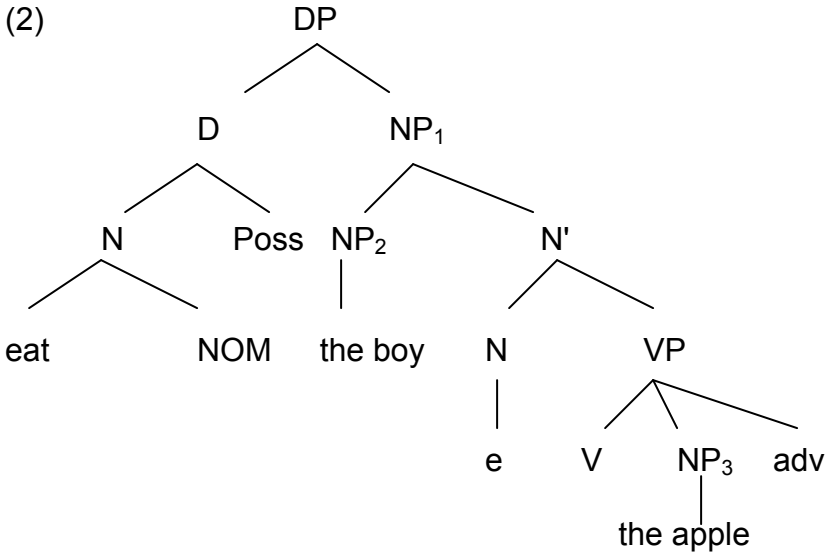


From the above configuration in (1), Hazout states that:

- NOM subcategorizes for a VP headed by a verb;
- NP is base generated in the specifier position of NP;
- Deverbal form of the head noun is derived by head movement of the underlying verb to NOM. (Hazout 1995:366)

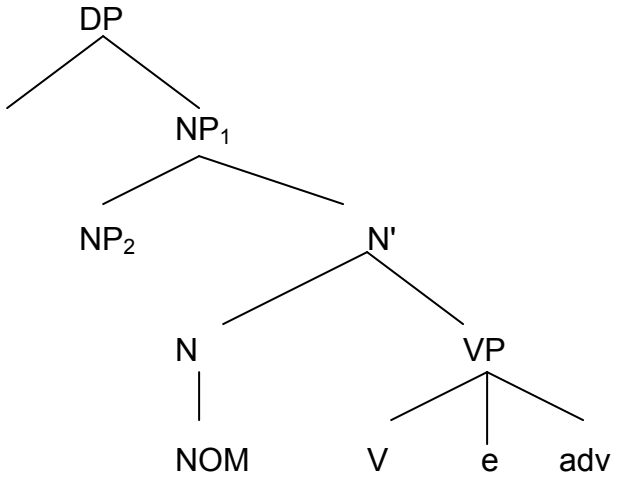
Two main characteristics of action nominalizations are accounted for in (2) below (i.e. accusative case assignment and adverbs as licensed sub constituents of VP).

(2)



The derivation of the subjectless variant is representd as follows:

(3)



Hazout states the following concerning the above structure in (3):

- NOM as a central role player, is a morphological nominalizer;
- NOM is suggested to be an element with an argument structure;

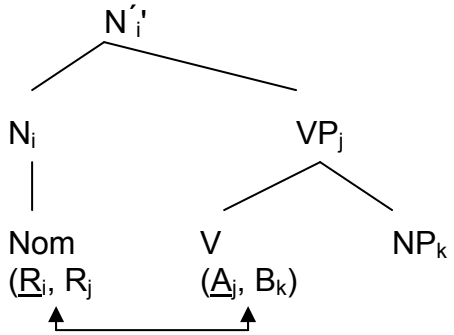
Its lexical information can be represented as follows:

(4) a. Argument structure of NOM: ($\underline{R}_i$, R_j)

b. Subcategorization frame of NOM: [___VP]

The theta structure of an action nominalization construction looks like this:

(5)



Concerning the above structure in (5), Hazout points out the following:

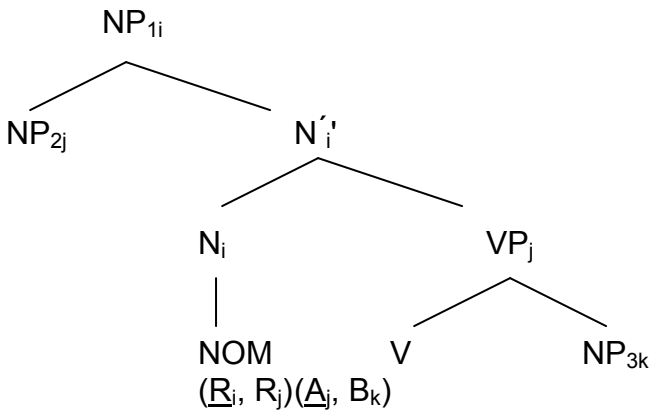
- external theta role of the verb is first assigned vertically to the VP,
- then it is assigned to the internal R-role of NOM
- NOM is in the position of assignment of the external theta-role of VP;
- The external theta-role of VP is satisfied; and
- The external theta-role of VP is dependent on R for its referential content. (Hazout 1995:371)

He presents the following points to account for lack of accusative case in the subjectless varients:

- case assignment is only licensed in the environment of certain functional elements INFL, NOM etc]
- [-Nominal] elements license accusative case assignment;
- In active variant, the NOM is not nominal;

The next variant is its thematic structure which is illustrated in (6) below:

(6)



From the above structure, Hazout points out the following:

- thematic intergration of NP_2 is achieved;
- external R-role is coindexed with the internal thematic index of the head of embedded NP;
- internal argument is coindexed with the internal theta role of VP;
- the subject NP is assigned a theta role;
- binding relationships between NP_2 and NP_3 in (6) are accounted for

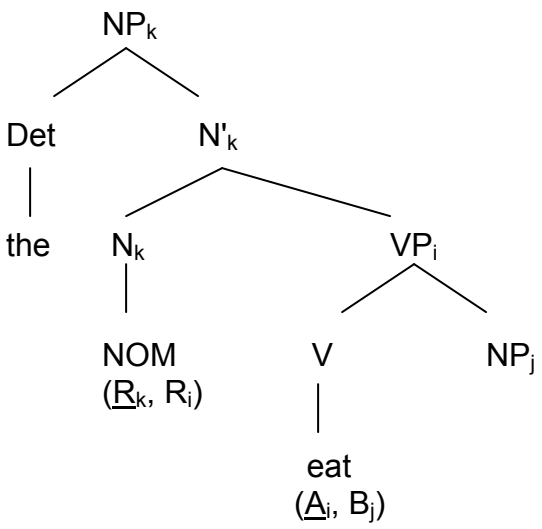
Concerning the free and double genitive variants, Hazout maintains that these cases are particular to Hebrew Sel-phrases and are taken as adjuncts. He cites Lebeaux's (1988) approach to adjuncts.

The free genitive variant can be represented from this sentence below:

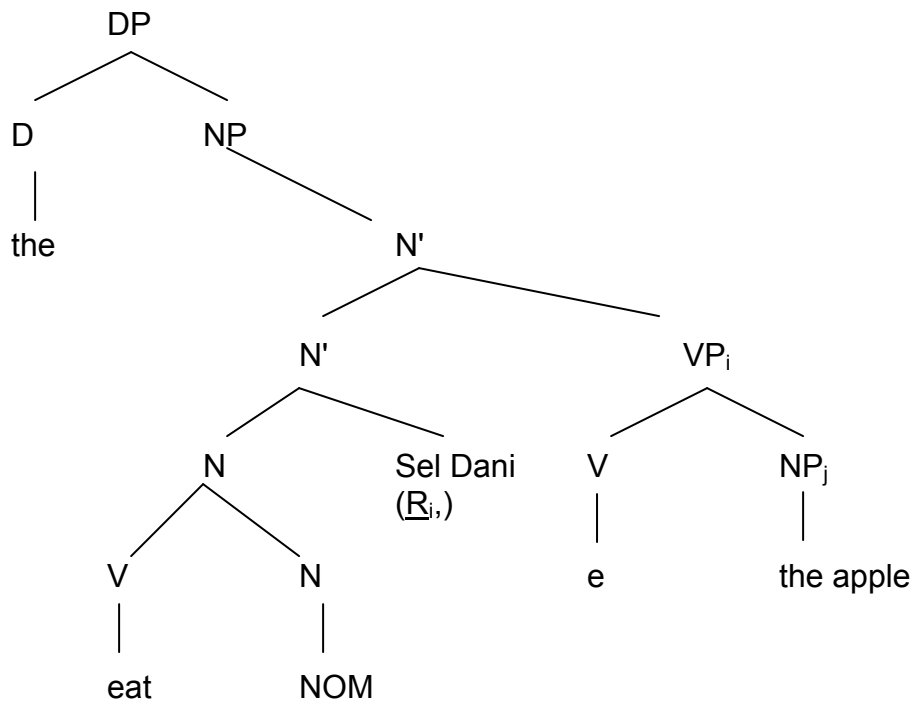
(7) the eating Sel Dan Acc the apple
Dan's eating the apple.
(translated from Hebrew sentence)

He presented two relevant derivational stages of (7) as follows in (8a) and (8b):

(8a). **NP-structure**



(8b). **S-structure**

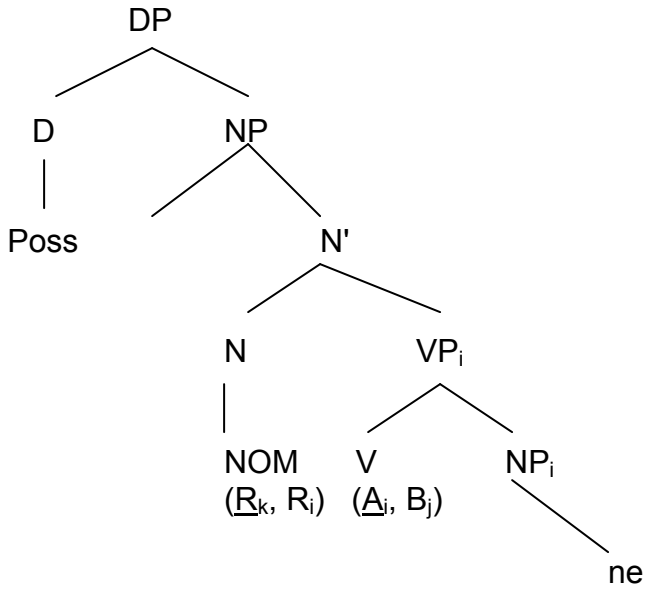


The following are established from both 8(a) and 8(b):

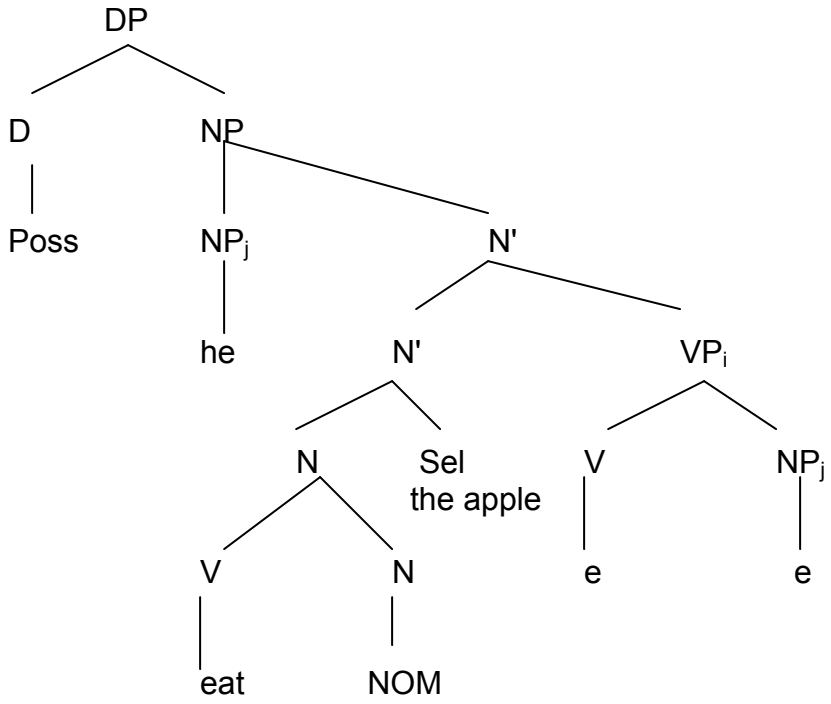
- in 8(a) thematic relations are established;
- in 8(b) there is a head movement of V to NOM and the adjunction of a Sel-phrase which is the resulting configuration.

The double genitive variant can be represented as follows in 9(a) and 9(b):

9(a). **NP-structure**



9(b) **S-structure**



Concerning passivization in action nominalizations, Hazout presented four arguments (three from Hebrew and one from Arabic) that shows that subjectless variant of action nominalization does not involve passivization. They are:

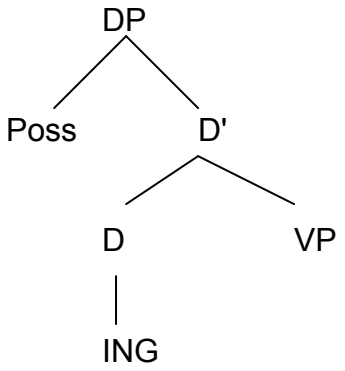
- verbs which do not passivize (their inability to passivize stems from an arbitrary lexical property which is not limited to morphology of verbs);
- verbs which do passivize (these are verbs which take a prepositional complement, the preposition is dropped and then its object becomes the derived subject)
- Anaphor (a binding theory approach is proposed to challenge a problem with structures involving anaphors)
- control structures in Arabic (this stems from the embedded subjectless action nominalization which is not the output of that process)

(Hazout 1995:380-384)

Hazout's present a brief review of previous work as follws:

- all major analysis of the Poss-ING gerund share the assumption of an underlying verb and VP;
- Chomsky (1981) and Schachter's (1976) proposal of genitive case ssignment of the NP;
- Horn's (1975) affix hoping to-ING;
- Jackendoff's (1977) intermediate position between Chomsky's and Horn's positions assumes the PS-rule for gerundive nominals;
- Jackendoff's analysis,-ING is attached to the verb by Affix-Hoppng;
- Abney (1986, 1987) uses DP hypothesis of NP structure to suggest the structure for Poss-ING gerunds: the structure is presented as follows:

(10)



(Hazout 1995:384-386)

The issue of Lexicalism

Hazout (1995:387-399) presented evidence for a non-lexicalist approach to Hebrew and Arabic action nominalizations. His argument is based on the interpretation of action nominalization and Arabic causatives and the syntax of action nominalizations.

Concerning the interpretation of action nominalizations, there is an observation of a correlation between case marking and interpretation in action nominalization. A non-lexicalist analysis of action nominalizations is preferred.

In the Arabic causatives and the syntax of action nominalizations, the structure of the argument is presented as follows:

- an alternation between two types of causative constructions (i.e. double causative and dative causative)

The argument is that ceratin facts necessitate an analysis of the double accusative variant (i.e. non-lexicalist analysis)

The second type (the causative verb) is base generated in its complex morphological form.

Arabic action nominalizations show the same alternation between accusative and the dative variant. The two variants are schematically represented as:

(ii) a. Double Accusative: NP_1 V NP_2 NP_3

b. Dative Causative: NP_1 V NP_3 P NP_2

The first set of facts in the argument is based on anaphoric relationship:

- NP_1 can be antecedent of NP_2;
- NP_2 may serve as an antecedent of NP_3.

The second set of facts concerns possibilities of clitization in the causative variants:

- in a double accusative, if NP_2 is a pronoun, then it can be cliticized onto the verb (Not possible for NP_3)

In the corresponding dative, it is possible for NP_3 to be cliticized on the verb.
The third set of facts is related to issue of interpretations,

- Double accusative sentences with a modifying adverb are ambiguous between two possible construals of the adverb.

An analysis of the double accusative variant shows that it relies crucially on the assumption of a double-VP configuration.

Regarding the analysis of dative variant, it can be concluded that the main verb is the output of lexical process whereas in the double accusative variant, the causative verb is the output of a syntactic process.

The option of a syntactic derivation for action nominalization must be open in principle (Hazout 1995:402).

3.2.7 Beard (1995)

Beard presents a theory of morphology that distinguishes lexemes from morphemes. In this morphorlogy, morphemes and all morphological operations are said to be outside the lexicon.

Lexemes are signs which appear in open classes. They are nouns, verbs and adjectives and are found in the lexicon. They have a phonological, grammatical and semantical representation.

Bound grammatical morpheme changes the phonological form of lexemes as they are morphological spelling operations (e.g. [-rek-] is a lexeme which is a verb). A bound grammatical morpheme may be added to this verb e.g. a perfect tense morpheme [-ile]. This bound morpheme will change the phonological form of the lexeme: it is now [-rek-ile].

In bound morphology, two independent processes need to be mentioned (i.e. derivation and morphological spelling).

1. Derivation: Two types of derivation are distinguished:
   a. lexical derivation (which is found in the lexicon); and
   b. inflectional derivation (which involves various functional categories in syntax).

2. Morphological spelling: It modifies the phonological representation of the lexeme. A lexeme such as ‘sebets-‘ which is a verb may now change into a noun in the morphological spelling component. In this theory of morphology the following aspects must be carefully distinguished:

The only minimal grammatical elements of language are lexemes which consist of a phonological (P), grammatical (g) and semantic (r) representations.

A lexeme allows only four types of operations:

a. a lexical operation which modifies **g** in the lexicon.
b. an inflectional operation which modifies **g** in the syntax.
c. a spelling operation which modifies **p** (a phonological representation) of any lexeme.
d. a semantic operation is a modification of **r**.

A lexical entry for a verb such as ‘kena’ may then look as follows:

$$g = \begin{bmatrix} + \text{ verb} \\ \text{Theme/Agent\_Location} \end{bmatrix}$$

$$\updownarrow$$

$$p = \text{/ken/}$$

$$\updownarrow$$

$$r = [\text{GO (X) TO (Y) IN (Z)}]$$

The stem or root [-ken-] which is p above, is a purely phonological phenomenon. Morphological spelling operations upon it are firstly phonological. Spelling operations never modify grammatical (g) or semantic (r) representations.

Derivational rules operate on grammatical categories (g), and have no access to phonology and they cannot effect phonological changes. [G] includes morpholexical categories of the lexicon such as [+ verb] or [+ noun] and the morphosyntactic inflectional categories of syntax such as [+present], [+indicative].

Spelling operations are responsible for bound mprphemes such as affixes. All morphological means of marking grammatical categories such as bound spelling operations are handled by an autonomous morphological component. This component spells out the phonological modifications of the stem.

Thus all open classes are lexical and the lexicon contains only open classes. All closed classes are grammatical and the grammar contains only closed classes.

The derivational and spelling operations are organized in the following way:

Lexeme	Operations on lexemes	Responsible grammatical component
R	Semantic operations	Semantics
↕		
G	Lexical derivation Inflectional derivation	Lexicon syntax
↕		
P	Spelling operations Phonological operations	Morphology Phonology

The representation of a lexeme is abbreviated as [p↔g↔r].

INFLECTIONAL DERIVATION

NOMINAL INFLECTIONAL CATEGORIES

There are four nominal inflectional categories: case, noun class or gender, agreement and number. Of these four only case, noun class and agreement are nominal inflectional categories in Sesotho.

CASE

Case is a nominal category which is controlled by syntax. Case expresses relations between nouns, and nouns and verbs in a phrase. Case is not formally marked in the African language [i.e. there is no overt form or morpheme which indicate a specific case].

The following cases can be recognized in Sesotho:

[Thabo] o-ngoletse [ntate] [lengolo] ka [pene] ya [Tselane] [kamoreng].

There are six nouns in the sentence above and each one of these nouns must be assigned a case.

- [Thabo] appears in the nominative case to indicate its syntactic role as subject.

- [Lengolo] is in the accusative case to indicate that it plays the role of direct object.
- [Ntate] is in the dative case because it is the indirect object which is the recipient of lengolo.
- [Pene] is in the instrumental case because it represents the means of writing. It is assigned this case through the preposition ‘ka’.
- [Tselane] is in the genitive case because he is the possessor of the pen. This case is assigned through the possessive **a** in **ya** above.
- [Kamore] is assigned the locative case because it represents the place at which the letter was written. It is assigned this case through the locative morpheme [-eng].

AGREEMENT

In the African Languages Agreement is determined by noun class and it can be found as a category in the following instances:

- **Subjectival agreement (AgrS):**
  [Bashemane] ba- fihlile.
  (Boys they-came)
- **Objectival agreement (AgrO)**
  Ke-a-ba-bona [basadi]
  (I see-them women)
- **Prepositional pronoun**
  Ke-tla-tsamaya ka wona [motokara]
  (I will go with it the car).
- **Nominal modifiers**

All nominal modifiers in the African languages have some form of agreement with their head nouns.

- **Demonstratives:**

[ba-tho bana] (these people)

[se-fate sẽna] (this tree)

- **Adjectives**

[ba-nna [ba [ba-lelele]] (tall men)

[se-fate [sẽ [se-holo]] (big tree)

NUMBER

Number is not a nominal inflectional category in the African languages.

Verbs may reflect number in constructions with a phonologically null pronominal:

In the African languages number can be discerned in the following instances as an inflectional category of the verb:

In Agreement of the first and second person with empty pro:

[pro] ke-a-o-batla [pro]
'I want you'

[pro] re-a-le-batla [pro]
'We want you'

In imperative plurals

[pro] tsamaya-ng
'Go (you pural)'

In Hortatives with singular, plural and dual in Sesotho:

Singulr: Ha-ke-mamele!
Dual: Ha-ra-mamele!
Plural: Ha-re-mameleng!

NOUN CLASS

Nouns may be classified into various subcategories. One of the most distinguishing features for a classification into subcategories is the feature gender. This feature may appear in the grammatical category of Natural Gender, i.e. Nouns which refers to features such as feminine and masculine which include just those nouns refering to sexed beings.

Grammatical gender must be distinguished from natural gender. Grammatical gender appears in the African languages and it is usually referred to as noun class or inflectional class.

Nouns may be recognized morphologically (i.e. there are certain morphemes which may occur with nouns. All nouns in the African languages are specified for a certain noun class. A neutral numerical system 1,2,3 etc. will distinguish the functions or classes of this lexical category. Then each such a noun will then be identified with a morpheme.

Lexical derivation

Four different types of lexical derivations are distinguished as:

- feature value switches
- expressive derivations
- transposition, and
- functional L-derivations

Feature value switches (Beard 1995:155-159)

A description of natural language is a simple SWITCH, or TOGGLE, which resets the ± or other values of grammatical feature. It operates both in syntax and lexicon, determining the values on features of Inflectional categories and the values of inherent lexical features.

Feature value switches and gender

This feature is for those languages which maintains natural gender. The rule will derive feminine correlating from unmarked masculine noun. The marking allows derivational rules to distinguish those masculine nouns which may be feminized from those which may not. Unmarked masculines refers to both females and males. The rule of feminization to all gendered language is presented as:

[+ Feminine, + Masculine] → [_ Feminine, - Masculine]

Feature value switches and number

The marking system postulated for Gender projects four similar functions for the two number properties as:

(1) a. [+ Plural, + Singular]
b. [+Plural, -Singular]
c. [- Plural, +Singular]
d. [- Plural, -Singular]

The [+Plural, -Singular] and [+Singular, - Plural] combinations predict classes of nouns, plural and singular count nouns.

The combinations in 1(a) and 1(d) hardly suffice to account for all the number phenomena found cross-linguistically. A complete catalogue of number phenomena that has to be accounted for is presented as follows:

(2) a. Singular count nouns
b. Plural count nouns
c. Singularis tantum (mass) nouns
d. Collective
e. Pluralis tantum
f. Dual nouns
g. Trial or Pancas nouns

Expressive derivation (Beard 1995:163-165)

This is another L-derivation which reflect at least five functions universally. They do not change the meaning or lexical class of the lexemes over which they operate, they are mentioned as:

- augmentative;
- pejorative
- affectionate; and
- honorific

They express prejudices of the speakers as to whether the referent is smaller, larger, more likable, or more threatening than other members of its semantic category.

Expressive derivations are always optional and subjective. Augmentative and diminutive nouns express functions as LARGE (X) and SMALL (X) some semantic category SIZE.

A pejorative noun variant indicates that the speaker dislikes the reference. An affectionate form reflects the speaker's favor. In some cases Affectionate and pejorative forms conflate with diminutive and Augmentative forms.

Transposition (Beard 165-168)

This is an asematic reclassification rule that represents a major type of derivation rule which cannot be explained in the same terms as semantic (grammatical function) rules.

The optimal assumption concerning transposition, is that the lexicon may transpose any member of any major lexical (N, V, A) to any other major lexical class by providing it only with the lexical G-features of the target class and neutralizing (but not deleting) the inherent G-features of the base.

There are lexical derivations which reflect a change in lexical class only e.g. an adjective which may change to a noun through a lexical derivation as in (3):

(3) A → N
New → New-ness

Other lexical derivations may reflect a change in lexical class plus a change in grammatical function as in (4):

(4) V → N
Build → builder
Annoy → annoy-ance

Functional L-Derivations (Beard 1995:165-174)

The range of meanings within functional lexical derivations is constrained by the subcategorization frame of lexical items (i.e. by their argument structure or grammatically function).

3.2.8 Siloni (1997)

Siloni (1997) wrote about the similarities and differences between verbs and their corresponding derived nouns. His work distinguishes between event (action) nominals and result (concrete or simple) nominals. He cites Grimshaw's (1990) observation in investigating the behavior of nouns with respect to argument structure and θ-theory, that the diagnostics to discriminate between event nominals and result nominals lies in the question of argument structure display.

Concerning Hazout's (1994, 1995) argument that 'Hebrew event nominals contain a verbal projection' Siloni (1997:66) observed that there is no empirical reason to believe that Hebrew event nominals contain a verbal projection, as their verbal properties are apparent. He argues in favor of a lexicalist approach to event nominals. He regarded the event/result distinction to be part of the lexical information a deverbal noun can have.

His work comprises of five parts in which the following concerns are raised:

1. establishment of the partition of Hebrew into event and result nominals.

2. event nominals are not modifiable by real adverbs

3. the important reasons to believe that accusative case occurring in noun phrases is not the ordinary accusation of transitive verbs,

4. addition of arguments to the effect that accusative case in nominal contexts is an inherent case whose occurrence cannot be systematically predicted.

5. there is an analysis of subjectless event nominals.

Concerning the issue of event versus result nominals, Siloni (1997:67) claimed that only nouns referring to an event are associated with an argument structure. A noun that takes arguments refers to an event and it has an event structure. Result nominals do not involve an event and they have no argument structure.

Grimshaw's (1990) diagnostics (i.e. aspectual modifier, agent oriented adjectives, rationale clauses) are used in determining the behavior of the Hebrew nouns. The result showed that only event nominals have an argument structure, while result nominal do not involve an event and do not take arguments. Their arguments are semantic participants with which they are not in clear θ-relations.

Event nominals, in contrast have an argument structure to satisfy, similarly to adverbs. Hebrew event nominals can be modified by adverbs and takes accusative complements as compared to English.

Siloni (1997:72-73) cites more diagnostics in Hebrew language. They are :

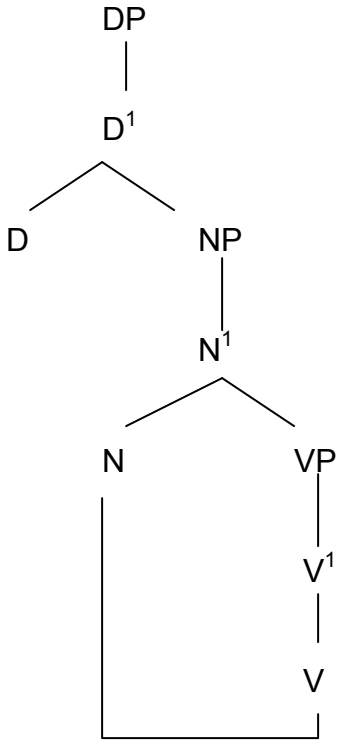
- agent oriented adverb
- an aspectual modifier and
- accusative theme

Result nouns disallow adverbs modification. In Hebrew, nouns allow an accusative theme. A noun taking an accusative complement has an event reading. The adverbial modification and accusative case assignment set apart Hebrew event and result nominals. Accusative arguments are impossible with nouns that cannot denote an event.

Hebrew event nominals have an ambiguous nature. They show nominal behavior and on the other side show verbal behavior.

The syntactic derivation, which shows the VP analysis is another way of distinguishing between event and result nominals.

Siloni (1997:74) cites Hazout's (1990, 1995) proposal that the syntactic representation of event nominals, contains a verbal projection in order to derive the verbal properties of Hebrew event nominals. He represents the structure and the incorporation of V-into N- as follows:



Concerning the above structure, Siloni (1997:75) suggested a restrictive hypothesis, that a process of nominalization that modifies the categorial specification of the verb as in the structure is not part of UG. He argued that Hebrew event nominals cannot be modified by genuine adverbs as appears to be.

Siloni (1997:75-76) argued that Hebrew nominals appear to be modifiable by adverbs. The licensing of adverbs in noun phrases by the event is the cause. He observed that

most of Hebrew adverbs are adverbial PPs. Hebrew nominals admit adverbial PPs, as they are the genuine nominal modifier, and the presence of an event licenses adverbial modification.

He says that genuine adverbials cannot appear in Hebrew noun phrases in the same way that they cannot appear in other languages like English or French. Adverbial PPs as modifier of event nominals are syntactically allowed in noun phrases as they are PPs. Semantically an event's presence licensed them.

When coming to the case issue, Siloni (1997:78) states that Hebrew event nominals assign accusative case to their direct object. He presents five major distinctions between the accusative case of transitive verbs and that found in nominal contexts:

i. the accusative particle (which appears with definite objects only and play a role of a case marker)

ii. exceptional case marking configurations (this involves nouns which are unable to license accusative case to subjects of small clauses. Chomsky's (1986) case assignment is referred to);

iii. accusative pronouns (event nominals are unable to realize their object as an accusative case of nouns is an inherent case);

iv. the relative ordering of the direct and indirect objects (verbal contexts license structural accusative case, while nominal ones determine inherent accusative case).

v. subjectless noun phrases (it deals with their inability to take an accusative component) Siloni (1997:79-84).

When coming to inherent accusative case, Siloni (1997:84) uses 'et insertion' (a particle that assigns an inherent case) in Hebrew noun phrases to show how accusative case is assigned through the presence of dummy case marker.

To show the relevance of AgrP, Siloni (1997:86) cite, Chomsky's (1991, 1993) analysis of structural accusative case within the functional category. He argued that in the absence of AgroP, the structural accusative would not be available.

Concerning the issue of AgroP, syntactic approach is preferred to the bare VP approach. According to Siloni (1997:86), the VP-analysis cannot explain why event nominals do not allow adverbs. He argued that the occurrence of accusative case in noun phrases is idiosyncratic. In that case idiosyncratic is not allowed under VP-analysis, because there will be no assignment of accusative case.

In the subjectless event nominals, the argument lies on passive constructions and unavailability of accusative case. Siloni (1997:89) is against the view that subjectless event nominals are passive constructions and are the result of absence of accusative case.

In analysis of the Hebrew verbal passive discrepancies, Siloni (1997:89) claimed that subjectless event nominals are not syntactically derived from verbs that have undergone syntactic passivization. These claims are based on:

- deverbal nouns that appear in the putative passive construction, even though their source verbal cannot passivize,
- verbs that take a prepositional complement and can passivize, but their related noun cannot do so.

Siloni (1997:91) refer to Binding Theory's Principles A and B to argue that the implicit Agent in subjectless event nominals is syntactically realized as a null element. He relates his analysis to the parallel argument constructed (regarding non-event nouns) by Chomsky's (1986) original discussion dealing with concrete nouns.

In this discussion, Siloni (1997:93) answered the question as to why are subjectless event nominals unable to realize an accusative Theme. He provided two possible solutions (i.e. the question of case dependency and thematic accusative dependency). He argued that inherent accusative case is available in Hebrew noun phrases only if the

external θ-role has been discharged. He proposed and adopt the lexical saturation approach to the implicit Agent of subjectless event nominals.

3.2.9 Aronof, Anshen (1998)

The morphology of a language is regarded as dealing primarily with the internal structure of the potential complex words of a language. Those words may not exist, but they all conform to the morphological structure of the language.

On the other side, the lexicon of a language is a list of existing items in the language, those that a speaker has to know because they are arbitrary signs. Most of the items on this list are words. The regular morphology and the irregular lexicon are separate entities.

Morphology deals only with potential words and the lexicon only with existing words. There are two reasons in which these two systems work together:

i. they serve the same role in language (i.e. both provide words)

ii. they are both interdependent (morphology which forms words from words, finds the words it operates on (its bases) in the lexicon).

Morphology versus the lexicon (Arnoff and Anshen 1998:238-241)

The relationship between morphology and lexicon is better explained as that of rivalry. The nature of this rivalry is better understood by considering the individual's mental lexicon (the list of irregular items that the speaker/hearer carries around in his or her head.)

This mental lexicon helps in defining the difference between existing words and potential words. The morphologically well-formed complex potential words are provided by the morphology, not by the lexicon.

The difference between which words exist and which are potential is defined solely in terms of the individual's lexicon and morphology.

A morphologically complex word must be placed in the lexicon in order to use it again.

Morphology creates regular words, while lexicon stores irregular words. This shows that the morphology and the lexicon do not interact.

Their interaction can be seen in the case of plural in English. Some plurals come from the lexicon (in the case it is irregular like ‘women’ or ‘people’), and some from the morphology (in the case it is regular, like ‘dogs’)

The phenomena of ‘blocking’ (the non-occurrence of one form due to the simple existence of another) assist in answering the question of irregular and regular plural stored in the lexicon. Its effects can be seen in inflection and also in derivation where a word like * ‘furiosity’ (formed from ‘furious’) will be blocked by ‘fury’ which already exists in a speaker’s lexicon.

The effects of blocking are also felt in syntax, where an existing word will sometimes block an entire synonyms phrase. There will be no blocking without synonyms.

Blocking is subject to the vagaries of the mind as it is a psychological phenomenon.

Blocking is also subject to another psychological factor: frequency (familiarity or measuring factor). The more frequently used an irregular form is, the more likely it is to block the corresponding regular form.

The effect of frequency can be detected experimentally and in children’s speech over regularizations for irregular verbs in English. In morphological regularization over time, the effect of frequency can be seen.

The search for the proper word can be viewed as a race between the mental lexicon and the morphology.

Morphology based on the lexicon (Aronoff & Anshen 1998:241-242)

The actual production of a morphologyically complex word is done largely by applying a morphological rule (adding affixes) to actually occurring base words that are stored in a speaker's mental lexicon.

The inheritance of irregularity indicates that morphological rules operate on words in the lexicon. Semantics is regarded as the most common type of inherited irregularity. Complex words often have conventional senses that differ slightly from their predicted senses.

The inheritance of the phonological irregularities of words in the lexicon is also possible, even though people are less aware of them. This is based on the derivation in pronunciation of a derived word.

Morphological productivity (Aronoff and Anshen 1998:242-247)

This is the extent to which a particular affix is likely to be used in the production of new words in the language.

Quantitative and qualitative productivity (Aronoff & Anshen 1998:242-245)

In quantitative productivity, a series of unproductive affixes predicts the use of potential words, but at the end they are not likely to be used at all in coining new words. In English examples like nominal suffix '-the'; the productive inflectional suffixes '-ed'; '-ing'; '-s'; and highly productive derivation suffixes like '-ness' and '-ation'; and '-less' productive derivational suffix like '-ity'. They are regarded being useful and only differ in degree of productivity.

In quantitative productivity, morphological factors are relevant to productivity. The rival affixes that are very similar in their semantic condition are able to be present in this form of productivity. They can be seen from several suffixes that form nouns from adjectives in English. Most of them are productive only within a morphologically restricted domain.

For example, the suffix ‘-ness’ operates as the default affix for forming de-adjectival nouns.

The relationship between productivity and growth (the rate at which new words are being added to a language) assists in measuring quantities productivity.

Global productivity is another statistical measure (depends on the likelihood of encountering new words and also on the number of words of that a speaker already know) that has been proposed.

According to Aronoff and Anshen (1998:244-245) citing Baayen’s (1992) measure of productivity the results reflect the following:

- the affix-ness produced close to twice many words as ‘-irity’ in the language.
- the productivity of ‘-ity’ as opposed to ‘-ness’ has shown a steady increase over time.
- ‘-ity’ is synchronically more productive in English than ‘-ness’.

Concerning these results, counts based on actual corpora of Baayen (1992) is more reliable than others (like the dictionary method).

Frequency and Productivity (Aronoff & Anshen 1998:245-246)

Word frequency is also related to productivity (i.e. the less productivity a morphological pattern has, the more frequent on average its individual members will be). Frequency is also important in the selection of bases (i.e. words with high frequency bases are more readily recognized than words with similar frequency but low frequency bases).

Pragmatics and Productivity (Aronoff & Anshen 1998:246-247)

This relates to the distribution between unproductive (which resembles more marginal forms of word creation like formation of blends) and production morphology patterns (which are prevasive in language and they seem to serve a function that arises from their very unproductively).

The meanings of the less productivity formed set are less predictable making the entire set less coherent semantically.

The meaning of new word formed by means of a less productive affix will be less predictable semantically.

Less productive affixes may easily be used to coin special or narrowly technical terms. This is noticed in the use of technical terms in different technical fields (economics and medical).

Horn (1984, 1993) is cited for his contribution (through the interaction of the two Gricean pragmatic principle) in the use of less productive affixes.

The principle of relation (say no more than you must) leads the speaker not to use the less productive form in most instances.

The principle of quality (say as much as you can) will interact with that relation.

Aronoff and Anshen (1998:246), maintain that 'morphology and pragmatics act together to enrich language's expressive potential.

3.2.10 Ryder (1999)

Ryder (1999) wrote about an account of **–er** formations in present day English. She argued that this nominalizing suffix **–er** has been productive throughout the history of English; that even in present day English it has developed a wide range of base and referent types.

Learning that most formal linguistic treatments account for only a fraction of **–er** types of **–er** nominals actually found, she proposed a cognitive model which addresses both the problems with verb-based forms that are encountered in other models, and that includes an account for all the nonverb-based **–er** nominals.

In old English, the root for **'-er'** suffix was either verbal or nominal with the verbal being much more common (Ryder 1999:269). She cited Kastovsky (1971) referring to three

old English dictionaries estimate that of approximately 300-er forms that were examined, only 50 were denomoinal and the rest were deverbal. Few compositional patterns were found.

Ryder (1999:279) observed that there is an extreme variety of **'-er'** nouns in present day English. Apart from simple nouns and verbs, for bases, there is also forms based on adjectives, prepositions, particle verb constructions, verb particle constructions with and without an **'er'.**

As to referent of the '-er' nominals, they can include people, animals, plants, clothing, concrete object denoting instruments or locations, and events or activities.

The variety of possible semantic relationships between the base and the referent of an **'–er'** nominal has also broadened (Ryder 1999:271).

In the case of verb-based forms, the referent fills a wide range of semantic roles in relation to their verb base (i.e. Agent, instruments, location and patients, and many whose relationship to their verbal stem is harder to fit into the semantic roles mentioned).

Ryder (1999:277) proposed a model based on semantic / cognitive / functional principles that account for all the verbal-based exceptions to the formal models, besides incorporating the **'-er'** forms with non-verbal bases.

Her basic assumption is that **'-er'** forms, like noun-noun compounds (e.g. doghouse) are best viewed as abbreviated noun phrases.

'-Er' forms are more abbreviated than noun-noun compounds because they fail to define the relationship between the base and the referent and the referent itself is only covertly coded, being expressed indirectly by the suffix alone.

There are certain constraints on the types of words chosen to be the bases for '-er' nominals and on the entities the **'-er'** nouns are likely to refer to. These two types of constraints interact in certain ways. They can be considered in terms of the base selection and secondly is related to the general nature of nouns.

In terms of the base selection, it is discovered that the base of an **'-er'** nominal should limit the possible schemas in which the nominal can participate as much as possible.

In general terms, words belonging to different parts of speech evoke different number of schemas. This is represented by Ryder (1999:279) as follows in (1) below:

(1) Number of associated schema: verbs < nouns < adjectives, prepositions, adverbs.

She cite Croft's (1991) work to show the cross linguistic evidence of the following correlations in (2) below:

(2)

	Semantic class	Pragmatic function
Noun	Object	Reference
Adjective	Property	Modification
Verb	Action	Predication

(Ryder 1999:279)

Ryder (1999:279) summarizes Croft's (1991) definition of prototypical verb as representing a simple event with only one event schema which will be evoked by any given verb. An example of the verb 'eat' refers to a single clearly recognizable event.

In contrast nouns refer to entities, which act as participants in events. The noun 'wall' may be considered in its involvement in any number of other activities, each encoded as a different schema. Adjectives representing properties of objects are potentially involved in all the events that the noun they modify participate in. They can be used to modify a large number of nouns. A word like 'red' can be used to attribute the property of redness to apple, books, dress, bricks, cheeks and other objects.

Prepositions and adverbs differ from nouns, adjectives and verbs in that their semantic and pragmatic characteristics are not as homogeneous. Ryder (1999:280) cites Lancaster's (1987) characterizing of prepositions. Prepositions are regarded as expressing relations that are conceptually dependent. Prepositions do not refer to single events but rather relations that may play a part in a number of events.

Adverbs are considered to share most of their characteristics with prepositions, and the two classes overlap semantically.

The implication of the hierarchy for the formation of **'-er'** noun base on different parts of speech should be quite clear.

Native speakers prefer bases that do not have such wide ranges which might lead to an undesirable degree of ambiguity.

In delivering broad generalizations about the syntactic categories most likely to be used as stems for **'-er'** nouns with verbs being the most likely and adjectives, prepositions, and adverbs the least likely, some specific predictions can be made about individual words in any given class.

The basic constraint involved is that the components of an **'-er'** form must be chosen in such a way as to limit the number of event schemas evoked by the form as a whole.

The second major constraint on **'-er'** bases is related to the general nature of nouns. According to Ryder (1999:282) a central attribute of prototypical nouns is that their referents are stable across time.

The bases of deverbal **'-er'** nouns are most likely to be verbs of expressing activities that can be construed as habitual or durative such as 'singing' dancing, working, writing, eating etc.

Unaccusative verbs that might satisfy the constraint concerning the unlimiting of evoked event schema fail the second major constraint because they refer to events that tend to be non-habitual e.g. disappear, wilt, fall or die.

The constraint is also relaxed in a deictic use of **'-er'** forms (which it is used to refer to compounds that are made up on the spot to refer to participants in the present speech situation).

Events that generally occur once during the existence of an individual entity may well happen frequently to a whole group of such individuals and they are therefore regarded as habitual activities of the group.

Phrasal stems are the last type of base constraint to be considered (e.g. in-and-outer, up-and-comer). These follow the same constraint as the single-word base (i.e. they must evoke a sufficiently narrow range of event schemas to be able to constrain the possible meaning of the resulting **'-er'** noun).

As phrasal, they provide more information than single words and are generally more informative as a class than any of the single word bases.

The phrases serving as bases in established **'-er'** nominals show a high level of entrenchment. The notion of entrenchment is roughly equivalent to the traditional notion of lexicalization or idiomatization. Ryder (1999:284) argued that not only words but phrases, sentences or whole texts can become highly entrenched if they are activated often as single units. Proverbs are examples of such sentences, or whole texts, such as a favorite song etc.

Constructions that are highly entrenched are units in the lexicon and easily accessed as such. Ryder (1999:284) cites Varantola's (1982) discovery of the behavior of modifiers, of high percentage of entrenched phrases among those used as pronominal modifiers.

Ryder (1999:284-285) uses examples like 'birthdayer' and 'twenty-firster' to explain the constraints on the reference of **'-er'** nouns. The ambiguity that is found on referents is unavoidable without a context. This is clear from words like 'twenty-firster' and many similar examples that a language can tolerate quite a lot of potential ambiguity in **'-er'** forms.

The degree of referent ambiguity is in reality constrained by at least two factors (i.e. salience and identifiability). According to Ryder (1999:285), salience refers to the degree to which something is noticeable in comparison with its surroundings, while indentifiability refers to the extent to which a participant is readily identifiable by mention of the event alone.

Ryder (1999:285) provides an example of a prototypical event in which she showed that salience in an event contributes to a participants identifiability.

(3) George smashed the rock for his wife with a sledge-hammer
Agent patient benefactive instrument

in the backyard yesterday evening
Spatial location temporal location

Concerning the above prototypical event in (3), Croft (1991) is cited as arguing that the Agent and the patient are generally more salient in events than the instrument as the natural beginning and the points of the event. Based on the animacy hierarchy in (4) below:

(4) human > animal > physical object > abstract entity,

The agent will be more salient than the instrument. Then the Agent should be the most salient overall, followed by the patient, then the instrument and then the other participants:

(5) Saliency: Agent > Patient > Instrument > Other cases.

The reason as to why are patients far less often designated by **'-er'** forms than a patient is not nearly so easily identifiable as an instrument. This is true as the instrument role in an event may be filled by an object that has no special function.

Generally patients will only be identifiable by the event in which they participate when the speech context is fairly restricted (Ryder 1999:286).

Another stronger reason for preference for agents over instruments over patients are referents for **'-er'** forms lies in the semantic closeness, which is determined by the nearness on the causal chain of the participants referred to by the thematic roles. From the example in (3) above, the clausal chain can be represented as follows in (6):

(6) George sledge-hammer rock
Agent instrument patient

From this clausal chain, it is clear that the spread of '-er' nominal referents is likely to be from Agents to instruments than from Agents to patients.

There are some instances where instruments are seen as the head of a causal chain. The intermediary instruments are also highly salient and can be the referents of **'-er'** forms based on the verbs evoking the events.

Facilitative instruments, on the other hand, are not easily separated from the Agent in their causal chain and are less likely to appear as the head of the section of the chain. Instruments often behave like Agents in occupying the position of head in the most salient part of their event's causal chain.

Patients as referents of verb-based **'-er'** forms are uncommon both because of their low identifiability and because they differ much more from Agents than do instruments. In most cases the **'-er'** nouns with patient referents refers to food (e.g. broiler, steamer, roaster etc). In a given context the cooking event, the chief participants are the person cooking, who is the Agent and the food being cooked, the patient.

Other patients referents of **'-er'** nouns are not always as 'active' as cooking food, they are identifiable in their event. For an example certain clothes are designed specifically for certain activities (swim > swimmers, jog >joggers, romp >rompers).

Concerning the noun-based **'-er'** nominals, Ryder (1999:290) argued that the verbs are not participants in the event schemas they evoke, but nouns are.

The relationship that holds between the role in the evoked event of the base noun's referent and that of the referent of the **'-er'** form of which it is apart need to be considered as both salience and identifiability seem to play a role.

The base form of an **'-er'** noun provides the background in which the referent is to be placed. The notion of 'figure' and ground is relevant.

According to Ryder (1999:290), in order for the proper figure-ground relationship to hold, the referent of the **'-er'** noun, should be higher in salience than that of the nominal base which is part of the ground. The implication is that if the **'-er'** nominal refers to an Agent the nominal base could refer to any other element in the schema, within the constraints of identifiability.

The relationship between patient and instrument is not clear. This result from the fact that patients are not informative enough to act as base, and are neither salient nor informative enough to be common referents. Ryder (1999:291) presents the various limitations on denominal **'-er'** forms as in (7) below:

(7) If nominal refers to:	Base may refer to:
Agent	Any other element in the schema.
Instrument	Patient or other peripheral elements.
Patient	Instrument or other peripheral elements.

Ryder (1999:291) summarizes the pragmatically based constraints on **'-er'** formation as follows in (8):

(8) (a) the referent of the base should constrain as much as possible the number of schemas in which the **'-er'** nominal's referent could participate.

(b) The referent of the **'-er'** form should be high in salience and informativity within the chosen schema, with the latter factor being the stronger.

(c) The base will generally be a highly entrenched form, allowing for ease of activation for both speaker and comprehender.

3.2.11 Bauer, Huddleston (2002)

Bauer and Huddleston (2002) wrote about the formation of words in which their concern is based on the form of lexical bases i.e., with the lexical side of word–formation.

Established words and potential words (Bauer and Huddleston 2002: 1623-1624)

Established words are recognized as part of the vocabulary of the language. They are individually familiar to speakers of the language and are found in standard dictionaries. Words like ‘bishopric‘, ‘kingdom‘, ‘unfaithfulness‘ etc., are regarded as established words.

Words which conform to the rules of word–formation are called ‘grammatical‘, and those that do not conform to these rules and are not established are called ‘ungrammatical‘.

Words which are grammatical but not established are referred to as potential words, because they have the potential to become established, e.g. ‘policeability‘.

‘Nonce–words‘ are words which have been used but have not become established.

Morphological structure (Bauer and Huddleston 2002: 1624 – 1628)

a. Complex and simple words

A distinction is made between a complex and a simple word.

A complex word is one that can be analyzed into sequence of smaller units e.g., mouse–trap, child–care, father–figure, en–trap etc. while a simple word is that which cannot be analyzed e.g., trap, child, father etc.

b. Bases and affixes

Bases and affixes are the two main morphological categories that figure in the structure of words. English bases are characteristically free while affixes are normally bound. An element is free if it can stand alone as a word and bound if it can’t. Here are the examples below in (1):

(1) **Bases**	**affixes**
Trap	-en in en – trap
Child	-ish in child – ish
Father	-ly in father – ly

Free	**bound**
Trap in en – trap	-en – in en – trap
Child in child – ish	-ish in child – ish
Father in father – ly	- ly in father – ly

Prefixes are affixes which precede the base e.g., -ly in father – ly and –ish in child – ish.

There are some bound bases in English, which can not stand alone as a word e.g., **dur** – able , **dur** – ation , **aggress** – ive (bound bases) . As compared with free bases we have : **perish** – able , **starv** – ation , **abus** – ive , pre – **judge** etc (free bases).

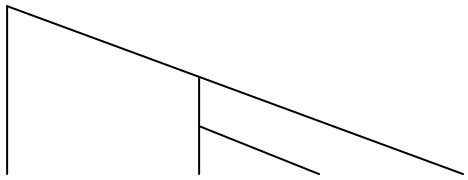
c. Combining forms

These are generally forms which have their origin in one of the classical languages, usually Greek , e.g., **anglo** – phone , **auto** – gamy , **electro** – lyte , **pseudo** – science etc . In this case one form may combine with another to form a word; or some can also combine with a free base.

d. Constituent structure

Words containing three or more elements have a hierarchical constituent structure comparable to that of larger grammatical units.The immediate constituents (ICS) of un–gentle–man–ly are un + gentlemanly. The constituent structure can be represented in the familiar type of tree–diagram, as in (2):

(2)



Un gentle man ly

Various kinds of base are defined as follows:

(3) i. compound base: one whose IC’ s are themselves bases e.g. , gentleman.

ii. derivative base: one with an affix as in IC. e.g., (gentlemanly ungentlemanly).

iii. simple base: one not divisible into smaller morphological constituent e.g., ‘gentle‘ and ‘ man‘.

vi. lexical base: one that is not part of a larger base formed by a process of lexical word – formation e.g., ‘gentleman‘ in ‘He behave like a gentleman‘.

e. Morphophonological alternation

This is a phenomenon in which bases and affixes exhibit variation in phonological form depending on the structure of the base in which they occur.This process is not reflected in the spelling and it is frequent in derivative bases. Here are some examples:

Man has a reduced vowel | a | instead of the full vowel | æ | that is normal when is not part of a compound.

Electric | k | v/s electricity | s | the reduction of | k | to | s | of electric to electricity.

f. Morphological analysability v/s etymology

Words are most clearly analysable into constituent part when the latter occur with the same or similar meaning elsewhere .There are some cases where neither component contributes a clearly separable component of meaning to the whole. The case of ‘**blackmail’** is morphologically analysable but semantically opaque as a result of historical change. ’**Blackguard**‘ is a simple base and not a compound .

This shows that words like ‘blackguard‘, ‘cupboard‘, ‘breakfast’, ‘husband‘, etc. belongs to the field of etymology (i.e., the study of the historical source of words) and not to the field of morphology (i.e., the study of the grammatical structure of words.

Words like ‘mongrel‘, ‘markerel‘, ‘doggrel‘, ‘scoundrel‘, are regarded as etymological analysable. Even though it is not easy to decide whether one is doing morphology or etymology. The semantic relation between the bases and the evidence for taking a suffix

will make it possible to determine whether the word is morphologically analysable or not. **Durable** as an example shows that ‘**dur**‘- is a base, following the semantic relation between ‘durable‘, ‘duration‘, and ‘endure‘ etc.

Words such ‘commit‘, ‘demit‘, ‘emit‘, ‘compel‘ appear as an evidence for a morphological analysis. The set of relationships between the verbs in 4(a) and the corresponding noun as in 4(b) below :

(4)	a.	commit	demit	permit
		compel		expel
		compose	depose	expose
	b.	commission	demission	permission
		compulsion		expulsion
		composition	deposition	exposition

It is argued that no boundary can be drawn between morphological analysis and pure etymology .

Productivity

A particular kind of morphological process, or a particular affix is productive if it is still available for the creation of new words. The process of combining two nouns into a compound noun that was used in the olden days is still productive in nouns like ‘housemate‘, ‘flatmate‘, ‘husband‘, etc. The formation of adjectives by adding the suffix – ity to an adjectival base ending in – ‘able‘ to a verb and the process of forming a noun by adding the suffix – ity to an adjectival base ending in ‘ able ‘ are still productive.

But the process that was used before of combining a type of verb + noun that result in pickpocket/* pick–basket is not productive.

Lexicalisation

The reverse (converse) of productivity is lexicalisation. Words are lexicalised in that the processes by which they were formed are no longer productive; and those that their

meaning of the whole is not predictable. Examples are ‘bishopric‘ and ‘pickpocket‘ (no longer productive) and ‘blackmail‘ (not predictable from current meaning of ‘black and‘ mail‘). Derivates with bound bases like ‘durable‘, ‘aggressive‘, ‘disperse‘, ‘pre–empt‘ etc. are lexicalised in that the still productive use of the affixes concerned attaches them to free bases, not bound ones.

In words which are no longer morphologically complex lexicalisation is high (e.g. husband and mongrel). Lexicalised word tend to have rather more specialised meanings than non–lexicalised ones (like in ‘blackmail‘), the meaning is that of extorting money from someone by threatening to reveal damaging information not the ‘mail‘ which is ‘black‘. The specialisation of meaning is typical of words that are lexicalised (e.g. a wheelchair has a specialised because it is an established word).

Degree of productivity

A degree of productivity needs a consideration to see if a word formation process is still productive. This fact can be illustrated by comparing the suffixes – **ness** and – **ity** which can be added to adjectives to form nouns. The overall results shows that – ‘ness‘ has a degree of productivity than ‘–ity‘. Words produced by the most freely productive process rarely become established. Both these suffixes are distinguished by categorizing them as ‘highly productive‘, or low productive etc .

Nominalisations (Baier & Huddleston 2002:1696-1706)

This is a word-formation process which involves the formation of a noun from bases of other classes by affixation, conversion, or phonological modification. This also includes comparable cases where one type of a noun is formed from another. Other cases where one type of a noun is formed from another is compounding which may also be regarded as a nominalization.

Affixation is the main focus in this discussion. The discussion is divided into two parts. The first deals with processes which serve primarily to form nouns denoting persons or instruments, while the second with those whose output consists primarily of nouns denoting actions, states, and processes.

Person / Instrument nominalizations (Bauer & Huddleston 2002:1697-1700)

Person and instrument nominalizations are taken together as there are some processes that are used for both. There are a number of suffixes that are used for both. There are a number of suffixes that are used only for person, but none used only for instruments.

(a) –ant and –ent

These suffixes attach to verbs as in (5) below:

(5)	i.	a.	assistant, complainant, informant	b. disinfectant, relaxant
	ii.	a.	correspondent, president, resident	b. absorbent

(b)-ard

This suffix is no longer productive and only a handful of words are recognized such as : ‘drunkard’, ‘dullard’, ‘sluggard’.

(c) -arian

This suffix is still productive, and it attaches to abstract nouns to form nouns denoting person such as: ‘disciplinarian’, ‘secretarian’. The resultant nouns may denote holder of a particular doctrine e.g. Trinitarian, humanitarian, vegetarian.

(d) -ee

This suffix comes from a French past participle ending, and is attached to verb bases. It is usually relates to the passive use of a past participate, giving the meaning ‘one who is ~ ed’. ‘appointee’, ‘employee’, ‘divorcee’, ‘payee’, ‘nominee’. There are also words relating to the perfect (active) use of a past participle: escapee, retiree. The –ee suffix is still productive.

(e) –eer

It is usually attached to nouns, deriving nouns meaning 'person concerned with ~': 'auctioneer', 'engineer', mountaineer'. Very often of these words are derogatory: 'profiteer', 'racketeer', 'souneteer'. This suffix is still productive.

(f) –er, -or, and-ar

They are regarded as varients of the same suffix. The –ar varient is found in very few words such as 'beggar', 'bursar' and 'liar'. Generally –or occur in words of Latin origin (instructor) in technical or legal words (adjustor, mortgator) or with bound bases (author, doctor, tailor, traitor). The –er is found in most other places, and can be taken as default variant. The –er variant behaves in general like a class II affix. It occurs with bound bases in such as words as 'biographer, 'philosopher' etc. The highly productive –er variant attaches to a considerable range of bases besides verbs as in (6) below:

(6) i. executor, golfer, freighter, Londoner, New Yorker.
ii. fiver, oncer, Southerner, Nine-to-fiver.

The bases in (i) are nouns, or proper nouns, while in (ii) there is an adverb, an adjective, and a sample of dephrasal compound bases. Deverbal –er nouns also figure very productively in compounds such as hairdresser, stage-manager. Nouns in –er exhibit a wide range of meanings. The central case is that of a deverbal noun denoting person filling the agent role with respect to the verb: baker, commander, singer. A non-agentive reading is found in words like 'admirer', 'loser'. Lexicalised animal names are seen in 'Pointer', 'marbler', instruments in 'boiler', 'eraser', 'silencer'.

(g). –ist

There is an extremely productive suffix, and few of its uses are illustrated in (7) below:

(7) i. atheist, baptist, evangelist.
ii. extremist, idealist, isolationist.
iii. agist, classist, racist, sexist.

iv. bigamist, monogamist, agronomist.
v. anglicist, classicist, physicist.
vi. ceclist, cymbalist, harpist.

There is a strong paradigmatic relation between –ist and –ism as illustrated by words (i – iii). This has to do with affix-replacement from the –ism words. From the words in (7) above, it shows that –ist normally forms nouns from nouns. Etymologically that holds for 'typist' too, but its present meaning relates more directly to type as a verb.

(h) –nik

This suffix originate from Russian via Yiddish. The meaning is broadly 'person associated with ~', as in the original 'beatnik' 'member of the beat generation. It is found in more or less jocular words, particularly for groups seen as anti-establishment (peacenik, refusenik) or faces of a certain kind of music (folknik, jazznik).

(i)-ster

This suffix means 'person connected with ~'. Originally it was used per gender-neutral in words like, 'webster', 'songster', 'spinster'. Later forms are often derogatory (rhymster, punster), with a significant group having connotations of shadiness or illegal dealings (ganster, mobster, gamester). This suffix is still productive especially in AME.

(j) conversion

Conversion from verbs may yield nouns denting persons (bore, spy) or instruments (clip, rattle). There are fair number of nouns denoting persons that are converted from adjectives (drunk, intellectual, professional).

Action / state / process nominalizations (Baier & Huddleston 2002:1700-1706)

The distinction between the use of them depends on the context in which the nouns are used than of any inherent quality of the affixes or processes involved. Several of the suffixes have additional uses besides that of forming action / state / process nominalizations.

(a) –age

This suffix originate from French and it occurs in a number of nouns but it no longer productive. It attaches predominantly to nouns and verbs, but also found with the occasional adjective (shortage). They are illustrated as in (8) below:

(8)	i.	baggage, coinage, fruitage	[collectivity]
	ii.	bondage, parantage, shortage	[state, condition, rank]
	iii.	breakage, marriage, stoppage	[result]
	iv.	anchorage, hermitage, orphanage	[place]
	v.	acreage, dosage, mileage	[amount, or rate]
	vi.	anchorage, cartage, corkage	[charge]

(b) –al

This suffix attaches to disyllabic verbs with stress on the final syllable ‘arrival’, ‘denial’, ‘refusal’, ‘removal’, ‘trial’. Few <u>–al</u> nouns have been created since the nineteenth century. It is still questionable whether this suffix is still productive.

(c) –ance and –ence

These suffixes are based on Latin Models even though English formations are found (riddance, utterance), but these suffixes are no longer productive. They form nouns from verb or adjective bases as in (9) below:

		verb bases	adjective bases
(9)	i.	acceptance, disturbance	arrogance, fragrance, relevance
	ii.	emergence, interference	prudence, sentience, violence

(d). –ation, -ion, -ision, -tion, -ution

These suffixes occurs with verb or bound bases. The suffix –ation is only one which is English while the others are virtually restricted to loan words from Latin or French (often not clearly anlysable in English), as in ‘confus’-<u>ion</u>’, ‘perd-<u>ition</u>’, ‘compul-<u>sion</u>’, ‘absorp-<u>tion</u>’ solution. These suffixes are variants of a single form, with <u>–ation</u> the only one

productive in present-day English. Established words include some where the verb base bears no suffix (experimentation, flirtation, starvation). In uses where it is still productive it attaches to verbs with the following suffixes in (10) below:

(10) i. –ise atomisation, civilisation, fertilisation
ii. –ate alternation, education, intimidation
iii. –ify glorification, justification, purification.

(e) –dom

Originally it was a noun. This suffix yields nouns with a number of meanings. The most general or neutral is 'state / condition of being ~' as in 'boredom', 'martyrdom', 'stardom'. In such words as 'dukedom' and 'earldom' it means 'territory under the jurisdiction of / associated with ~. The suffix has also developed the sense 'collectively of ~', as in 'gansterdom', officedom' (where it has a deprecatory tone) ;and jocular words like 'puppydom'. It is still productive, especially in AME.

(f) – hood

It was originally an independent noun just like-dom. It is also like –dom in sense, yielding nouns meaning 'condition of being ~', as in 'bachelorhood', sainthood', 'widowhood', or 'collectively of ~', as in brotherhood, priesthood. The base is normally a noun, with de-adjectival 'falsehood' and 'likelihood'. Though much less frequently used than '-dom', it is still available for use in new words –in noun- words like 'bumhood'.

(g) –ing

With a good number of verbs, suffixation with –ing is the only way of forming a deverbal noun: 'Coming', 'feeling', 'forgetting', 'opening', painting', 'writing' etc. There is also a difference in meaning between the –ing noun and a noun formed from the same base by another suffix or by conversion, as in the pairs 'breakage' ~ 'breaking', laughter' ~ 'laughing', 'knock' ~ knocking'. In other cases, an –ing noun can substitute for some other deverbal noun without a change of meaning: 'classification' / classifying, completion / completing.

(h) –ism

Most –ism words fall into one of the three semantic groupings illustrated in (11) below:

(11) i. Buddhism, Capitalism, Dwarwinism, Expressionism, Fanaticism
ii. Americanism, Archaism, Collequialism, Gallicism, Spoonerism.

The nouns in (i) represent a broad range denoting, systems of philosophical, religious, or political belief, intellectual or artistic movements. Related senses inchides modes of life (monasticism), attitudes or conduct (absenteeism), defeatism, favoritism), prejudice (racism, sexism). The bases are nouns (including numerous proper nouns), together with some adjectives, bound bases, and dephrasal compounds (go-it-aloneism). This use continues to be very productive.

The words in (ii), illustrate a smaller group denoting some special linguistic usage or peculiarity of speech. In the third group there is a smaller number of words used for abnormal medical conditions.

(i) –ity / -ety and –ness

These are the most common suffixes used in de-adjectival nouns with the general meaning 'quality / state of being ~'. Most words in –ity came into English as loans from French rather than being created by an English word-formation process.

Words in –ity have the stress on the syllable preceding the suffix and this frequently leads to a shift of stress relative to the adjective base as in (12) below:

(12) actu'ality, besti'ality, curi'osity, eccen'tricity, no'bility.

The stress shift affects the vowel quality- and vowel change without stress shift is seen in 'chastity', 'sicerity' etc. Velar softening applies with bases in –i.e.: electricity, rusticity, etc.

The variant –ety is found in only a smaller number of words: ‘gaity’, ‘nicety’, ‘dubiety’, ‘notoriety’. The suffix –ity is the preferred nominalising suffix for adjectives and is still productive.

The variant –ety is found in only a smaller number of words: ‘gaity’, nicety’, ‘dubiety’, ‘notoriety’. The suffix –ity is the preferred nominalising suffix for adjectives and is still productive.

Unlike –ity, -ness does not affect the stress or induce other changes: ‘clearness’ compared to ‘clarity’, ‘gentleness’ and ‘gentity’, ‘nobleness’ and ‘nobility’ etc. It also differ from ‘–ity’ in its ability to attach to bases of other word classes than adjective (‘ nothingness’, ‘oneness’, ‘whyness’), to compound adjective (straightforwardness’, ‘user-friendness’, ‘watertightness’), to dephrasal compounds (matter-of-factness). The meaning is regular, with ‘business’, ‘highness’, wilderness’. The suffix –ness can be regarded as the default suffix for forming new de-adjective nouns. It is sometimes used instead of other suffixes when the established form is temporarily forgotten (e.g. ‘sanness’ for ‘sanity’).

(j) – ment

This suffix is regarded as only marginally productive. It is of French origin and became naturalised as English. It yields nouns from French and English verb bases. It is common with verbs containing the prefixes en- / em- and be- : ‘ennoblement’, ‘embodiment’, ‘bewilderment’. The nouns that are found in ‘-ment’ have a concrete meanings (‘advertisement’, ‘embankment’, ‘reinforcement’. Some are denoting location: ‘encampment’, ‘settlement’.

(k) -ship

This suffix attaches primarily to nouns denoting person, and yielding nouns with general meaning ‘state or condition of / associated with ~’: apprenticeship’, companionship’, ‘friendship’, ‘kinship’, ‘hardship’ is an exceptional example with an adjective base.

A more specific sense found in a considerable number of words is that of office, rank, position, or of emoluments associated with such positions: 'governship', 'headmastership', 'scholarship', 'tutorship'.

The ship suffix can also carry connotations of skills or craft (e.g. man: 'craftsmanship', 'marksmanship', 'statesmanship'). This suffix is still productive, though it is not widely used.

(l) – th

This suffix is no longer productive and it is found mainly in de-adjectival nouns such as warmth, but also in one or two deverbal ones (e.g. growth). In most cases the phonological relation between base and derivative is irregular ('long' ~ 'length', 'die' ~ 'death', 'bear' ~ 'birth')

(m) – ure

Most nouns in –ure are loans. A small number of formations in English are found, such as 'composure', 'departure', 'enclosure'. This suffix is no longer productive. It is found with bound bases ('capture', 'leisure', 'treasure', verbs 'composure', 'failure', mixture'), and the occasional adjective ('rapture') and noun (candidature').

(n) Suffixes ending in –y

A number of nouns end in –y. This poses a problem as there is no evidence for analysing the word into base + suffix, while in some, the boundary between base and suffix is problematic. ('priv-acy' or 'privac-y'). There are also many places where it is difficult to distinguish between morphological and etymological analysis.

(i) –y

This is the most straightforwardly recognisable as a suffix forming abstract nouns when it attaches to free bases: adjectives, as in 'difficulty', honestly', 'jealousy'; verbs, as in 'delivery', 'entreaty', 'injury'; nouns, as in beggary', 'victory'.

(ii) –acy, -cy, -sy

The ending '-acy' is found in many nouns that are paradigmatically related to words ending in | t | ʔor | | t | + suffix. Numerous are contrasts between nouns in –acy and nouns or adjectives in –ate: privacy ~ private; accuracy, advocacy etc. Another group have the ending –cracy contrasting with –crat: 'aristocracy ~ aristocrat , and likewise bureaucracy 'democracy' etc. Other examples include : 'diplomacy' ~ 'diplomat', 'lunacy' ~ 'lunatic'. The same kind of contrast is seen for –icy in 'idiocy' ~ 'idiot' and for '-sy' in ecstasy ~ ecstatic, heresy ~ heretic, hypocrisy ~ hypocrite etc.

The suffix –g is attached to a base in t, with | ti | becoming | si | by morphological alternation, reflected in spelling as –cy or –sy. The suffix –cy also attaches to a larger group of free bases, mainly nouns denoting ranks or offices ('baronetcy', 'captaincy', 'chaplaincy' etc). The suffix –sy in 'ministrelsy' seems to be a spelling variant.

(iii) – ty

This suffix forms a small number of de-adjectival nouns such as certainty, cruelty, loyalty, safety etc.

(iv) –ery and – ry

These are regarded as variants of the same suffix, with '- ery' the common of the two- when they occur in nouns, they expresses meanings as condition (slavery), behaviour (debanchery) collectivity (machinery). Location (piggery, printery). The bases may be nouns (creamery, bigotry, dentistry); adjectives (bravery, gallantry); verbs (bakery) or bound (chivalry, sorcery). A number of nouns in –ery are in paradigmatic relation with agentive nouns in –ery are in paradigmatic relation with agentive nouns in '-er' as comparison of 'baker'~ bakery etc.

(v) –ancy and –ency

There are restricted to nouns in paradigmatic relation to a word in –ant and –ent, usually an adjective, as in such pairs as 'blatant' ~ 'blantancy', 'vacant' ~ vacancy', 'decent' ~ 'decency', but occasionally a noun, as in infant ~ infancy, vagrant ~ vagrancy. In –ance

and –ence, there are no apparent principled basis for the choice of one nominalisation over the other. In some cases both are found: 'competence' / 'competency', 'complacence' / complacency', the version with –y tends to be countable (e.g. competencies).

Two possible analysis for –ancy and –ency are noticed. One, they can be treated simply as variants of the –ance and –ence suffixes. Two, the suffix –y is added to the form in –ant / -ent, with | t | modified to | s |.

(o) Minor suffixes

There are suffixes that can be recognised as such in a small number of deverbal nouns but are no longer productive: 'laugh-ter', 'merg-er', 'hat-red', complain-t'.

(p) Phonological Modification, Conversion And Compounding.

A number of nouns are formed from verbs by shifting the stress to the first syllable sometimes with an associated change at all, arising simply by conversion (arrest, push, swallow etc.)

Nominalisations with the form of compounds commonly arise from lexicalised verb + preposition combinations : the preposition may be placed first and stressed, as in 'downfall', 'intake', upkeep' or more often, remain in second position with the stress shifted from it to the verb base, as in 'blow-out', 'make-up', 'stop-over'.

3.2.12 Plag (2003)

Plag (2003) wrote about the basic concepts that are needed in the study and description of word formation; and how it can be distinguished from the other sub branch of morphology (i.e. inflection).

What is a word ? (Plag 2003:4-9)

An attempt to provide an appropriate definition of a 'word' is a complex exercise since it requires a broader sense of perspective. There are some problems in trying to define a

word. The following summary of properties of words may help in formulating a clear notion of a word. They are presented as follows in (1):

(1) Properties of words

- Words are entities having a part of speech specification.
- Words are syntactic atoms.
- Words (usually) have one main stress.
- Words (usually) are indivisible units (no intervening material possible).

From the above properties it becomes clear that three aspects are of great help in addressing the problems encountered in defining a word. They are:

- internal integrity criterion
- syntactic criterion
- stress criterion

The ambiguity of a word by itself is a problem. The utterance of certain words may provide or refer to a number of instances.

Studying word-formation Plag (2003: 9-13)

This can be defined as the study of the ways in which new complex words are built on the basis of other words or morphemes.

Complex words are decomposed into morphemes (smallest meaningful units).

A distinction is made between bound and free morphemes. These morphemes are attached to the root / base to form or derive words. The derived word is referred to as derivative.

Three processes are discussed in order to explain the word-formation phenomena.

1. – Affixation (a process of attaching something to a base) which involves:
   i – compounding (when more than one bases combined to form a word) e.g. apartment building, green house, truck driver.

ii – concatenation (the linking together of bases and affixes as in a chain) e.g. decolonialization = de-, colony-al, -ize and –tion.

2. – Conversions (a process that do not alter the base) which involves:

i – transposition (converting nouns to verbs or the opposite) e.g. N → V

water → to waters

take a walk → to walk

ii – zero suffixation (the suffix is there but cannot be seen or heard) e.g.

– Jill has a car. Bob too.

- Jill promised Bob to buy him a car.

3. – Deletion (a process whereby some material are deleted) which includes:

i – truncation / clipping (names can be shortened by deleting parts of the base word) e.g. Ron ← (Aaron)

Liz ← (Elizabeth)

Disco ← (discotheque)

Truncation can also appear together with affixation e.g.

Mandy ← (Amanda)

Andy ← (Andrew)

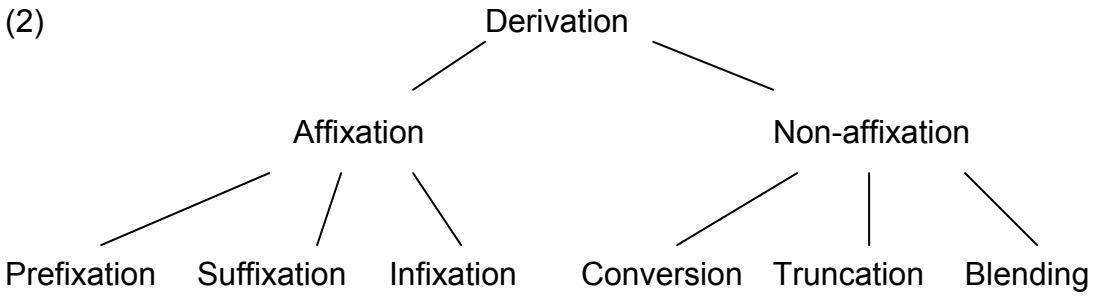
ii – Blends (this is amalgamations of parts of different words such as Smog (smoke / fog).

iii – Acronyms (blends based on Orthography) e.g. ANC, NATO etc.

iv – Simple abbreviations like USA, RSA etc.

Plag (2003:17) represented the whole derivational morphology discussed above as follows in (2) below:

(2)



Productivity (Plag 2003:44-69)

This is the property of an affix to be used to coin new complex words. Not all affixes posseses this property to the same degree, some affixes do not posses it at all.

Possible and actual words (Plag 2003:45-47)

A distinction is made between possible (potential) and actual (existing) words. A possible word is a word whose semantic, morphological or phonological structure is in accordance with the rules and regularities of the language. One of the properties of potential words is the predictability of meaning.

A more manageable definition of actual word is that 'if a word is attested in a text, or used in a conversation, by a speaker, and if the other speakers of the language can understand it, then that word is an actual word' (Plag 2003:47).

A class of actual words contains morphologically simplex and complex words. The crucial difference between actual and possible words is that only actual words may be idiosyncratic (i.e. not in accordance with the word formation rules of English).

Complex words in the lexicon (Plag 2003:47-51)

Both simplex and complex words, regular and idiosyncratic can be listed in the lexicon. Concerning the economy of storage, it is argued that the lexicon should be minimally redundant (i.e. information should be listed once in the mental lexicon and that everything predictable by the rule need not be listed).

Though non-redundence is theoretically elegant and economical, human brains do not avoid redundancy in the representation of the lexical items. The two items possible ways of representing the complex adjective 'affordable' in our mental lexicon are analyzed. They are storage with decomposition (as a whole word).

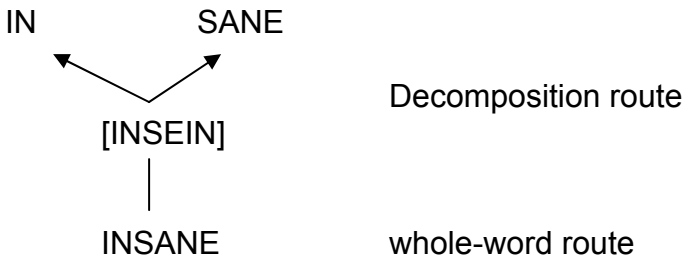
In most current models of morphological processing access to morphologically complex words in the mental lexicon works in two ways by:

i – direct access to the whole-word representation (whole-word route)

ii – access to the decomposed elements (decomposition route)

These two routes are schematically shown as follows in (1):

(1)



Frequency of occurrence plays an important role, in the storage access and retrieval of both simplex and complex words. Infrequent complex words have a strong tendency to be decomposed; while highly frequent forms, tend to be stored as whole words in the lexicon.

Concerning this argument it is proposed that the notion of non-redundant lexicon should be rejected.

Measuring productivity (Plag 2003:51-59)

A number of productivity measures have been proposed. They both reflect their advantages; some disadvantages and problems in measuring productivity. They are mentioned as:

i – quantitative measure (type frequency of an affix): The productivity of an affix can be discerned by counting the number of attested different words with that affix at a given point in time. The problem with this measure is that there can be many words with the affix, but new words are not produced.

ii – counting derivatives (dictionary-based measures): derivatives are counted with a certain affix in use at a given point in time. The newly coined derivatives (Neologisms) are problematic in determining their number in a given period.

iii – Bolinger's idea of probability: It try to estimate how likely it is that a speaker or hearer meets a newly coined word of certain morphological categories which is

impossible to investigate the entirely of all utterances in a language in a given period in time.

iv – Extent of use: It is regarded as the more fruitful way of measuring productivity. Here the token frequency of derivatives shows that hapax legomena produce the positive results. Hapaxes are regarded as reliable in measuring productivity.

Constraining productivity (Plag 2003:59-68)

Three major functions of a word-formation are distinguished. They are created in order to:

i - give a name to new concept or thing (this is referred to as labeling or referential function);

ii – syntactically recategorizing (i.e. to condence information) longer phrases or whole clauses are substituted by a single complex words.

iii – express an attitude (in this case fondness of the person or animal referred to by the derivative).

The application of word-formation rules to form new words and the use of newly coined derivatives in speech are subjected to different kinds of restrictions. These restrictions are: pragmatic restrictions, structural restrictions and blocking restrictions.

Pragmatic restrictions (Plag 2003:60-61)

They originate in problems of language use. Fashion is regarded as the first usage-based factors influencing productivity, e.g. the use of affixes like ‘mega-’; ‘giga-’ etc. result in extra-linguistic developments in society. The new lexemes should denote something nameable according to pragmatic requirement. Nameability is not well defined but may help in providing some insight. Pragmatic restrictions are best conceived as operating only on the set of structurally possible derivatives.

Structural restrictions (Plag 2003:61-63)

They originate in problems of language structure. In word-formation, it may concern the levels of linguistic analysis (i.e. phonology, morphology, syntax and semantics). Phonology, morphology and syntax are the main concern of the discussion.

i – phonological constraints: these are concerned with reference made to individual sounds and to syllable structure or stress.

ii – morphological structure: the suffix combination –'ize'-'ation' can be sensitive to the morphological structure of their base words. Word ending in suffix'-ize' can be turned into a noun only by adding '-ation'. This morphological restriction rule out conceivable nominal suffixes, such as '-ment'; '-al'; '-age' etc.

iii – syntactic properties: The suffix –able which normally attaches to verbs or the adjectival suffix –al, which attaches to noun, also shows that productivity restrictions can make reference to syntactic properties.

Blocking (Plag 2003:63-68)

This is another productive restriction that is not rule-specific. It refer to two different types of phenomena. They are homonymy blocking and synonymy blocking.

i – Homonymy blocking: It can be assigned real significance as the would-be blocked derivative is acceptable if use in an appropriate context. It is labeled an instance of the principle of ambiguity avoidance. It should be disposed of as a relevant morphological mechanism.

ii – Synonym blocking: Two forms of this type of blocking are distinguished as:

a. type blocking: (which concern the interaction of more or less regular rival morphological processes e.g. decency vs decentness); the crucial idea underlying type blocking is that rival suffixes are organized in such a way that each suffix can be applied to a certain domain. A distinction is made

between ‘general cases’ and special cases. Type blocking is at the end not encouraged and;

b. token blocking: (which involves the blocking of potential regular forms by already existing synonymous words e.g. the blocking of “*arrivement” by ‘arrival’ or ‘stealer’ by ‘thief’. Token blocking occurs under three conditions: synonymy, productivity and frequency.

The condition of synonymy states that an existing word can only block a new derived one if they are completely synonymous.

The condition for productivity says that the blocked word must be morphologically well-formed (i.e. it must be a potential word, derived on the basis of a productive rule).

Frequency as a condition is not at all trivial. It states that in order to be able to block a potential synonymous formation, the blocking word must be sufficiently frequent. The higher the frequency of a given word, the more likely it was that the word blocked a rival formation.

Affixation (Plag 2003:72-78)

Affixes may be defined as bound morphemes that attach to bases. This definition poses two problems in terms of the difference between free bound morphemes; and whether to refer to something as a base or an affix.

Concerning the first problem, it became clear that an element can occur both as part of a complex word and as a free morpheme.

In the second problem concerning the notion of affix, it is not obvious what the difference between a bound root and an affix may be. To distinguish affixes from non-affixational is not a straightforward task; but it is possible to establish the nature of a complex word as either affixed or compounded on the basis of structural arguments.

The nature of word-formation rules (Plag 2003:179-190)

Two theories are discussed in particular, the word–based and the morpheme–based approaches to word–formation. The problem that is noticed between word–based and morpheme–based morphology is best explained by drawing a distinction in the study of morphology. This distinction is between the syntagmatic and the paradigmatic axis.

On the syntagmatic and axis linguistic elements are looked at how they combine to form larger units, e.g., a word like ‘helpless‘ is analyzed as the concatenation of ‘help‘- and ‘–‘less ‘.

In paradigmatic approach, ‘helpless‘ is analyzed as a word belonging to a large set of morphologically related words, such as ‘boneless‘, ‘careless‘, ‘fruitless‘, all containing–‘less‘ as their second element and all sharing important aspects of meaning. Sets of morphologically related words are referred to as ‘paradigm‘.

These two views entail different ideas about the nature of complex words and how they are formed. They are subsumed under ‘morpheme–based morphology‘.

Morpheme – based morphology (Plag 2003 : 180–184)

In this morphology, morphological rules combine morphemes to form words .Non–concatenative morphology poses some problems for a morpheme–based approach. The theoretical consequences of morpheme–based morphology for the relationship between syntax and morphology is explored.The syntactic rules and morphological rules are the same kinds of rule and this is labeled ‘word syntax‘.

In word syntax, syntactic phrases (in the form of noun phrases) and their phrase structure rules are highlighted .In morphological rule, rules are also applicable in complex words.

The first consequence for this model would be that affixes are lexical items on par with words .Affixes would have their own independent meaning and all other properties that lexical items have.

The difference between an affix and a word would be that an affix is a bound morpheme, whereas a word is a free morpheme.

The second consequence of the word syntax model is that if words are structured like phrases, words, like phrases, need to have a head. It is assumed that in syntax all phrases have heads, e. g., a noun phrase has a nominal head, a verb phrase has a verbal head etc.

Affixes also act as heads , as they determine the syntactic category of the derived word, e.g. ‘sleepless (adjective) ‘sleep‘ (noun) – ‘less‘ (affix).The suffix (less) determine the syntactic category of the whole word.This is parallel to phrases, whose head also determine the syntactic properties of the whole phrase.

Not all affixes are heads. The difference in behavior between prefixes and suffixes is easily explained in some languages, like English. If the affix does not bear any category features, the base will provide these features with identity.

Morpheme based approaches to morphology are suited for the analysis of affixation morphology; but encounters some problems with non–affixational processes.

Word – based morphology (Plag 2003 : 184 – 188)

This is a generative grammar. In this theory, affixes do not have an independent existence and do not have entries in the lexicon. It expresses the relationship between morphologically related words by formalizing the common features of words in a morphological schema.

In this case, the relationship between the the derived words and their bases can be expressed by the schema.

The crucial difference between a schema and a morpheme–based word formation rule is that the schema does not make reference to individual morphemes, but only to whole words.

The word–based lexicon contains only words, no morphemes .What is analyzed as a morpheme in morpheme–based morphology is part of the phonological and semantic description of the set of derivative in a word–based model.

The advantage of word–based morphology is that it can deal in a uniform way with both affixation and non–affixational derivation.

Here the phonological constraints on truncations are best described as constraints on the derived forms (i.e., on the output of morphological rules).

In a morpheme–based model, phonological output constraints are unexpected.

Back–formation is another class of derivates that are being formed on the basis of paradigmatic mechanisms.

Cross–formations are also possible with prediction that emerges from the schema model. Both directions are equally well attested.

3.3 THE NOUN IN AFRICAN LANGUAGES

3.3.1 Burton and Kirk (1976)

Burton and Kirk (1976) wrote about the semantic reality of a syntactic category in Bantu Languages: the noun class. They use triadic comparisons to assess the degree to which noun class may affect judgments which people make of the semantic similarity of words in Kikuyu.

They claim that previous investigators have failed to demonstrate whether in fact noun classes have a semantic reality to the speakers of Bantu Languages. A Psycholinguistic experiment was conducted using a set of words from Kikuyu.

Burton and Kirk (1976:157) claim that every noun belongs to a noun class and that there are as many as 22 noun classes in some classification system for Bantu Languages. These noun classes correspond with noun prefixes. The prefixes for adjectives, pronouns and verbs are determined by noun class membership and this is defined by

the concordance rules. A noun class is defined as a set of nouns which share a concordance pattern of adjective, pronoun, and verb prefixes (Burton and Kirk 1976:158).

The syntactic function of Bantu noun classes is the semantic status of noun classes. Concerning the semantic reality of noun classes , linguists express conflicting opinions. Burton and Kirk (1976:158) cite Welmers (1973:159) and Hoffman (1963:169) as an example. They both deny that noun classes have meaning.

Burton and Kirk (1976:159) recommended an approach of formulating systematic interpretation of observed distributional patterns. They used Leaky's (1959) suggestion system of rank ordering in which words are assigned to noun classes partially by the qualities of being which they love; i.e. one meaning of the noun class is the rank ordering in quality of beings.

A Psycholinguistic experiment was conducted in which Kikuyu respondents were allowed themselves to judge whether members of different noun classes are semantically distinct. This approach gave Kikuyu respondents themselves to do the patterning through their responses to a triad test.

In this case foreign linguist's judgment is ignored. In the triad test, the focus was put on the effectiveness of class membership on Kikuyu classification of nouns on the basis of meaning.

Two previous experiments concerning the semantic reality of syntactic categories were conducted by Ervin (1962) and by Carroll and Casagrande (1958) who both studied "Connotative meanings of Italian genders" and "verbal forms on classification of (a) action and (b) physical objects respectively. Ervin's (1962) study differs with this approach in the use of semantic differential scales rather than triads with emphasis on connotative meaning. Carroll and Casagrande's (1958) study uses critical triads which makes it similar with Burton and Kirk's approach, but it differs in focusing on the classification of physical objects rather than on the classification of words.

Triadic comparison experiment uses stimuli that are presented to the respondent three at a time. They are often used extensively in cognitive anthropology using verbal stimuli. The triads data are consistent with the hypothesis that noun class has an effect on triad choices.

The English Kinship use suggested that it is appropriate to look for evidence that noun class is treated as a distinctive feature in Kikuyu by examining the distribution of triads choices within minimal contrast sets.

The hierarchical clustering procedure denotes that the primary distinctions to which people attend (size and phylogeny) are independent of noun class. It was concluded that Kikuyu respondents treat noun class as tertiary feature when doing semantic classification.

3.3.2 Herbert (1985)

Herbert (1985) wrote about the system of Proto-Bantu in which he discussed issues of the loss of semanticicity regarding phonological changes, cultural factors and structural factors and lastly the semantization of Bantu and gender assignment.

Initially there seems to be a great interest in the study of gender systems. As compared with other types of nominal organization, gender system is sex-gender which deals with the distinction of masculine and feminine form. The confusion of terminology is often noticed as some authors equate gender with sex-gender. The grammatical sex-gender of German and the natural sex-gender of English exploit three categories, i.e. Masculine, Feminine, and Neuter. The sex category together with features such as [animate] and [human] serves as the basis for a gender system.

The noun class languages are regarded as more complex form of gender languages as the taxonomic classes.

Historically gender and other nominal marking were separated, as in Attic Greek and Spanish languages. It was suggested that decomposition of gender and number marking is not possible in noun class languages.

A distinction is made between gender systems and noun class system. A gender system language shows three types of gender agreement (Herbert 1985:173):

i. in which nominals carry not overt marking, but gender is apparent in agreement patterns (e.g. in English's anaphoric prominalization choices use of he / she / it).

ii. in which gender is overtly signaled in the noun, but agreement patterns may be contextually suspended (e.g.Polish's verbal agreement's suspension).

iii. in which overt nominal marking occurs, but gender agreement is by reference to some other (unmarked) feature (which is more complicated).

The gender System of Proto-Bantu

Bantu languages are classified through a system of grammatical gender or noun classes. The prefix and regular association of pairs of classes indicating the singular and plural of various genders are the signs of Bantu genders. According to Herbert (1985:175), as reflected in Doke (1967), Meinhof (1932), Welmers (1973), the gender marker / noun class prefixes for Proto-Bantu are reconstructed as follows:

(1)

Singular		Plural	
1.	mu-	2.	ba-
3.	mu-	4.	mi-
5.	li-	6.	ma-
7.	ki-	8.	bi-
9.	ni-	10.	lini-
11.	lu-		/ plural in cl.10 /
13.	ka-	12.	tu-
14.	bu-		
15.	ku-		
16.	pa-		
17.	ku-		
18.	mu-		
19.	pỉ-		

20. gu-
21. gỉ-
23. gi-

No modern language exhibits reflexes of all 23 reconstructed classes. Additional subclasses may be reconstructed e.g. 1a, 2a, 2b, 8x. The above noun classes may hold the following meanings: class 20 and 21 (augmentatives) 21 (also pejorative). Class 23 (locative) and the more common classes 16, 17, 18 (locatives). Class 19 (diminutive prefix). The plural is formed from the basic classes. Classes 1-15 are the core of the Bantu gender system.

Alliterative as the concordial system is one of the characteristics of Bantu Languages.

According to Herbert (1985:176) the semantic content for the Proto-Bantu gender classes is difficult to conclude. There is an assertion that modern language classes are devoid of semantic content. But Herbert (1977) and Richardson (1967) maintain that gender system of the Proto-language was semantically-based system of categorization.

To broaden the above views Herbert (1985:176) summarizes Doke (1967)'s observations about classes in southern Bantu reflecting the following semantic content:

Class

1/2: human beings

3/4: spirits, diseases, trees and plants, some animals, some body parts, Some rivers, some abstract nouns.

5/6: fruits, miscellaneous nouns.

7/6: pairs, fluids, certain abstract.

7/8: material objects and instruments, acts, person regarded as inferior (on account of size, trade, physical defect), languages and customs.

9/10: animals

13/12: diminutives (when it occurs)

14: abstracts

15: infinitives.

Doke'S (1967) observations are compared with Whitely'S (1961) description of class content in Yao language as follows:

Class

1/2: human beings

3/4: trees, wooden objects, foods, natural objects, animals
Some connotations of large size.

5/6: persons, animals, birds, fruits, natural features, some connotations of large size.

7/8: animals, birds, objects, persons with marked characteristics.

9/10: animals, fruits, natural phenomena, objects.

11/10: long thin objects also those with opposite quality, insects,
Most fruits, some abstract.

13/12: diminutives

14/6: objects, insects, animals, fruits, collectives, abstracts.

15: infinitives.

What makes the task of semantics reconstruction difficult is the disagreement among the various Bantu Languages in terms of the class of an inherited lexical item.

As opposed to Denny and Creider (1976)'s proposal of 'Configurational extendedness', Herbert (1985:177-178) cite Givon (1971)'s Hypothesis which reflect a system for Proto-Bantu as follows:

Class

1/2: human

3/4: plants

5/6: fruits

6: liquids

7/8: inanimate

9/10: animals

11/10: elongated object set

14: masses

15/6: paired body parts

15: infinitives

The loss of Semanticity

There is a strong suggestion that the semantically-based natural gender system of Proto-Bantu's downfall was the result of phonological changes, cultural factors and the structural factors.

Phonological changes

The confusion of segmentally identical prefixes of the gender classes may result in merger, both morphologically and semantically. The partial identity of class 1 and 3 (mu-) is an example. The absence of independent plural form of class 11 and the unusual pairing of it with plural class 10/6 is another problem. Phonological similarity of class 11 *lu- and class 5 *li- may be responsible for the variation of 5/6. The confusion of class 5*li- and class 11 *lu- is cited by Hinnebusch (1973), Kunene (1979).

Herbert (1985:179) found that in Doke (1967)'s report 'class 5 and 11 has merged in some southern Bantu Languages; like Tsonga, Northern and Southern Sotho, but in other languages nouns in class 11 may take their plurals in both class 6 and 10, sometimes with slightly different meanings:

Cultural Factors

The breaking down of the natural gender system may be attributed to a number of factors, like migration in which Bantu speaking peoples would be introduced into new cultural roles. Religious symbolism or ritual practices may no longer be so. The pre-existing lexical item is employed for naming new object.

The constant meeting of Bantu speaking people with non-Bantu speakers in their migration. Linguistic assimilation between both parties was the result. Lanham (1964)'s work is cited; that the influence of Khoisan (Bushman and Hottentot) languages on Southern Bantu Languages e.g. Xhosa and Zulu vocabularies are borrowed from

Khoisan contact languages. Borrowed words is another source for semantic decay in the gender system. Two borrowing strategies are distinguished, i.e. phonological allocation of gender and the allocation on semantic bases.

Structural Factors

There are two factors in the gender class system which are relevant in exploiting structural tendencies i.e. the motion phenomenon and the use of certain examples of this phenomenon to verify the semantic basis of the gender system, i.e. class markers.

Nouns referring to human beings may be in certain languages moved to a non-human gender. Classes like 7/8 or 9/10 for semantic pejoration. Herbert (1985:182) cited Doke (1967)'s examples of affective gender use from Shona.

Augmentative:	Class 5 and 21 (plural class 6)
Diminutive:	Class 13 (plural class 12 or 14)
Derogative half-sized:	Class 7 (plural class 8)
Long-shaped:	Class 11 (plural class 10)
Monstruous:	Class 3 (plural class 4)
Abstract:	Class 14

The second source for semantic decay in the gender system lies in the concord system. There is non-identity between the class of a noun and the concord prefixes it generates. The personification of animals within Bantu and Niger-Congo which involves names that occurs in class 9/10 and in certain languages in 1/2.

The Semanticization of Bantu Gender

The development of Bantu gender system from natural gender to lexical gender is noticeable, i.e. from semantically based system to a morphosyntactic one. Two types of changes within the gender systems are noticed. This involves changes within concordial system, and changes within the gender class prefix system.

Concord

Herbert (1985:186) presents the formulation of the concord system principles to the more developed one as follows:

A. Concord is determined by the overt gender of the governing noun.

B. Concord is determined by the overt gender of the governing nominal unless 1/2 concord is employed.

C. Concord is determined by the overt gender of the governing nominal unless it denotes a [+ Animate] being, in which case 1/2 concord is employed.

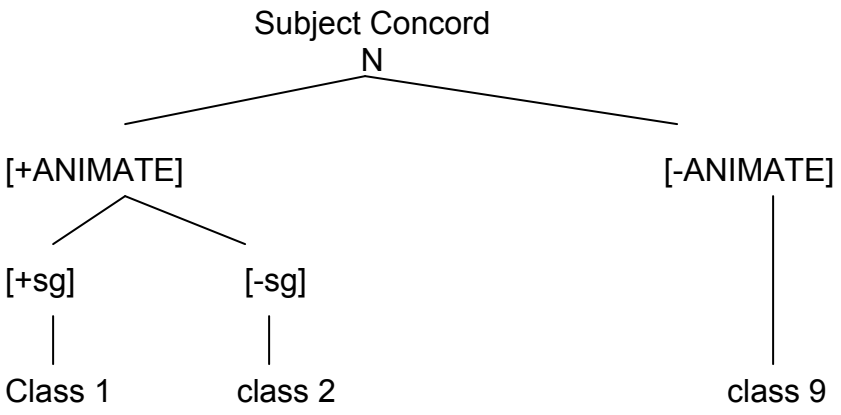
The comparative languages concerning this developed principle are Lurale, Umbundu and Standard Swahili, which involves class 5/6 as augmentative gender and 13/12 as diminitive gender.

Gender Assignment

According to Herbert (1985:187) 'restructuring within the gender system comes from Urban varieties of Bantu Languages used as a lingue franche'. He cites Alexandre (1967) in Ewando populaire'Bantu class 1/2, 3/4, 5/6, and 9/10 replaced by 9/2 to show the distinct features of [+/- Animate]. The feature [Animate] is employed to distinguish two plural types.

Herbert (1985:188) observed that human-denoting nouns are migrating to classes 1/2 (or 1a/2a) in certain varieties of Swahili. That the application of 1/2 concord for [+Animate] nouns is regular in Swahili where as in certain dialects a single prefix i- (class 9) is used for all [-Animate] concords.

The distinction between these two features is represented as follows:



Data concerning migrations of human-referring noun to class 1/2 gender is limited, but this does not counteract the idea that gender prefixes are stable features of Bantu Morphology.

Regarding the question of reanalysis of the gender system, there is an observation that the concord is the defining feature distinguishing gender system from classifier systems. This is noticeable in the case of languages without nominal marking.

According to Herbert (1985:190) ‘ the new gender system is significantly simpler than that reconstructed for the proton language in terms of the number of genders and also the features used for classification.

Herbert (1985:191) proposed two operational principles to curb a situation in which non-agreement between nominal gender and concords is observed. They includes:

(i) Proximity or linear order (where the relative placement of conjuncts determined agreement patterns.

(ii) Hierarchization (where one gender dominates another for agreement purposes).

In the Bantu languages, there is a conflicting problem within noun phrases regarding the rules of gender. Doke (1980)’s study of Zulu and Venda languages is cited for this matter. In both languages, class 2 concords are used for conjoined noun phrase sharing the feature [+ Human]. Where as in Zulu class 10 concords are used to conjoined nouns

denoting animals, but in Venda, class 8 concords are used (not those of class 10, “the animal class”).

It appeared that a feature such as [Animate] is basic in any development of a hieraachized gender system. Animacy is the basic parameter determining splits within morphological systems.

3.3.3 Danny, Creider (1986)

Danny and Creider (1986) wrote about a reputable methodology to present evidence to support the claim that Proto-Bantu noun prefixes realized a semantic system. This claim came after Richardson (1967) states that no method is reputable to prove that nominal classification in Proto-Bantu was indeed widely based on conceptual implication. There is a claim that the bulk of the noun prefixes were associated with configurational or shape meanings.

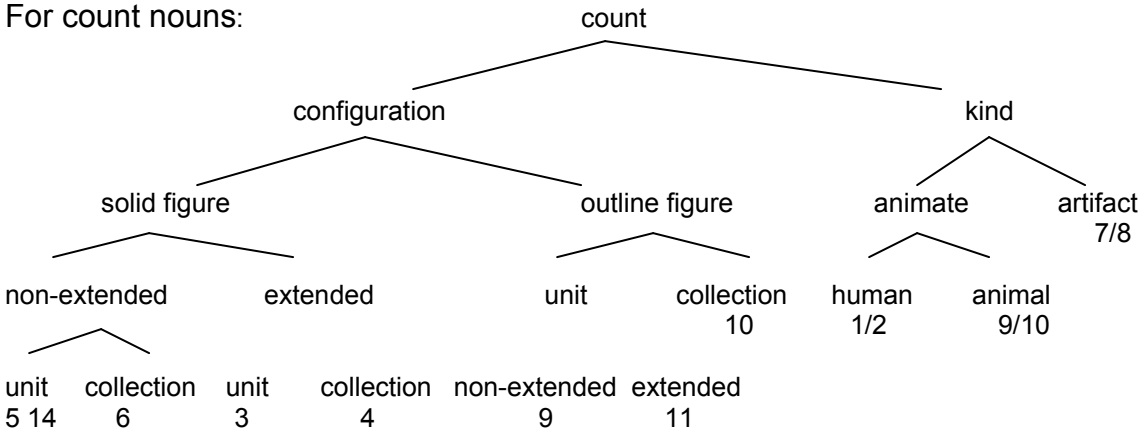
Two sorts of evidence is presented to show that systems encoding meanings of this type are common among language of the world, i.e. direct and indirect evidence. The direct evidence comes from scrutiny of Proto-Bantu vocabulary. Guthrie (1971)’s constructed forms that are present in Proto-Bantu is used as first data set. Those common Bantu forms entails concrete and abstract nouns. The indirect evidence consists of noun classifier sets found in other languages throughout the world. It was shown that these sets are structured in terms of meaning distinctions which are the same as those of the PB system.

Direct Evidence : An Examination of PB vocabulary.

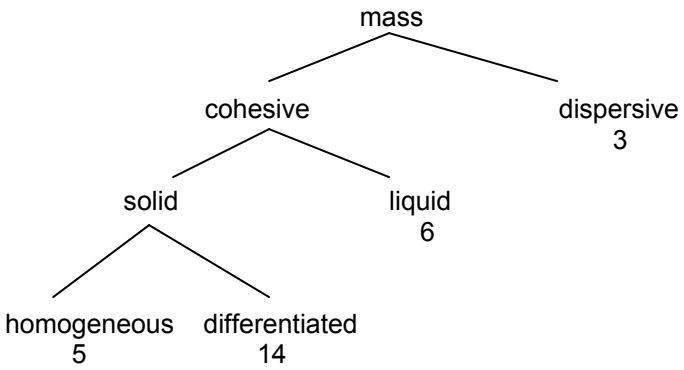
Danny and Creider (1986:218) separate count nouns from mass nouns by providing a proto-Bantu noun class semantics diagrams in which four classes are discussed in figure 1, below:

Figure.1. Proto-Bantu noun class semantics

For count nouns:



For mass nouns:



There is a comparison between the terms ‘extended’ and non-extended configuration. This configuration is furthered by the contrast between ‘outline’ and ‘solid shape’, which deals with objects which differentiate between an outside and an inside. In order to be able to define an interior, an outline must be curved.

The four configurational classes (i.e. 5/6, 3/4, 9/10 and 11/10) were used for the semantic interpretations. The first step was to place concrete nouns and those which are problematic and the characteristics which might account for class membership are indicated in the brackets. Then abstract nouns were listed with comments.

Non-extended solid figure class, 5/6 contains independent object, protrusions and also small circular objects. The problematic cases includes protruding body parts like cheek and buttock.

The extended solid figure class 3/4 contains wide variety of lengthy items. The problematic cases include two body parts, head and forehead.

The class 9/10 is satisfied by a variety of things. All kinds of rigid and flexible containers are included. The outline and interior configuration of 9/10 is satisfied by anything with space in its interior and different geographical space of which ground, open space, path are seen. Objects with a shell and some insides like seed. The problematic cases in 9/10 were found to be body parts like abdomen and kidneys which were viewed as containers.The extended outline shape of items in 11/10 is curve to show an interior of some kind, like crust, fingernail to define an interior.

According to Danny and Creider (1986:223) , Guthrie (1971) suggests that of the four major configurational classes, 11 is more developed than 5,3,or 9. With kinds for count noun on the side of the system, class 3/4 in PB present the human meaning and overwhelming majority of animals are located in class 9/10.

Danny and Creider (1986:223) proposed that more work needs to be done on kinds in the Bantu system concerning the following possibilities:

i. The animal class 9/10 to be related to the configurational class 9/10 (Non-extended outline).

ii. the human class 1/2 may be developed from the extended class 3/4 (as Guthrie (1971) reconstructs both the class 1 and 3 prefixes as *mu-).

iii. There may be other classes represented on the kinds side as well as the configurational side of the system: 1/2 human, 9/10 animals, 3/4 plants, 5/6 fruits, 7/8 artifacts:

Mass nouns fall under the classes for which constitute a semi-independent sub-system. They mostly fall into class5, 14, 6 and 3 in the present data set. The mass sub-system shows that there is a relationship with those in the count system.

Danny and Creider (1986:224) mention the three distinctions between the mass-sub-system:

1. Cohesive / dispersive, is related to the non-extended / extended factor for count nouns.

2. Contrast between solids and liquids which can be related to the count noun factor, unit collection.

3. Distinction between homogeneous and differentiated substances (all which cohere and have relatively fixed internal arrangements).

Some hypotheses which have been set to show the kind of questions that might be studied in more recent Bantu cultures. This was done by an exhaustive treatment of class 3, which covers all the items given in Guthrie's starred forms list.

Indirect Evidence: Other noun Class Systems

Danny and Creider (1986:227) cite three systems of three languages, Toba, Ojibway and Burmese to show and compare noun class system with Bantu. It was noted that all three systems employ one of the configurational variables found in the Bantu system, extended / non-extended. To compare these noun class systems with Bantu has shown that major semantic features of the Bantu classes, configuration / class, solid/ outline, extended / non-extended, artifact / animate, are found in noun class systems in a variety of language families. The comparative evidence will show that the four languages shows four stages in the development of classifier systems:

i. Toba = Configurational classes only.
ii. Ojibway = Configurational, artifact classes.
iii. Bantu = Configurational, artifact and animate classes.
iv. Burmese = Addition of special classes for humans of differing social status.

3.3.4 Mufwene (1987)

Mufwene (1987) wrote about Bantu class prefixes as derivational. In his study he used Swahili, Kikongo, Yansi and many more Bantu languages to show that the noun class prefixes are not inflections (showing 'number' for nouns they delimit), they are also derivational markers.

A number of preliminary studies are scrutinized in details.The notion of noun class has been defined as 'one of the distinct patterns of prefix agreement that a particular language may have' (Mufwene 1987:246). This notion was linked to the Indo-European formal gender system in which the Niger-Kordofian noun class languages possess other partial semantic correlations.

According to Mufwene (1987:246) quoting Welmers (1973), these semantic correlations are the nouns denoting humans in class 1/2 (mu-/ba-), those denoting mass and liquids in class 6 (ma-), those denoting objects occurring in pairs 5/6 (li-/ma-) those denoting other objects in class 7/8 (ki-/bi-), abstractions in class 14 (bu-), and formal infinitival deliminations in class 15 (ku-).

The arbitrariness of the matter appears from the varying of class membership from language to language and in the same language little semantic justification can be given for assigning mass and abstract nouns to more than one class.

'Noun class membership is identified through a particular prefix which the noun must take (even zero prefix) and which governs a number of concord prefixes that must be carried by the (quantifier), adjectives, connectives and pronouns associated with the head noun as well as by the verb which the noun commands as subject (Mufwene1987:246).

Bantu noun class prefixes have also been attributed a number-inflectional role. A pair of prefixes is a result of when a nominal stem is count and indicate through their contrast the opposition singular versus plural. Semantically mass noun stem takes a prefix which corresponds to that of plural count nouns. Classes 6, 13 or 14 are mostly examples, but they also occur in other classes such as 11. (Mufwene 1987:247).

Welmers (1973) and Doke (1954) are quoted claiming that the Bantu class prefixes also play a derivational role. They both agree that different prefixes with the same stem may mean something much for reading than a mere change of member.

Bantu Class Prefixes as Derivational (Mufwene 1987:218-254)

Mufwene made a distinction between primary and secondary derivations. In the primary derivation, the prefixes of classes 1-15 combine immediately with the stem. The mass abstract nouns are derived from adjectives. The prefix delimit the stems. In Yansi an analog to this derivation is offered to show nominal derivatives with general meaning "Manner of v---ing. The prefixes supplied from the illustration of both the languages Yansi and Swahili show that noun class prefixes are in themselves parts of derivational markers of the deverbal nouns.

Lingala, Swahili and Yansi are cited to show how the token of Noun vs Noun derivational pairs (in which neither an adjective nor a verb are involved). It can be noted that in both these languages regarding their derivations that the same stems with the same core meaning are assigned two different class memberships and sets of prefixes, depending on what other kinds of semantic materials are added to them. These class prefixes are referred to as actualizing the noun.

Regarding those interpretations, the class prefix change determines the way in which the actualization of a stem is to be interpreted. The prefix appears to be the sole identificational mark of the derived stems.

Some derivations may involve a longer series than a pair. In this instance Homburger (1929) is cited giving an account of Swahili, Lingala, Kikongo and Zulu. She shows that the derivations involving longer series obtain more easily and in larger numbers when a verb is involved, e.g.

a.	Mu-/ ba- ntu	'person'	ba-ntu	'humanness'
	ka-/tu-ntu	'small person'		

b. Mu-/ba-kazi 'woman' bu-kazi 'feminity'
ka-kazi 'small woman'

This shows that aside from assigning formal class membership to the particular use of the stems they combine with and showing their number delimitations, the class prefixes play a derivational role. Individuating derivations from basically MASS NOUNS are a better case for the derivations for the derivational interpretation of Bantu class prefixes.

Lingala and Kikongo languages are used in back formations, the prefixes li- or di- assign to the stem a dimunitive reading. The change of the prefix attest to the derivational role of the class prefix.

In the Secondary derivation, the process of Pre-prefixation builds the new meaning from a previously delimited noun. This happens from the fact that prefixes do not form a homogenous group. The prefixes of classes 16-23 combine as pre-prefixes (due to locative, diminutive, augmentative status of those classes). The noun class prefixation is only bound by the semantic-combinational possibilities of the prefixes.

The preference of the Bantuists to treat Locative prefixation (pre-stem material) as prefixes rather than prepositions and the interpretations they convey, shows that class prefixes play a derivational role.

3.4 THE NOUN IN SESOTHO

3.4.1 Aim

The noun in Sesotho will be discussed below with regard to four issues: the various noun class prefixes, the locative suffix, the expression of gender by means of affixes, and lastly, the expressive derivations with the dimmunitive and augmentative suffixes.

3.4.2 Noun class prefixes

Class 1/2 : [mo-/ ba-]

The prefix of class 1 is mo- and that of class 2 is **ba**-. The reference of these noun classes is always only to humans:

	Class 1	Class 2
(1)	Motho (person)	batho (persons)
	Moshanyana (boy)	bashanyana (boys)
	Mosadi (woman)	basadi (women)
	Monna (man)	banna (men)
	Morwetsana (girl)	barwetsana (girls)

(a) Phonologically derived variant: [m- < mo- b-]

Nouns may be readily derived from verbs. If such verbs have an initial **b** in its stem, it is possible that some assimilation may occur between the prefix **mo**- and this consonant **b**:

(2) mo- b- → mm-

However, this assimilation is not compulsory and the non-assimilated form also occurs:

(3) boka (praise):
Moboki or mmoki (praise singer)
bona (see):
Moboni or mmoni
busa (govern):
Mobusi or mmusi (governor)

The plural of these nouns in class 2 will only accept the stem with **b**:

Moboki = baboki
Moboni = baboni

(b) Irregular morpheme

These are some very old nouns in which the prefix **mo**- of class 1 has changed to **ngw**- under the influence of the initial vowel –**a** of the stem:

(4) Ngwana (child)
Ngwanana (girl)
Ngwale (girl initiate)

The change of **mo**- to **ngw**- only appears in these three nouns. More recent derivations from verbs show no such change:

(5) mo-ah-i (builder) from the verb aha (build)

The plural of these three nouns above appear in class 2 but with the elision of one of the **a**- vowels:

(6) ba- ana → bana (children)
ba- anana → banana (girls)

The noun **ngwale** may also have this plural: ba- ale → bale. But there is a tendency to put this noun nowadays in class 9 with the plural in class 10:

	Class 9	Class 10
(7)	Ngwale	dingwale

There are two other nouns which reflect some irregularity in class 2:

(8)	Mong (owner)	bêng (owners)
	Monghadi (mister)	bênghadi (misters)

It seems as if the nominal stem in these two nouns should have been –**eng**. In class 1 the **e** of **eng** would then be deleted while in class 2 the prefix **ba**- may have assimilated with **e** of **eng** to **be**:

(9) ba + eng → bêng

(c) Irregular plurals

A few nouns which appear in class 1 with the prefix **mo-** do not have the prefix **ba-** of class 2:

Class 1 / 6: mo- / ma- :

Class 1	Class 6
Morena (chief)	Marena (chiefs)
Mofumahadi (wife of a chief)	Mafumahadi (wives of a chief)
Mofutsana (poor person)	Mafutsana (poor people)

Class 1 / 4 : mo- / me-

Motswalle (friend)	Metswalle (friends)

Class 1(a) / 2(a) [-/bo-]

These two noun classes are usually regarded as subclasses of class 1/2 because they have exactly the same agreement morphemes on the verb and the nominal modifier as class 1/2 :

(10) Class 1: Mosadi o- a- sebetsa
(The woman is working)

Class 1(a): Mme o- a- sebetsa
(My mother is working)

Class 2: Basadi ba- a- sebetsa
(The women are working)

Class 2(a): BoMme ba- a- sebetsa

(The mothers are working)

In (10) above the subjectival agreement morphemes are **o** and **ba**. The prefix of class 1(a) is not represented by any morpheme while the prefix of class 2(a) is **bô**-. This prefix

is irregular because it has a vowel **ô** which does not occur in any prefix. This vowel **o** is related to a pronominal root **o** which regularly appears in the African languages. In Xhosa one may find this root in prepositional agreement:

(11) Class 2: [ba + ô = bô]: nabo
(with them)

In Sesotho the same **bo** appears in the quantifiers such as **bona** (< ba + ô + na) or **bohle** (ba + o + hle). The reference of this prefix **bô** is also different from other classes because it may have reference to a group.

Class 3 / 4 [mo- / me-]

The noun class prefix of class 3 is **mo**- which has the same form as the prefix of class. The plural of class 3 is class 4 **me-**:

	Class 3	Class 4
(12)	Mollo (fire)	Mello (fires)
	Moriti (shade)	Meriti (shades)
	Mose (dress)	Mese (dresses)
	Molala (neck)	Melala (necks)
	Motse (village)	Metse (villages)
	Mohatla (tail)	Mehatla (tails)

(a) Phonologically derived variant

There are various problems with the prefixes of class 3 and class 4 with the result that some allomorphemes of these classes may be recognized:

(i) As in the case of class 1 there is some assimilation in class 3: **mo**- with nominal stems which appear with an initial consonant -**b**. In such a case the prefix of class 3 will only be **m-**:

(13) a. [mo- b- → m- m-]

b. Mmala (colour)
Mmele (body)
Mmêlê (teat of an animal)
Mmila (road)
Mmuso (government)

The assimilation above is also found in class 4:

(14) [me- b → m-m-]

This will mean that class 3 and class 4 will have the same prefix **m**- in these circumstances. To distinguish between class 3 and class 4 will then necessitate some contextual information. However the prefix of class 4 **me**- may also appear but then without any assimilation:

	Class 3	Class 4
(15)	Mmele	Mmele, mebele
	Mmila	Mmila, mebila
	Mmala	Mmala, mebala

(ii) The same allomorpheme [m-] as above may appear when the nominal stem has an initial[-m-]:

(16) [mo-m- → m-m-]

This allomorpheme may also appear in class4:

(17) a. [me-m- → m-m-]

b.

Class 3	Class 4
Mmenô (hem)	Mmenô
Mmasa (dye from a tree)	Mmasa
Mmetso (throat)	Mmetso

Thus there is no difference in from between class 3 and class 4 in the above examples.

(b) Irregular morphemes

[m- / me-]:

The allomorpheme [m-] appears in class 3 in the following two nouns which have an initial **m** in their stem as in (16), but in class 4 the prefix [me-] appears but then the nominal stem looses its initial consonant **m**:

(18)	Class 3	Class 4
	Mmômo (leg)	Meomo
	Mmopo (bridge of nose)	Meopo

[m-]:

There are two other exceptional nouns with the allomorpheme [m-]:

(19) Môya (wind)
Môkô (marrow)

Only **Môya** has a form in class 4 but this form is also exceptional:

(20) Mêya (winds)

[ngw-]:

There is also one other exceptional noun in class 3:

(21) Ngwaha (year)

This noun orginated from the prefix [mo-] with a stem [-aha]: [mo-aha → ngwaha]. However, the prefix has now become part of the stem because the prefix of class 4 will appear with this new stem:

(22)	Class 3	Class 4
	Ngwaha (year)	Mengwaha (years)

Class 5 / 6 [le- / ma-]

The prefix of class 5 is **le-** and that of class 6 is **ma**-:

	Class 5	Class 6
(23)	Leru (cloud)	Maru (clouds)
	Lesea (baby)	Masea (babies)
	Lehe (egg)	Mahe (eggs)
	Leshodu (thief)	Mashodu (thieves)

(a) Irregular morphemes

There are two exceptional nouns in class 6:

(24) Leino (tooth) = mêno
Leihlo (eye) = mahlo

[Ø- [ma-]

It frequently happens that it is not necessary to use the prefix of class 5, especially when some nominal modifier appears as complement of such a class 5 noun:

(25) i. Lesaka la dikgomo
ii. Sakeng la dikgomo
(In the cattle-kraal)

(b) Irregular plurals

There are some nouns in class 5 / 6 which originally appeared in class 11 with the prefix [lo-]. Those nouns occurred with a class 10 prefix [din-]. Class 11 no longer appears in Sesotho and most of these nouns appear in class 5. Some of these nouns retained a plural with class 10 in addition to the plural with class 6:

(26)	Class 5	Class 6	Class 10
	Lehopo (rib)	Mahopo (ribs)	Dikgopo (ribs)
	Lenaka (horn)	Manaka (horns)	Dinaka (horns)
	Lenala (nail)	Manala (nails)	Dinala (nails)
	Lepheo (wing)	Mapheo (wings)	Dipheo (wings)

Class 7 / 8: [se- / di-]

The prefix of the class is **se**- while that of class is **di**-:

(27)	Class 7	Class 8
	Selepe (axe)	Dilepe (axes)
	Seeta (shoe)	Dieeta (shoes)
	Sefate (tree)	Difate (trees)
	Sekolo (school)	Dikolo (schools)

Class 9/10 [n-/din-]

The prefix of class 9 appears as [n-] with monosyllabic stems only. This prefix [n-] may have different forms depending on the initial consonant of the stem:

(28) a. [n→m] with labial consonants:
[m-pa] (stomach)
[m-pho] (gift)

b. [n→✸] with palatal consonants:
[n-tja] (dog)

c. [n→n] with alveolar consonants:
[n-tlo] (house)
[n-tho] (thing)

d. [n→ŋ] with velar consonants:
[n-ku] (sheep)

[n-ko] (nose)
[n-kgo] (waterpot)

With polysyllabic stems this prefix [n-] disappears but Sesotho does allow for the presence of a nasal prefix which may appear in an abstract form as [N-] because there is ample evidence of a phonological process known as nasalisation which is brought about through the presence of a nasal. This nasal influence can clearly be seen in the derivation of nouns from verbs in class 9. The following initial sounds of the verb will change under the influence of this nasal prefix [N-]:

(29) a. [b→p]:
potso (question) < botsa
pina (song) < bina

b. [f→ph]:
phaolo (castration) < faola
phepo (feeding) < fepa

c. [h→kg]:
kgailo (grinding) < haila
kgamo (milking) < hama

d. [hl→tlh]:
tlhabo (slaughter) < hlaba
tlhakolo (cleaning) < hlakola

However, the stem with **hl** does not need to change, i.e. the nasal may have no influence on the stem:

hlabo < hlaba
hlakolo < hlakola

It is also apparent in non-derived nouns in class 9:

hlapi (fish) hlahlobo (examination)

e. [j→tj]:
tjaro (carrying) < jara
tjeso (damage of cattle) < jesa

f. [r→th]:
thaho (kicking) < raha
thato (will) < rata

g. [s→tsh]:
tshebetso (use) < sebetsa
tshenyo (damage) < senya

h. [sh→tjh]:
tjhapo (flogging) < shapa
tjhebo (look) < sheba

i [vowel → k + vowel]:
karabo (answer) < araba
ketso (deed) < etsa
kimollo (relieving) < imolla
kutso (theft) < utswa
kotlo (beating) < otla

The prefix of class 10 will add [di-] onto the prefix of class 9 so that the prefix of class 10 will be [din-] with monosyllabic stems and [diN-] with polysyllabic stems:

(30) **Monosyllabic stems:**

Class 9	**Class 10**
nko (nose)	dinko
mpa (stomach)	dimpa
ntwa (war)	dintwa

Polysyllabic stems

Class 9	**Class 10**
podi (goat)	dipodi
hloho (head)	dihloho
thaba (mountain)	dithaba

Class 14 [bo-]

The prefix of the class is **bo**-:

Regular morpheme:

(31) Boima (weight)
Bohobe (bread)
Bosiu (night)
Boroko (sleep)

Irregular morpheme:

In some cases the appearance of the class 6 prefix **ma**- will give rise to a reference of groups:

(32) Jwang (grass) → Majwang
Jwala (beer) → Majwala
Boroko (sleep) → Maroko

Plural in class 6:

In some cases where the class 14 noun has a concrete reference, a plural with class 6 prefix **ma**- may appear in the place of the class 14 prefix **bo**-:

(33) Bosiu (night) → Masiu
Bohobe (bread) → Mahobe
Bodiba (pool) → Madiba

Borikgwe (trousers) → Marikgwe

Borogo (bridge) → Marogo

Class 15: [ho-]

The class 15 prefix **ho**- only appears in derivations from verbs. There is no non-derived class 15 noun in Sesotho. The derivation with the verb is also known as the infinitive:

(34) Ho- sebetsa (working)
Ho- bina (singing)

Locative class nouns

There are three locative class prefixes: **pa**-, **ku**- and **mu**-.These prefixes no longer function in Sesotho. Where remnants of these locative prefixes do appear, they are now regarded as fossilised:

(35) Class 16: fa-: fatshe (below)
Class 17: ho-: hole (far)
Class 18: mo-: morao (back)

3.4.3 Locative

There is a locative noun in Sesotho which may be divided into three classes depending on the form of the locative noun:

The old locative class nouns

The locative class nouns are 16, 17 and 18 in Sesotho. These nouns shows fossilised prefixes and they are no longer function as prefixes:

(1) Fatshe (down)
Tlase (underneath)
Morao (back)
Hole (far)
Hare (middle)

Teng (there)
Haufi (near)
Hodimo (above)
Ntle (outside)

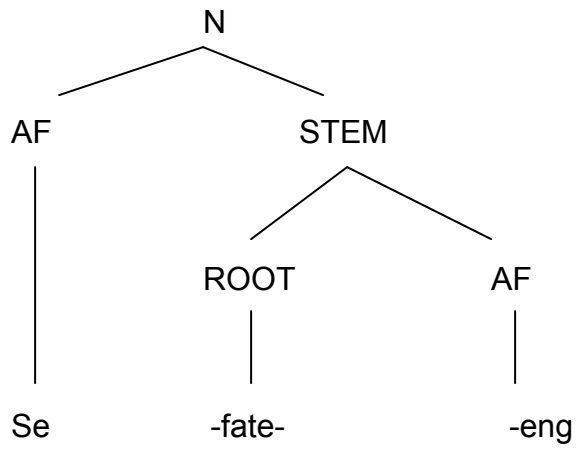
These locative nouns have the same agreement morpheme [ho-] which also appears in nominal modifiers with these nouns such as the possessive [ho- + a → ha]

The locative suffix [-eng]

The locative suffix [-eng] can be suffixed to most nouns in Sesotho:

(3) a. [Sefate + eng → Sefateng]

b.



Some nouns such as those in class 1(a) may not appear with a locative morpheme.

Place names

Most place names do not appear with any locative morpheme:

(4) Lesotho, Maseru

The meaning of the locative

The meaning of the locative noun in Sesotho is dependent on specific discourse contexts as well as on the meaning of the verb with which it may appear. The following meaning may be established for the locative noun:

Direction

(5) a. Eitse hoba a- je, a- tsamaya ho- ya [ka tlung ya hae]
(After she has eaten, she went to her house)

b. Mosito a- fela a- wela [lerabeng lena] ka pele.
(Mosito quickly fell into this snare)

Distance

(6) a. Hoja ke- se- thijwe ke sepolesa sa Mangaung nkabe ke- le [hole hampe] hona jwale.
(If I was not stopped by the police at Bloemfontein, I could have been very far just now)

b. Ka-re ha nka- fihla teng feela, ho- tla- be ho-se ho- le [haufi]
(If I could just arrive there, it should be near)

Exclusion

(7) a. Baholo ba mohlankana ha ba- mmona a- etsa hoo, ba- rera [ka ntle ho yena] ho- mo- batlela mosadi.
(When the elders of the young man saw him doing that they decided without him to look for a wife for him)

b. Yare [bakeng sa hore ba-nkarabe], ba-ntja ditsheho.
(Instead of answering me, they laughed at me)

Location

(8) a. O- se- ke wa- itshwenya ka ntlo hobane ke- se ke- e- fumane [toropong]
(Do not worry yourself about a house because I found one in town)

b. A- hloka sebaka sa ho- baleha, yaba o- ipata [tlung e nngwe]
(He did no have an opportunity to run away and he hid himself in another house)

Manner

(9) a. [Maikutlong a hae] o- ne a- re o- ba jwaleka Thebe.
(According to his view he was saying he was like Thebe)

Quantifier

(10) a. E mong [hara bona] a- re: Ntho ena e- se- ke ya- bolawa.
(One of them said this thing should not be killed)

b. E moholo [baneng kaofela] e- se e- le Monyane.
(The biggest one all the children was Monyane)

Recipient

(11) a. Lerato la hae le- bile leholo haholo [baneng ba sekolo]
(Her love was very big for the school children)

b. Ba- botsa [metseng yohle]
(They asked all the villages)

Source

a. Ha a- etswa [tlung eo], a- tsamaya a- eya moreneng.
(When he came out of that house, he went to the chief)

b. Ba-kgutlile [motseng]
(They came back from the village)

Theme

(13) a. Tumelo ya hae [dingakeng tsa meriana ya Sesotho] e- ne e-hlile e- fokola.
(His belief in Sesotho doctors diminished)

b. Ka mora nako e- itseng ba- fihlile kwano, ha- eba le dintwa tse ngatanyana [pakeng tsa bona le Basotho]
(After a certain time that they arrived there, there were many wars between them and the Basotho)

Time

(14) a. [Hona nakong eo] ba- fihlile.
(They arrived at that precise time)

b. [Motsotsong ona] bohloko bo boholo ba-rothela kahare ho pelo ya hae.
(At this time a huge pain dropped in the middle of his heart)

3.4.4 Gender

There is a rule which derives feminine correlates from unmarked masculine nouns e.g. **tau** (lion) is unmarked masculine while **tauhadi** is marked as feminine because of the feminine affix**[-hadi**].

However, there are also marked masculines such as **monna** (man) or **moshanyana** (boy) whose gender cannot be changed. They must be distinguished from unmarked masculines such as **morutwana** (student). The features feminine and masculine are thus needed.

(15) Monna [- Feminine, + Masculine]
Morutwana [+ Feminine, + Masculine]

The derivation rule with the feminine suffix [-**hadi**] distinguished those masculine nouns which may be feminized from those which may not. Unmarked masculine nouns share a feminine rule as the following:

(16) [+ Feminine, + Masculine] → [+ Feminine, - Masculine]

This rule resets the value [+ Masculine] in the context [+ Feminine] to [-Masculine]

The rule in (16) above may appear in the following instances in Sesotho:

The morpheme [-hadi]

The morpheme –**hadi** is a suffix of the noun in Sesotho and it may appear with the following nouns:

a. **Animals**

(17) Tau → tauhadi (lion)
Tlou → tlouhadi (elephant)
Nkwe → nkwehadi (leopard)
Kgama → kgamahadi (red hartebeest)

b. **Humans**

The suffix [-**hadi**] appears infrequently with the nouns denoting humans and only a few nouns are apparent with the morpheme:

(18) Mohwe → Mohwehadi (in-law of a man)
Morwa → Morwahadi (Bushman)

The morpheme [-(H) atsana]

This morpheme is evidently a compound morpheme from [-**hadi**] and diminutive [-ana], i.e. [-**hadi + ana → hatsana**]. This morpheme appears frequently with nouns denoting animals:

(19) Phiri → phiriatsana (hyena)
None → nonetsana (blesbok)
Tshwene → tshweneatsana (baboon)
Nku → nkuatsana (sheep)

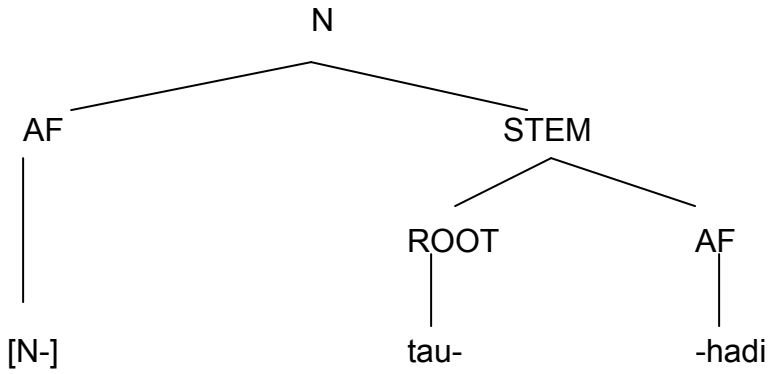
The morpheme [-ana]

The diminutive morpheme [-**ana]** may appear with adjectives which denote colour to indicate the female sex but only nouns as head which refer to animals:

(20) Kgomo e ntsho → kgomo e tshwana (black cow)
Pere e kwebu → pere e kotswana (roan horse)

The morphological structure of nouns with the feminine affix [-**hadi**] is as follows:

(21)



3.4.5 Expressive derivations

The expressive derivations have five functions, i.e. the diminutive, augmentative, pejorative, affectionate and honorofic. In this derivations, the meaning or lexical category of the lexemes over which they operate does not change. They express prejudices of the speaker as to whether the referent is smaller, larger, more likeable or more threatening than other members of its semantic category.

In Sesotho only diminutive and augmentative are clearly marked morphologically. The pejorative and affectionate may be expressed by the diminutive.

The diminutive

The diminutive in Sesotho may be expressed by a suffix [-**ana]** or [-**nyana**]

(22) Thipa → thipanyana (small knife)
Metsi → metsinyana (a little water)

When the diminutive affix [**-ana**] is affixed to a noun, it may have an influence on some sounds:

(23) Kobo + ana → kojwana (small blanket)

The diminutive may express the following meanings:

a. Diminutive which refers to smallness with regard to the following categories:

(i) Person:

(24) Mona → monnanyana (small man)
Kgarebe → kgarejana (small young girl)

(ii) Things:

(25) Buka → bukana (small book)

Selepe → seletswana (small axe)

(iii) Places:

(26) Thaba → thabana (small mountain)
Toropo → torotswana (small town)

(iv) Quantity:

Smallness with regard to quantity mostly refers to mass nouns with diminutive:

(27) Metsi → metsana (a little water)
Lebese → lebesenyana (a little milk)
Kgauta → kgautanyana (a little gold)

(v) Quality:

Diminutive of quality appears with adjective stems or nominal relative stems:

(28) -holo → -holonyana (biggish)
-angata → -ngatanyana (fairly many)
-fubedu → -fubedunyana (reddish)
-thata → -thatanyana (fairly hard)
monate → monatjana (fairly nice)

b. Young ones of animals:

The diminutive suffix [-**ana**] regularly refers to young animals:

(29) tau → tawana (lion)
Phiri → phitshana (hyena)
Phofu → phoshwana (eland)
Kubu → kujwana (hippo)
Lebele = lebejana (reedbuck)

c. Pejorative and Affectionate

Depending on the context the diminutive suffix may either have the reference of pejorative i.e. expressing disapproval or suggesting that something is of little value or importance, or it may have the reference of affectionate, i.e. showing gentle love:

(30) Mosadi → mosatsana (woman)
Monna → monnanyana (man)
Mosetsana → mosetsanyana (girl)
Moshemane → moshemanyana (boy)

With head nouns which are human, colour adjectives with the diminutive may also have a pejorative reference:

(31) Moshanyana e mosweunyana
(A wretched little white boy)

Augmentative

The augmentative suffix in Sesotho is [-**hadi]** which has the same form as the femine suffix [-**hadi**]. The reference of the augmentative is to something large in size in comparison with the diminutive which refers to something small in size. The augmentative regularly appears with nouns which refer to person or things:

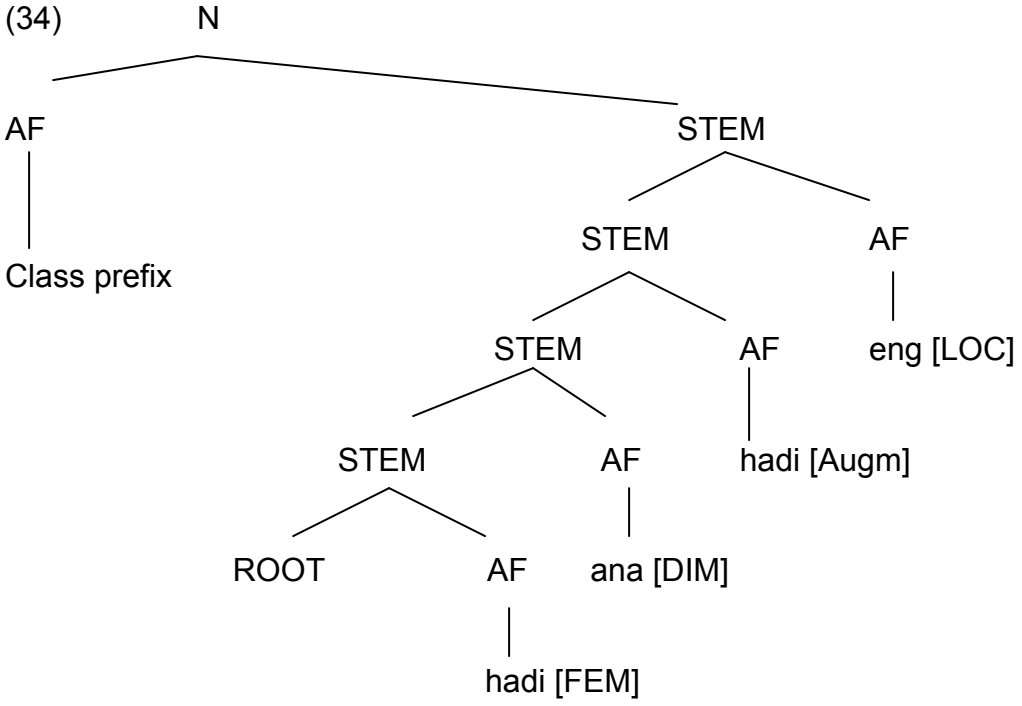
(32) Monna → monnahadi (big man)
Sefate → sefatehadi (big tree)

The augmentative suffix may also appear with adjective stems and nominal relative stems:

(33) -holo → -holohadi (very big)
-tle → -tlehadi (very beautiful)
monate → monatenyana (very nice)

3.4.6 The morphological structure of the noun

(34)



According to the structure in (34) there are four positions for suffixes and one for prefixes. The order of the suffixes indicates that the morphemes may only appear in this specific order next to a nominal root.

CHAPTER 4
NOMINAL DERIVATION IN SESOTHO

4.1 AIM

In the first section, the semantic types of two lexical categories will be dealt with i.e., nominal and verbal classes. An example will be given with each class. This will have an impact on the lexical semantics of these classes.

The second section will deal with the syntax of the verb in which the argument structure; the selectional restrictions on arguments and the linking of arguments to syntactic subcategorization frames will be the main concern. Only a number of verbs from selected categories will be chosen for analysis and others will be left out.

Lastly, the third section will concentrate on the nominal derivations from a selection of verbs; the derivation in noun classes 1, 3, 5, 7, 9, 14, and their morphology; the comparative analysis of verb and derived nouns from that verb in terms of the semantic comparison i.e., Generative lexicon: levels of representation and syntactic comparison i.e., control of arguments.

4.2 SEMANTIC TYPES

There have been various attempts in the literature to classify lexical categories into classes, e.g., as nominal and verbal classes. One of the first comprehensive classifications, which have been consulted, is the one of English verb classes of Levin (1993). She presents a “ large number of semantically coherent classes of verbs whose members pattern in the same way with respect to diathesis alternations and other properties (Levin 1993: 17). She eventually arrived at a classification of 57 different verb classes. The verb classes, which will be represented below, will make extensive use of this classification.

A second classification of lexical categories into classes has been attempted by various people who have been working on a project called WordNet (Fellbaum (ed.) 1998).

Miller (1998) presents a list of 25 unique beginners for nouns, i.e., a classification of 25 nominal classes (Miller 1998:29). Within the same framework of WordNet, Fellbaum (1998:70) gives 14 specific semantic domains for verbs.

The WordNet concept has been extended to various European languages (Vossen 1998, Rodriquez et al. 1998), and is known as EuroWordNet. Rodriquez et al. (1998:137-141) offer a classification organized into three parts; first order entities (mostly concrete nouns) second order entities (nouns, verbs and adjectives) and third order entities (abstract nouns). These classifications rely on criteria such as origin, form, composition and function for first order entities (see Rodriquez et al 1998: 138 – 150)

Lastly, attention has also been given to a program called SIMPLE, which has been attempting syntactic-semantic lexicons for twelve European languages (Lenci et al. 2000). This program has as starting point the lexical semantics in the Generative lexicon model of Pustejovsky (1995).The SIMPLE model follows the following specifications for lexical items: semantic type, domain information, lexicographic gloss, argument structure, selectional restrictions, event type, linking of arguments, qualia structure, polysemy and cross–part–of speech relations (Lenci et al. 2000: 252).

From these various models above, a classification of nominal and verbal classes in Sesotho according to semantic types has been attempted. Eighteen nominal classes have been recognized and sixteen verbal classes. From these semantic types, a selection will be made which will form the basis of the lexical items, which will be treated in this dissertation (see par. 4.4.1 below):

4.2.1 Nominal classes

a.	Natural phenomenon	(mobu , metsi ,kganya)
b.	Natural object	(lejwe , letswai , patsi)
c.	Artifacts	(thipa , ntlo , koloi)
d.	Food	(papa , bohobe , nama , jwala)
e.	Body parts	(hlooho , maoto , letsoho)
f.	Humans	(monna , mosadi , ngwana)

g.	Action	(mosebetsi , tshebetso , ketso)
h.	Animals	(tshwene , tau , nonyana)
i.	Event	(mmino , motantsho , boutswi)
j.	State	(matla , bofokodi , botswalle / setswalle)
k.	Illness	(sefuba , lepera , malaria)
l.	Culture	(tlwaelo , lenyalo , lebollo)
m.	Communication	(puo , pale , lebitso)
n.	Cognition	(bothata , tsebo , tharollo)
o.	Feelings	(thabo , lehloyo , qenehelo)
p.	Time	(letsatsi , bosiu , mariha)
q.	Place	(lehwatata , tshimo , lesaka)
r.	Plants	(sefate , palesa , poone)

4.2.2 Verbal classes

a.	Bodily care and function	(hema , oka)
b.	Aspectual verbs	(qeta , qala , fela)
c.	Verbs of contact	(thetsa , kokota , seha , bea , bata)
d.	Emotion / experiencer verbs	(befa , thaba)
e.	Consumption / ingesting	(ja , nwa)
f.	Perception	(bona , utlwa , nkga)
g.	Communication	(bua , bolela , rohaka)
h.	Cognition	(lebala , rarolla , utlwisisa)
i.	Creation	(aha , betla , duba)
j.	Weather	(na , foka , hadima)
k.	Social behavior and interaction	(eta , sebetsa , swaswa)
l.	Sound emission	(peperana , kgahlela , otlanya)
m.	Change of possession	(nea , fumana)
n.	Change of state	(roba , koba)
o.	Motion verbs	(ya , tsamaya , fihla)
p.	State verbs	(nona , ota)

4.3 SYNTAX OF THE VERB

The verb in Sesotho will be discussed below with regard specifically to its argument structure, the selectional restrictions on arguments and the linking of arguments to syntactic subcategorization frames.

4.3.1 Argument structure

Argument structure provides information about the number and the type of parameters of a predicate. Recent developments in the theory of argument structure have shown that in order to account for the constraints on how arguments are linked to syntactic positions a number of distinctions need to be drawn.

Williams (1981) distinguishes between external and internal arguments, which correspond to the syntactic subject and the syntactic object respectively. Grimshaw (1990) extends this view by arguing in favor of a hierarchically structured representation of argument structure on the basis of the thematic roles of the different parameters. The argument structure for a word can be seen as a minimal specification of its lexical semantics.

Pustejovsky (1995) argues that a distinction based on thematic roles alone is not sufficient to account for the constraints on Expressibility of argument. In particular, the distinction between arguments (obligatory parameters) and adjuncts (optional parameters) is too complex to explain the observation that certain arguments do not require obligatory realization, but they still appear to have an important status in the meaning of a lexical item.

There are four types of arguments for lexical items. They are:

a. True arguments

These are arguments that define those parameters which are necessarily expressed at syntax, and this is the domain that is generally covered by the θ-criterion and surface conditions on argument structure e.g.

(1) [Monna enwa] o bohlale.
(This man is clever)

[Mona enwa] is an external argument: [ARG 1 = x].

This is an example of syntactically realized parameters of the lexical item. The argument for lexical items e.g. ARG 1, ARG 2 … ARG n are represented in a list structure where argument type is directly encoded in the argument structure i.e. ARGSTR, where D-ARG is a default argument and S- ARG is a shadow argument.

b. Default arguments

These arguments are logically part of the expressions in the qualia, but do not need to be obligatorily realized syntactically: e.g.

(2) i. Ka betla mpjhane [ka sefate]
(I carved an African spoon out of wood)

ii. Ka aha lesaka [ka majwe]
(I built a kraal out of stones)

In (2) above, we have examples of material/product alternations because the material (Sefate, Majwe) is optional, its status as an argument is different from the created object (Mpjhane, Lesaka). These optional arguments above are default arguments.

c. Shadow arguments

These arguments are semantically incorporated in the meaning of a lexical item and they can only be expressed by means of subtype or discourse specification. They often refer to semantic content that is not necessarily expressed in syntax. Here are some examples:

(3) i. O mo amohele [ka atla tse mofuthu]
(Welcome her with warm hands)

ii. Ke tla lefa koloi [ka dikgomo]
(I will pay for the car with cattle)

The bracketed words in 3(i and ii) above are shadow arguments. They are expressible only under specific conditions within the sentence itself namely when the expressed arguments stand in sub typing relation to the shadow argument.

d. True adjuncts

These are parameters which modify the logical expression but are part of the situational interpretation, and are not tied to any particular lexical item's semantic representation. These include adjunct expressions of temporal or spatial modification:

(4) i. Moya o a foka [thabeng]
(The wind is blowing on the mountain)

ii. O robetse [veke tse nne sepetlele)
(He slept for four weeks in hospital)

From (4) above all the bracketed words are true adjuncts. These arguments are associated with the verb classes and not individual verbs.

4.3.2 Selectional restrictions on arguments

When a verb selects certain arguments to appear with them, they also select semantic features which these arguments must have in order to appear with such a verb, e.g. the verb " bohola" will assign two arguments: The first argument will be assigned to the noun phrase in the subject position:

Ntja e- bohola batho
(The dog barks at the people)

In the sentence above, the first argument is "Ntja". The question then is whether the verb "bohola" requires this argument to have specific semantic features, i.e. whether

there are any selection restrictions on this argument. It appears that a dog can only do the act of barking. Thus, this argument will have a selection restriction of “Ntja”.

[ARG 1 = Ntja]

The second argument above is “ batho” and the question is whether “ bohola” requires any selection on this argument. To answer this question, one should be able to say that if a dog barks, what is it that he barks at. One can then see that dogs may bark at anything, i.e. there may be no clear selection restriction on this argument:

[ARG 2 = Physical Object]

4.3.3 Linking of arguments to syntactic subcategorization frames

A distinction is made between external and internal arguments which are linked to the syntactic subject and the syntactic object.

There are two distinct lexical representations. The term ‘ thematic role’ is used ambiguously within these representations.

In the first instance, linguistic expressions such as NPs that are assigned θ- roles are called arguments. The potential arguments are the NPs and clauses, which have some sort of referential function: they have to refer to persons, things and places. In this usage the term θ-role is synonymous to the term argument. The lexical representation in this usage is a reflection only of a lexical – syntactic representation, i.e., predicate argument structure (PAS). The particular semantic relation between the argument and the predicate is thus not relevant. The θ-roles within this lexical representation are not referred to by any semantic labels, i.e., no mention is made of the semantic content of such θ-roles.

On the other side, the term thematic role may also name a specific semantic relationship, which an argument may bear to its predicate. Such a lexical representation refers to a lexical – semantic representation. There are various theories which refer to the semantic content of θ-roles. The theory developed by i.a. Jackendoff (1990) refers to the lexical – semantic representation as Lexical Conceptual Structure (LCS).

In the lexical – syntactic representation the PAS of a verb indicates the number of arguments it takes. According to the number of arguments, which a predicate may take, it will be described as a one – place, two – place or three – place predicate. Each argument will have a specific variable corresponding to such an argument, or alternatively, such variables may have certain semantic labels such as agent, theme. The following verbs give an indication of the number of arguments it may take:

One–place predicate: (1) fola : x (a variable)
Theme (a semantic label)

Two–place predicate: (2) palama : x (y) (variables)
Agent (Theme) (semantic label)

Three–place predicate: (3) nwesa : x (y, z) (variables)
Agent (Recipient, Theme) (semantic labels)

The assignment of θ-roles is governed by general principles such as the projection principle and the θ-criterion. These principles ensure that the verb may only subcategorize for complements that it θ-marks. The θ-criterion imposes a one–to–one association between θ-roles and each θ-role is assigned to one and only one argument. Thus, each variable in the PAS of e.g. the predicate " **palama**" in (2), must be saturated, i.e. it must correspond to some syntactic constituent e.g. NP.

(4) [Thabo] o palama [terene]
(Thabo rides on a train)

In (4) above, the variable **x** or the agent corresponds to the NP "Thabo" while the variable **y** or theme argument corresponds to the NP "**terene**". The PAS of **"palama**" has two variables **x** and **y** and these variables are the theta-roles assigned by "**palama**". The two arguments represented by **Thabo** and **terene** will each have one θ-role as indicated above. θ-role assignment gives the association between the NPs in the argument position of a verb in the syntax and the variables in the PAS of the verb.

There are three models of theta-role assignment: by a verb, a preposition and a VP via predication.

The NP arguments of a verb in the syntax are not the same concerning the manner in which they are assigned a θ-role: the NP argument which is assigned a theta role by the VP via predication must be outside the maximal projection of the verb (i.e. VP) as required by predication theory. The verb may thus assign a theta role to the NP argument in the subject position and this argument is an external argument.

The remaining arguments are internal to the maximal projection of the verb. The subcategorization features of a verb indicate the syntactic categories that appear as sisters or complements to that verb which is the head within a verb phrase. All positions for which a verb subcategorizes are theta positions, i.e. if the verb assigns a theta role to a position, it θ-marks that position. The arguments that appear in the position subcategorized by a verb are called internal arguments.

The internal NP arguments are assigned their roles in the syntax under government, i.e., the verb or preposition that assign a θ-role must govern such an internal NP argument. The external NP argument must be in relation of mutual c-command with the maximal projection of the verb.

The lexical representation of a verb must include a specification of how each NP argument is assigned its θ-role together with the number of arguments of each verb:

(5) Seha : x <y, LOC z> (variables)
Agent <Theme, source> (semantic labels)

The verb **seha** may appear in the following sentence:

(6) [Ntate] o seha [nama] [nkung]
(Father is cutting the meat from the sheep)

There are three variables in the structure in (5). The verb **seha** is thus a three-place predicate and these NP arguments are inbrackets in (6).

The variables **y** and **z** or theme and source in (5) are inside the brackets and they represent the internal arguments. One internal argument, **z** is an indirect argument which is assigned its θ-role by a locative morpheme or a location preposition 'ho'. The manner of θ-role assignment must tell which variables in the PAS are direct, indirect, internal or external arguments.

The θ-role labels often indicated are agent, theme, experiencer, patient and others, and they have played a role in various grammatical rules and principles.

There seems to be no consensus about an appropriate set of θ-role labels and the criteria to determine what θ-role label an argument may have. A list of θ -role labels is inadequate as a lexical – semantic representation.

Jackendoff (1990) argued that a NP may bear more than one θ-role e.g. the subject of **palama** can be assigned both actor and theme θ-roles.

Another theta theory called a "bare" theta theory was developed by Williams (1994). This is also a lexical-syntactic representation because no mention is made of contents of the theta roles.

The theta theory is concerned with a relation between a verb and a noun-phrase: a NP in a sentence must be an argument of a verb. This relation between a verb a noun phrase has three features:

i. This relation is obligatory: an NP in a sentence must be an argument of some verb.

(7) [Morena] o batla [nama]
(The chief wants the meat)

The verb **batla** is a two – place relation where the NPs **morena** and **nama** are arguments of the verb **batla**. Some arguments must be obligatory filled: the subject argument is always obligatory.

(8) [Thabang] o a bina
(Thabang is singing)

The object argument of a verb like **bina** need not to be specified, i.e., it may be optional.

(9) a. Ke a bina
(I am singing)

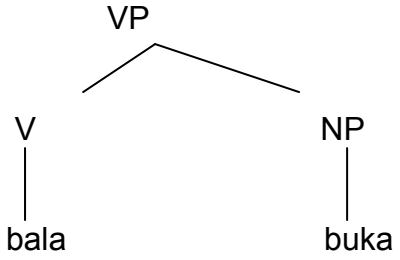
b. Ke bina pina
(I am singing a song)

ii. The relation between a verb and an NP is unique. The theta criterion says that one NP may not be assigned two theta-roles: That is why this relation is unique:

(10) [Mme] o bala [buka]
(Mother read a book)

iii. The relation between a verb and an NP is structurally local, i.e. the verb and its arguments must be sisters.

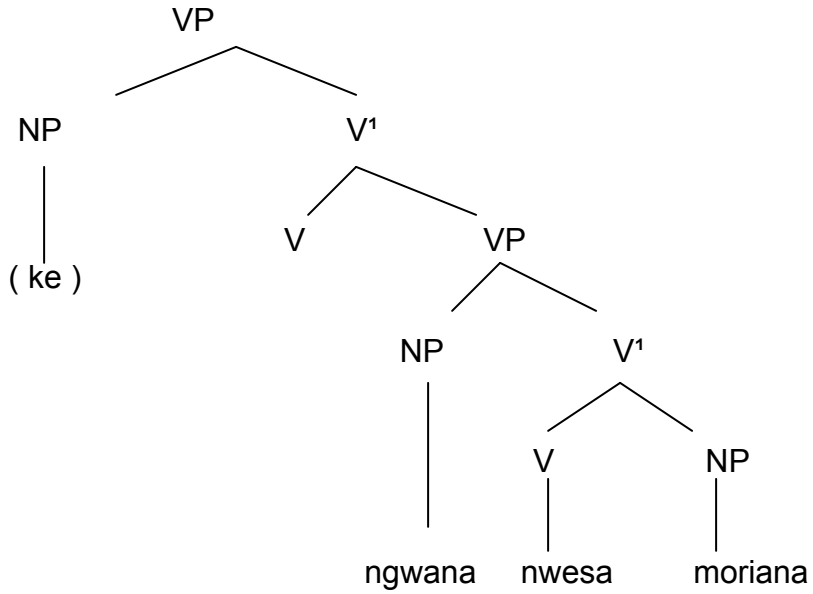
(11)



The NP **buka** which is a complement of the verb **bala** is also its sister.

But with a verb like **nwesa** which has two object arguments, the argument NPs may not be sisters of the verb:

(12)



(13) Ke nwesa [ngwana] [moriana]
(I make the child to drink medicine)

The NP **ngwana** in (13) is not a sister of V but of V¹. This relation is thus not local while the relation between **nwesa** and **moriana** is local. **Moriana** is a sister of the V **nwesa**. In this case the m-command is necessary; a verb and its arguments must be dominated by the same maximal projection, i.e. the VP is a maximal projection and it dominates the verb **nwesa** and its two arguments **ngwana** and **moriana**.

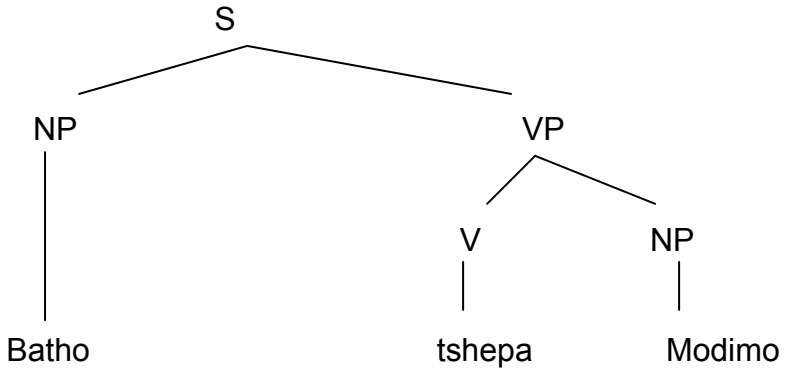
The theta directionality parameter is another issue, which is brought up by Williams (1994) with regard to the theta theory: it states that lexical theta-role assignment takes place from left to right:

(14) Batho ba tshepa Modimo
(People trust God)

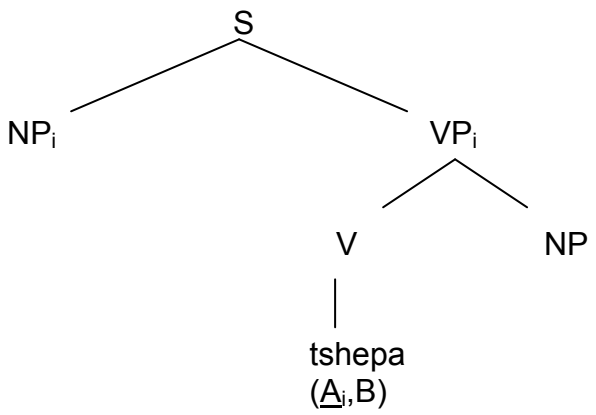
The verb **tshepa** assign a theta-role to its complement **Modimo**. This complement is on the right side of the verb **tshepa**.

The external argument: subject argument is a sister of the maximal projection of the verb.

(15)



(16)



In (16) the verb **tshepa** which is the head of the VP, assigns two θ-roles, i.e., A and B where A is the external argument which is always underlined. This A is then co-indexed with the VP, i.e., A_i and VP_i.This means that the VP binds the A role of the head verb **tshepa**. This θ-role assignment relation is a binding relation between an argument of the verb (A) and the external argument of the head of the NP. The second complement of this θ-role assignment relation is the ordinary relation between the projection of the predicate, i.e., the VP and an argument which is the subject argument in this case.

Another instance of θ-role assignment is clausal predication which is NP VP. The θ-role assignment between the verb **tshepa** and its object is lexical theta role assignment. The theta role assignment between the VP and the subject NP is phrasal θ-role assignment: the VP assigns a theta role to the subject argument because the VP is a predicate. The verb and the VP are the θ-role donors and the NPs are θ-role receivers. Predicates may thus be θ-role donors while referential NPs are θ-role receivers. Adjectives and prepositions may also be θ-role donors.

4.4 NOMINAL DERIVATIONS

In this section a selection will be made of verbs from the verbal classes identified in par. 4.2 above. These verbs will then be forced into nominal derivations in noun classes 1, 3, 5, 7, 9 and 14. The morphology of these derived nouns will then be given after which a comparative analysis will be attempted of the verb and the derived nouns with regard to semantics and syntax of these categories.

4.4.1 Selection of verbs from par.4.2 above.

1. Intransitive

1.1 State verbs

1.1.1 With animate subjects
e.g. **hlahafala** (be wild)

1.1.2 With inanimate subjects
e.g. **tlala** (be full)

1.1.3 With animate or inanimate subjects
e.g. **loka** (be right)

1.2 Motion verbs
e.g. **tsamaya** (walk)

1.3 Weather verbs
e.g. **foka** (blow (wind))

1.4 Verbs relating to the body

1.4.1 Bodily process
e.g. **hlatsa** (vomit)

1.4.2 Damage to the body
e.g. **fokola** (be weak)

1.5 Experiencer verbs
e.g. **thaba** (be glad)

2. Intransitive verbs with a locative argument:

2.1 The locative refers to a location
e.g. **fihla** (arrive)

2.2 The locative refers source
e.g. **kgutla** (return)

2.3 The locative refers to direction
e.g. **ya** (go)

3. Transitive verbs

3.1 Verbs of change of state
e.g. **roba (**break)

3.2 Verbs of change of possession
e.g. **utswa** (steal)

3.3 Verbs of creation
e.g. **aha** (build)

3.4 Verbs of perception
e.g. **bona** (see)

3.5 Experiencer verbs
e.g. **tshaba** (fear)

3.6 Verbs of communication
e.g. **bua** (talk)

4. Transitive verbs with a locative argument:

4.1 Put verbs
e.g. **bea** (put, place)

4.2 Remove verbs
e.g. **amoha** (take away)

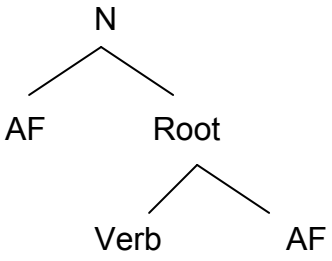
5. Ditransitive verbs

5.1 Change of possession
e.g. **nea** (give)

5.2 Communication
e.g. **botsa** (ask, inquire)

4.4.2 Derivation within noun classes: morphology

See chapter 3 above for an overview of the morphology of the noun in Sesotho. Nouns are regularly derived from verbs within the following noun classes: class 1/2, 3/4, 7/8, 9/10, and class 14. Derivations within class 5/6 are not regularly attested. Derived nouns from verbs have the following morphological structure in Sesotho:

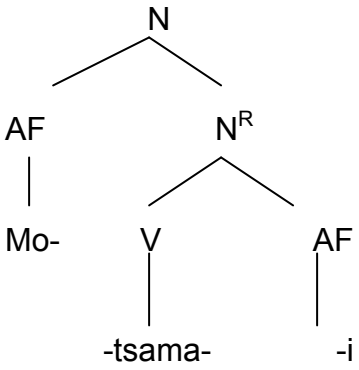


The prefixes in this structure represent the noun class prefixes while the suffix may be either [-i] or [-o], depending on the noun class.

Class 1/2:

Prefixes: **mo-/ba-**
Suffix: **[-i]**

Motsamai (traveler):

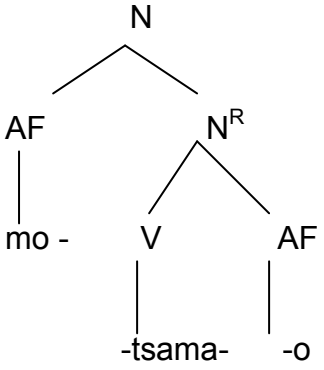


Class 3/4:

Prefixes: **mo-/me-**

Suffix: [-o]

Motsamao (walking)

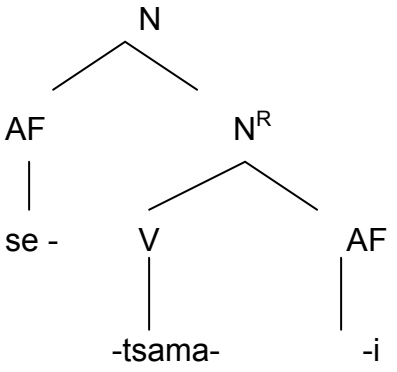


Class 7/8:

Prefixes: se-/di-

Suffix: [-i]:

Setsamai (seasoned traveler)

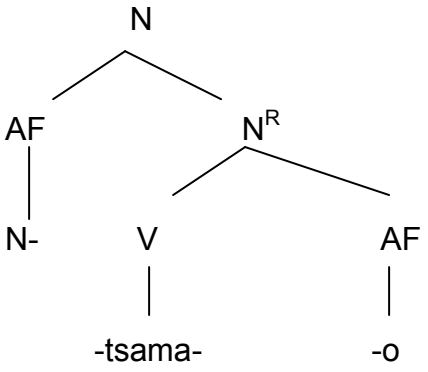


Class 9/10:

Prefixes: **N-/din-**

Suffix: [-i] , [-o]

Tsamao (walk)



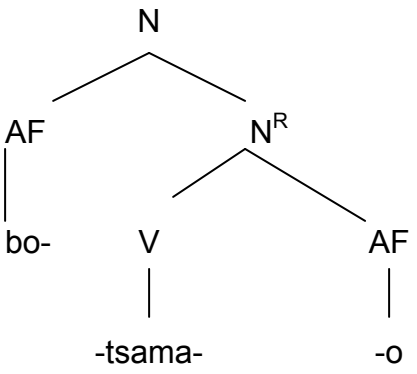
Class 14:

Prefix: **bo–**

Suffixes: [-i],[o]

Botsamai (quality of a person walking)

Botsamao (quality of walking)



Below are some examples of derived nouns in the various noun classes:

a. **Class 1:[Person]**

Mohlahafadi = mo + hlahafal + i

Motsamai = mo + tsama + i

Morobi = mo + rob + i

Moamohi = mo + amoh + i

Mobotsi = mo + bots + i

b. **Class 3: [Inchoative State, Manner] / [Manner, Event]**

Mohlahafalo = mo + hlahafal + o

Motsamao = mo + tsama + o

Morobo = mo + rob + o

Moamoho = mo + amoh + o

Mobotso (Mmotso) = Mo + bots + o

c. **Class 5: [Miscelaneons]**

lefumo = le + fum + o

letshoho = le + tshoh + o

d. **Class 7: [Person, Intensive]**

Sehlahafadi = se + hlahafal + i

Serobi = se + rob + i

Setsamai = se + tsama + i

Seamohi = se + amoh + i

Sebotsi = se + bots + i

e. **Class 9: [Action, Result] / [State]**

Tlhahafalo / Hlahafalo = N+hlafalo + o

Tsamao = N + tsamao + o

Thobo = N + thob + o

Kamoho = N + amoh + o

Potso = N + bots + o

f**.** **Class 14: [Quality]**

Bohlafalo = bo + hlahafal + o

Botsamao = bo + tsama + o

Borobo = bo + rob + o

Boamoho = bo + amoh + o

Boadimo = bo + adim + o

g. **Class14: [Quality of a person]**

Bohlahafadi = bo + hlahafal + i

Botsamai = bo + tsama + i

Boamoho = bo + amoh + i

Bobotsi = bo + bots + i

4.4.3 Comparative analysis of verbs and derived nouns

A semantic and syntactic comparison of a verb and its nominal derivation will be attempted below. The semantic comparison will be done within the framework of the Generative Lexicon with its different levels of representation.

The syntactic comparison between the verb and the derived noun will concentrate on the control of the derived noun. The analysis will be done with the verbs listed in par. 4.4.1 above.

4.4.3.1 Semantic comparison

A list of derivations from verbs will be given below. Such a list will include more than one derivation from a certain category of verbs. In each case only one verb with its derivations will be analyzed e.g., in the first case below: the state verbs with animate subject have four verbs with their derivations but only the verb **hlahafala** will be analyzed because the other verbs show the same features.

(1) Nominalisations with intransitive verbs

(1.1) With state verbs

(1.1.1) With animate subjects

	cl. 1	**cl. 3**	**cl. 5**	**cl. 7**	**cl.9**	**cl.14 [-o]**	**cl.14[-i]**
ota	mooti			seoti	koto	booto	booti
kgathala	mokgathadi	mokgathalo			kgathalo		bokgathadi
fuma	mofumi	mofumo	lefumo	sefumi		bofumo	bofumi
hlahafala	mohlahafadi	mohlahafalo		sehlahafadi		bohlahafalo	bohlahafadi

Ota (be lean / thin)

A. [Person]:

Class 1, 7: mooti, seoti (lean, thin person)

B. [State]:

Class 9: koto (being lean, thin)

C. [Quality]:

Class 14: booto (leanness, thinness)

booti (quality of a lean, thin person)

Kgathala (be tired)

A. [Person]:

Class 1: mokgathadi (tired person)

B. [Inchoative state]:

Class 3: mokgathalo (becoming tired)

C. [State]:

Class 9: kgathalo (being tired)

D. [Quality]:

Class 14: bokgathadi (quality/property of a tired person)

E. [State]:

Class 3: mokgathala (tiredness)

fuma (be rich)

A. [Person]:

Class 1, 7: mofumi, sefumi (rich person)

B. [Inchoative state, Manner]:

Class 3: mofumo (becoming rich, way of becoming rich)

C. [Artefacts]:

Class 5: lefumo (riches)

D. [Quality]:

Class 14: bofumo (richness)

bofumi (quality of a rich person)

hlahafala (be wild)

A. [Person]:

Class 1, 7: mohlahafadi, sehlahafadi (wild person)

B. [Inchoative state, Manner]

Class 3: mohlahafalo (becoming wild, way of becoming wild)

C. [State]:

Class 9: tlhahafalo (being wild)

D. [Quality]:

Class 14: bohlahafalo (wildness)

bohlahafadi (quality of a person)

Nominalisation from the verb <u>hlahafala</u>:

(1) **The verb <u>hlahafala</u>** (become wild):

Monna enwa o- hlahafetse (This man is wild)

hlahafala

ARGSTR = ARG 1 = x : animate

EVSTR = E1 = e_1 : state

QUALIA = FORMAL = hlahafala (e_1, x)

Hierarchy of Semantic Concepts:

Wild – State

The lexical representation of **hlahafala** shows one argument in the argument structure which is animate (an animal or a person). The event structure shows the state event of being wild.

(2) **Nominalisation in Class 1:**

Mohlahafadi (wild person)

Mohlahafadi o – halefile (The wild person is angry)

mohlahafadi
ARGSTR = ARG 1 = x : human
EVSTR = D – E1 = e_1 : state
QUALIA = FORMAL = hlahafala (e_1, x)

Hierarchy of Semantic Concepts:

Wild – State – Human

The lexical representation of the noun **Mohlahafadi** shows that in the argument structure only human being is capable of being wild. The event structure presents a default event which is the state of being wild. In the qualia, the formal quale shows the state (e_1)of a wild person (x).

(3) **Nominalisation in Class 7:**

Sehlahafadi (very wild person)

Sehlahafadi se – a – tshosa (The very wild person is frightening)

Sehlahafadi
ARGSTR = ARG 1 = x : human
EVSTR = D – E1 = e_1 : state
QUALIA = FORMAL = hlahafala _ intensive (e_1, x)

Hierachy of Semantic Concepts:

Wild – Intensive – State – Human

The lexical representation of **Sehlahafadi** in no. (3) above, can be explained in the same way as in no.(2) above. The only difference can be traced from the qualia which is formal. The feature [intensive] makes the difference between no. (2) and no. (3) above.

(4) **Nominalisation in Class 3:**

Mohlahafalo (becoming wild)

Mohlahafalo wa monna o–a–tshosa

(The becoming wild of the man is frightening)

mohlahafalo
ARGSTR = ARG 1 = e : r
D – ARG 1 = x : animate
EVSTR = D – E1 = e_1 : state : inchoative
QUALIA = FORMAL = hlahafala (e_1 , x)

Hierarchy of Semantic Concepts:

Wild – Inchoative – State

The lexical representation of **Mohlahafalo** in no. (4) shows that there are two arguments in the argument structure: one is a default argument (i.e., a human being or an animal).The first argument shows the reference(r) of the event (e) of getting wild by itself. The event structure shows the default event which is an inchoative state (i.e., the becoming wild state). The qualia features the formal quale state of either a human being or an animal becoming wild.

(5) **Nominalisation in Class 3 (Manner):**

Mohlahafalo (way of becoming wild)

Mohlahafalo wa diphoofolo o – utlwisa bohloko

(The way of becoming wild of the animals is heart – breaking)

mohlahafalo
ARGSTR = ARG 1 = e : r
D – ARG 1 = x : animate
EVSTR = D – E1 = e_1 : state : inchoative
QUALIA = FORMAL = hlahafala _ manner (e_1 , x)

Hierarchy of Semantic Concepts:

Wild – Inchoative – Manner – State

The lexical representation of **Mohlahafalo** in no. (5) above can be explained in the same way as in no. (4) above. The only difference can be found in the qualia i.e., the formal quale, where the feature [manner] is highlighted.

(6) **Nominalisation in Class 9:**

Tlhahafalo (being wild)

Tlhahafalo ya batho ha–e–a–tlwaeleha.

(Being wild of human beings is not sociable)

tlhahafalo
ARGSTR = ARG 1 = e : r
D – ARG 1 = x : animate
EVSTR = D – E1 = e_1 : state
QUALIA = FORMAL = hlahafala (e_1 , x)

Hierarchy of Semantic Concepts:

Wild – State

The lexical representation of tlhahafalo in no. (6) above is explained in the same way as in no.(4) above. The only difference appears in the event structure where in no. (6) the event is not [inchoative]. The absence of the feature shows that **tlhahafalo** is not in a becoming state.

(7) **Nominalisation in Class 14 with [- o]:**

Bohlahafalo (wildness)

Bohlahafalo bathong ke sebe (Wildness among people is a sin)

bohlahafalo
ARGSTR = ARG 1 = e : r
D – ARG 1 = x : animate
EVSTR = D – E1 = e_1 : state
QUALIA = FORMAL = hlahafala_quality (e_1 , x)

Hierarchy of Semantic Concepts:

Wild – Quality –State

The lexical representation of **bohlahafalo** in no. (7) above, can be explained in the same way as in no. (4) above. The only difference is found in the formal

quale in which the feature [quality] is highlighted in no. (7) above.

(8) **Nominalisation in Class 14 with [- i]:**

Bohlahafadi (quality of a wild person)

Bohlahafadi ba ngwana ha–bo–a–loka

(The quality of a wild child is not in order)

bohlahafadi

ARGSTR = ARG 1 = e : r
ARG 2 = x : animate
EVSTR = D – E1 = e_1 : state
QUALIA = FORMAL = hlahafala_quality_animate (e_1 , x)

Hierarchy of Semantic Concepts:

Wild – Quality – Animate – State

The lexical representation of **bohlahafadi** in no.(8) above, may be explained in the same way as in no. (7) above. The only difference is found in the formal quale in which the feature [animate] is added. This feature shows the quality of wildness state of an animate being.

Notes on State verbs with animate subjects:

The analysis from the state verbs with animate subjects shows that:

a. State verbs in the list above have an animate argument, the event is a state and there is one formal qualia in which the animate argument is in a state (of wildness) (e_1, x).

b. In Class 1: the analysis is a reflection of the one of the verb in (1) above except that the argument is now only human and the semantic concept has to refer to this feature, i.e., human which is related to the reference of the affixes mo – and –i.

c. In Class 7: the only difference with the analysis in Class 1 in no. (2) above is related to the feature [intensive] on the verb **hlahafala** in the formal qualia in no. (3) above. The presence of the prefix [se–] forces this interpretation while the suffix [-i] refers to the feature [human].

d. Nominalisation in class 3 (no. 4 and 5 above): the argument of **mohlahafalo** refers to the event itself (e:r) where [r] indicates the reference of the argument. This event refers to the event structure of the verb which indicates a state, but in this nominalisation the state is at the beginning of its development and not fully formed . That is why the event structure is indicated as inchoative (which in English also refers to the word "become").The derivation thus indicates an inchoative noun through the presence of the affixes [mo-] and [-o].

The same derivation in Class 3 is given in no. (5) above. This derivation is thus ambiguous with regard to the extra feature [manner] which is present on the verb **hlahafala** in the formal qualia in no. (5) above. The analysis of no. (5) is otherwise the same as that of no. (4) above.

e. Nominalisation in Class 9 no.(6) above: the analysis is the same as that in no. (4) and (5) above except with regard to the event structure. This structure now refers to a fully developed state of being wild which is the most important quality of this state.

f. Nominalisation in Class 14 no. (7) and (8) above: the analysis of the two derivations differ only because of the presence of the suffixes [-o] and [-i]. The prefix [bo-] forces an interpretation of [quality of state] on the two derivations while the suffix [-I] refers to animate as in no. (2) and (3) above. This difference is reflected in the formal qualia where **bohlahafalo** has the feature [quality] on the verb, but **bohlahafadi** has the feature [quality] and [animate] on the verb because of the suffix [-i].

(1.1.2) With inanimate subjects

	cl.1	cl.3	cl.5	cl.7	cl.9	cl.14[-o]	cl.14[-i]
oma		moomo			komo	boomo	
tlama		motlalo			tlalo	botlalo	
hlweba		mohlwebo			tlhwebo	bohlwebo	

oma (be dry)

A. [Inchoative state, Manner]:
Class 3: moomo (becoming dry, way of becoming dry)

B. [State]:
Class 9: komo (being dry, drought)

C. [Quality]: boomo (dryness)

tlala (be full)

A. [Inchoative state]:
Class 3: motlalo (becoming full)

B. [Quantity]:
Class 3: motlalo (quantity, abundance)

C. [State]:
Class 9: tlalo (being full, fullness)

D. [Quality]:
Class 14: botlalo (quality of fullness)

hlweba (be sour)

A. [Inchoative state]:
Class 3: mohlwebo (becoming sour)

B. [State]:
Class 9: tlhwebo (being sour, sourness)

C. [Quality]:
Class 14: bohlwebo (quality of sourness)

The analysis of nominalisations from state verbs with inanimate subjects may be compared to the derivations in par. (1.1.1) above. The derivations with inanimate subjects above have the same analysis as in the examples with **hlahafala** in par. (1.1.1) above, i.e., specifically no. (4) and (5) with **hlahafala** with regard to class 3, and no. (6) and (7) of **hlahafala** with regard to Class 9 and (14). The argument will always be inanimate.

(1.1.3) With animate or inanimate subjects

	cl.1	cl.3	cl.7	cl.9	cl.14[-o]	cl.14[-i]
loka	moloki	moloko	seloki	toka	boloko	boloki
hlweka	mohlweki	mohlweko	sehlweki	tlhweko	bohlweko	bohlweki
phahama	mophahami	mophahamo	sephahami	phahamo	bophahamo	

loka (be right)

A. [Person]:
Class 1, 7: moloki, seloki (righteous person)

B. [Inchoative state]:
Class 3: moloko (becoming right/righteous)

C. [State]:
Class 9: toka (being right, righteousness, justice)

D. [Quality]:
Class 14: boloko (quality) state of justice)
boloki (quality) state of a righteous person)

hlweka (be clean, pure)

A. [Person]:
Class 1, 7: mohlweki, sehlweki (clean, pure person)

B. [Inchoative state]:
Class 3: mohlweko (becoming clean, pure)

C. [State]:

Class 9: tlhweko (being clean, cleanliness, purity)

D. [Quality]:

Class 14: bohlweko (quality) state of being clean)

bohlweki (quality) state of clean/pure person)

phahama (be high)

A. [Person]:

Class 1, 7: mophahami, sephahami (one who is high)

B. [Inchoative state]:

Class 3: mophahamo (becoming/going high)

C. [State]:

Class 9: phahamo (being high, high place/position)

D. [Quality]:

Class 14: bophahamo (quality of being high, height)

The analysis of state verbs with animate or inanimate subjects is the same as the analysis of derivations with hlahafala in par.(1.1.1) above except for two differences:

a. The derivation in Class 3 is not ambiguous with regard to the manner of the state forming as in par.1.1.1 above,

b. The argument structure with these verbs refer to an animate or inanimate entity in the case of Class 3, 9 and Class 14 with the suffix [-o].

(1.1.4) **Semantic Concepts with state verbs**

Class 1: Human (Person)

Class 7: Human: Intensive

Class 3: Inchoative state

Class 3: Manner of inchoative state

Class 9: State

Class 14 with [-o]: Quality (of state)

Class 14 with [-o]: Quality of person

(1.2) Motion verbs

	cl. 1	cl. 3	cl. 5	cl. 7	cl. 9	cl.14[-o]	cl.14[-i]
sesa	mosesi	moseso		sesesi	tsheso	boseso	bosesi
thella	mothelli	mothello		sethelli	thello	bothello	
phalla	mophalli	mophallo	lephallo	sephalli	phallo		bophalli
tsamaya	motsamai	motsamao		setsamai	tsamao	botsamao	botsamai
lelera	moleleri	molelero			telero	bolelero	boleleri
matha	momathi	momatho		semathi			bomathi

sesa (swim)

A. [Person]:

Class 1, 7 mosesi, sesesi (swimmer)

B. [Event, Manner]:

Class 3: moseso (swimming, way of swimming)

C. [Action, Result]:

Class 9: tsheso (swim, act or occasion of swimming)

D. [Quality]:

Class 14: boseso (quality of swimming)

bosesi (quality of swimmer)

thella (slip)

A. [Person]:

Class 1, 7: mothelli, sethelli (person who slips)

B. [Event, Manner]:

Class 3: mothello (slipping, way of slipping)

C. [Action, Result]:

Class 9: thello (slip, act of slipping)

D. [Quality]:

Class 14: bothello (slipperiness)

phalla (run, flow)

A. [Person]:

Class 1, 7: mophalli, sephalli (runner)

B. [Natural object]:

Class 7: sephalli (something which flows, liquid)

C. [Event, Manner]:

Class 3: mophallo (running, flowing, way of running/flowing)

D. [Action, Result]:

Class 5: lephallo (run, race, flow)

Class 9: phallo (run, flow, act of running)

E. [Quality]:

Class 14: bophalli (quality of runner)

tsamaya (walk)

A. [Person]:

Class 1, 7: motsamai, setsamai (walker, traveler)

B. [Event, Manner]:

Class 3: motsamao (walking, way of walking)

C. [Action, Result]:

Class 9: tsamao (walk, act of walking)

D. [Quality]:

Class 14: botsamao (quality of walking)

botsamai (quality of walker)

lelera (roam)

A. [Person]:

Class 1: moleleri (one who roams)

B. [Event, Manner]:

Class 3: molelero (roaming, way of roaming)

C. [Action, Result]:

Class 9: telero (act of roaming, roam)

D. [Quality]:

Class 14: bolelero (quality of roaming)

boleleri (quality of one who roams)

matha (run)

A. [Person]:

Class 1, 7: momathi, semathi (runner)

B. [Event, Manner]:

Class 3: momatho (running, way of running)

C. [Quality]:

Class 14: bomathi (quality of runner)

Nominalisation from tsamaya:

(1) **The verb tsamaya** (walk)

Ngwana enwa o–a–tsamaya. O-tsamaya tseleng.

(This child is walking) (She walks in the road)

tsamaya
ARGSTR = ARG 1 = x : phys. obj.
D- ARG 1 = y : location
EVSTR = E1 = e_1 : process
QUALIA = FORMAL = x
AGENTIVE = tsamaya _ act (e_1, x, y)

Hierarchy of Semantic Concepts:

Walk – Motion

The lexical representation of **tsamaya** can be explained as showing two arguments in argument structure. One argument is a default argument (i.e., the location where the walking is taking place) and the physical object. In the event structure, the process of walking is found. The qualia features the formal quale which is the identity of the physical object (x) and the agentive quale which is the act (process) of walking (e_1) of any physical object (x) in a certain location (y).

(2) **Nominalisation in Class 1:**

Class 1: **Motsamai** (walker, traveler)

Motsamai o–fihlile (The traveler has arrived)

motsamai

ARGSTR = ARG 1 = x : human
D – ARG 1 = y : location
EVSTR = D – E1 = e_1 : process
QUALIA = FORMAL = x
AGENTIVE = tsamaya_act (e_1, x)

Hierarchy of Semantic Concepts:

Walk – Motion – Actor – Human

The lexical representation of **motsamai** show two arguments in the argument structure; one argument is a default argument (i.e., the location where the walking is taking place). The event structure presents the default process event of walking. The qualia features the formal quale, which is the identity of the human argument (x); and the agentive quale which is the act (process) of walking (e_1) of a person (x).

(3) Nominalisation in Class 7:

Setsamai (person who walks / travels much)

Setsamai se – fihlile (The seasoned traveler has arrived)

setsamai
ARGSTR = ARG 1 = x : human
D – ARG1 = y : location
EVSTR = D – E1 = e_1 : process
QUALIA = FORMAL =x
AGENTIVE = tsamaya_act_intensive (e_1, x, y)

Hierarchy of Semantic Concepts:

Walk – Intensive – Motion – Actor – Human

The lexical representation of **setsamai** can be explained in the same way as in no. (2) above. The only difference is in the agentive quale which is the [intensive] act of walking at a certain location by somebody.

(4) Nominalisation in Class 3:

Motsamao (walking)

Motsamao wa tshwene o–a–tshehisa

(The walking of a baboon is amusing)

motsamao
ARGSTR = ARG 1 = e : r
D – ARG 1 = x : phys. obj.
D – ARG 2 = y : location
EVSTR = D – E1 = e_1 : process
QUALIA = FORMAL = (e_r, x, y)
AGENTIVE = tsamaya_act (e_1, x)

Hierarchy of Semantic Concepts:

Walk – Motion – Event

The lexical representation of **motsamao** in no. (4) above: There are three arguments in the argument structure in which two arguments are default arguments (i.e., physical

object that may show a movement and the location in which it is walking). The other argument is the reference of the event of walking by itself.

(5) Nominasisation in Class 3 [Manner]:|

Motsamao (way of walking)

Motsamao wa ngwana ha–o–a–loka.

(The way of walking of the child is not right)

motsamao
ARGSTR = ARG 1 = e : r
D – ARG 1 = x : phys. obj
D – ARG 2 = y : location
EVSTR = D – E1 = e_1 : process
QUALIA = FORMAL = (e_r, x, y)
ARGENTIVE = tsamaya_act_manner (e_1, x)

Hierarchy of Semantic Concepts:

Walk – Manner – Motion – Event

The lexical representation of **motsamao** in no. (5) above can be explained in the same way as in no. (4) above. The feature [Manner] in no. (5) above makes the distinction between the two. The feature [Manner] explains the manner in which the event of walking is done.

(6) Nominalisation in Class 9:

Tsamao (walk, act of walking)

Tsamao ya watjhe e–a–makatsa

(The walk of a watch is so astonishing)

tsamao

ARGSTR = ARG 1 = e : r
D – ARG 1 = x : phys. obj
D – ARG 2 = y : location
EVSTR = D – E1 = e_1 : process
QUALIA = FORMAL = tsamaya_result (e_r, x)
AGENTIVE = tsamaya_act (e_1, x)

Hierarchy of Semantic Concepts:

Walk – Motion – Result – Action

The lexical representation of **tsamao** in no. (6) above can be explained in the same way as in no. (4) above. The difference is in the formal quale which presents the result of walking in no. (6) above whereas in no. (4) above, the formal quale presents the event itself.

(7) Nominalisation in class 14 with suffix [-o]:

Botsamao (quality of walking)

Botsamao ba letahwa bo–a–tshehisa

(The quality of the drunkard ‘s walking is amusing)

botsamao
ARGSTR = ARG 1 = e : r
D – ARG 1 = x : phys. obj
D – ARG 2 = y : location
EVSTR = D – E1 = e_1 : process
QUALIA = FORMAL = tsamaya_result_quality (e_r, x, y)
AGENTIVE = tsamaya_act (e_1, x)

Hierarchy of Semantic Concepts:

Walk – Motion – Quality – State

The lexical representation of **botsamao** in no. (7) above, is explained in the same way as in no. (4) above. The difference is the formal quale in which the quality of the result of the walking is presented in no. (7) above.

(8) Nominalisation in Class 14 with suffix [-i]:

Botsamai (quality of walker)

Botsamai ba moruti bo–lokile

(The preacher ‘s quality of walking is in order)

botsamai
ARGSTR = ARG 1 = e : r
ARG 2 = x : animate
D – ARG 1 = y : location
EVSTR = D – E1 = e_1 : process
QUALIA = FORMAL = tsamaya_result_quality_animate (e_r, x, y)
AGENTIVE = tsamaya_act (e_1, x)

Hierarchy of Semantic Concepts:

Walk – Motion – Animate – Quality –State

The lexical representation of **botsamai** in no. (8) above, is explained as in no.(4) above. The difference is in the formal quale in which the quality of the result of the walking of an animate being is presented in no. (8) above.

Notes on the analysis from the Motion verbs:

a. All the motion Sesotho verbs in the list above have the same analysis as the verb **tsamaya** in no. (1) above except for the argument which is any physical object in no. (1). With other motion verbs this argument may for instance be only animate (e.g. with **sesa**). These verbs may all have a default argument which refers to a location. The event structure features a process and the qualia have a formal as well as an agentive role which are the same in all the motion verbs.

b. **Nominalisation in Class 1**: the presence of the prefix [mo-] and the suffix [-i] forces an interpretation of **human** on the argument of **motsamai**. The analysis is otherwise the same as in no. (1) above.

c. **Nominalisation in Class 7:** the analysis reflects the one in no. (2) above except for the agentive qualia: the presence of the prefix [se-] forces the feature [intensive] on the verb **tsamaya**.

d. **Nominalisation in Class 3:** the argument of **motsamao** in both no. (4) and no. (5) above refers to the event of walking (r=reference, e=event). This argument is reflected in the formal quale as (e_r, x, y). The analysis in no. (5) is the same as in no. (4) except for the presence of the feature [Manner] on the verb **tsamaya** in the agentive quale.

e. **Nominalisation in Class 9 in no. (6):** the analysis is the same as in the case of the event **motsamao** in no. (4) above except for the formal quale: this formal quale has to represent the result of the walking, i.e., a walk. The agentive role still reflects the act of walking.

f. Nominalisation in Class 14 in no. (7) and (8) above: the analysis may be compared with the one in no. (4) above with the following differences: **botsamai** has an animate argument while **botsamao** has any physical object; the agentive quale has to represent the feature [Quality (of the state)] in both derivations but with **botsamai** in no. (8) an added feature of [Animate has to be present because of the suffix [-i]. The prefix [bo-] forces the interpretation of quality (of a state)

g. **Semantic Concepts**

Class 1: Human Actor (Person)
Class 7: Human Actor (Intensive)
Class 3: Event
Class 3: Manner of event
Class 9: Action, Result
Class 14 with [-o]: Quality (of state)
Class 14 with [-i]: Quality of person

(1.3) Weather verbs

	cl. 1	**cl. 3**	**cl. 5**	**cl.7**	**cl.9**	**cl.14[-o]**	**cl.14[-i]**
foka		mofoko			phoko	bofoko	
kgetheha		mokgetheho			kgetheho	bokgetheho	
hadima		mohadimo	lehadima		kgadimo	bohadimo	

foka (blow (wind))

A. [Event, Manner]:

Class 3: mofoko (blowing, way of blowing of wind)

B. [Result]:

Class 9: phoko (blow of wind)

C. [Quality]:

Class 14: bofoko (quality of blowing of wind)

kgetheha (snow)

A. [Event, Manner]:

Class 3: mokgetheho (snowing, way of snowing)

B. [Result]:

Class 9 kgetheho (fall of snow)

C. [Quality]:

Class 14: bokgetheho (quality of snowing)

hadima (glitter, be bright)

A. [Event]:

Class 3: mohadimo (shining brightly, glittering)

B. [Natural phenomenon]:

Class 5: lehadima (lightning)

C. [Result]:

Class 9: kgadimo (giving out/throwing back light, reflection of light)

D. [Quality]:

Class 14: bohadimo (quality of light giving / reflection/brightness/glitter)

Nominalisation from the verb foka:

(1) **The verb <u>foka</u>** (blow (wind)):

Moya o–a–foka (The wind is blowing)

foka
ARGSTR = ARG 1 = x : wind
EVSTR = E1 = e_1 : process
QUALIA = FORMAL = x
AGENTIVE = foka_act (e_1, x)

Hierarchy of Semantic Concepts:

Blow (wind) – Weather

The lexical representation of **foka** shows that there is only one argument in the argument structure. This argument represents the blowing wind. The event structure shows the process event of blowing. The formal quale is the identity of the wind and the agentive quale show the act (process) of the blowing wind (x).

(2) **Nominalisation in Class 3:**

Mofoko (blowing of wind)

Mofoko wa sefefo o–kotsi

(The blowing of the storm is dangerous)

mofoko
ARGSTR = ARG 1 = e : r
D – ARG 1 = x : wind
EVSTR = D – E1 = e_1 : process
QUALIA = FORMAL = (e_r, x
AGENTIVE = foka_act (e_1, x)

Hierarchy of Semantic Concepts:

Blow (wind) – Weather – Event

The lexical representation of **mofoko** in no. (2) above presents two arguments in which one is a default argument (i.e., wind which is blowing). The event structure consists of a default process event of blowing. The formal quale presents the argument as an event and the agentive quale shows the act (process) of the blowing wind.

(3) **Nominalisation in Class 3 Manner:**

Mofoko (way of blowing of wind)

Mofoko wa setsokotsane eka noha

(The way of blowing of a whirlwind is like a snake)

mofoko
ARGSTR = ARG 1 = e : r
D – ARG 1 = x : wind
EVSTR = D – E1 = e_1 : process
QUALIA = FORMAL = (e_r, x)
AGENTIVE = foka_act_Manner (e_1, x)

Hierarchy of Semantic Concepts:

Blow (wind) – Manner – Weather – Event

The lexical representation of **mofoko** in no. (3) above is explained in the same way as in no. (2) above. The only difference is in the agentive quale (i.e., the manner of blowing of the wind). The feature [Manner] makes a distinction between no. (2) and (3).

(4) **Nominalisation in Class 9:**

Phoko (blow of wind)

Phoko ya difefo e–baka mahlomola

(The blow of storms causes misery)

phoko
ARGSTR = ARG 1 = e : r
D- ARG 1 = x : wind
EVSTR = D – E1 = e_1 : process
QUALIA = FORMAL = foka_result (e_r, x)
AGENTIVE = foka_act (e_1, x)

Hierarchy of Semantic Concepts:

Blow (wind) – Weather – Result

The lexical representation of **phoko** in no. (4) above is explained in the same way as in no. (2) above. The only difference is in the formal quale where the result of the blowing

of the wind is highlighted. The feature [Result] in no. (4) makes a distinction between the two.

(5) **Nominalisation in Class 14:**

Bofoko (quality of blowing of wind)

Bofoko ba moya ha–bo–bonahale

(The quality of the blowing of the wind is not visible)

bofoko
ARGSTR = ARG 1 = e : r
D – ARG 1 = x : wind
EVSTR = D – E1 = e_1 : process
QUALIA = FORMAL = foka_result_quality (e_r, x)
AGENTIVE = foka_act (e1, x)

Hierarchy of Semantic Concepts:

Blow (wind) – Weather – Quality – State

The lexical representation of bofoko in no. (5) is also the same as in no. (2) above. The only difference is shown in the formal quale i.e., the quality of the result of blowing of the wind.

Notes on the analysis from Weather verbs:

a. They can be treated like Motion verbs as in par. (2) above: the weather verbs differ from the motion verbs only with regard to the argument structure: the argument of weather verb is normally a weather noun such as **wind**, **rain**.

b. **Nominalisation in Class 3** is treated as the noun **motsamao** in Motion verbs no. (4) and (5). **Mofoko** has the same analysis except for the default argument which is **wind**.

c. **Nominalisation in Class 9** has the same analysis as **tsamao** in Motion verbs no. (6) except for the argument of **phoko** (wind) which refers only to the result of the blowing of the wind and not the action.

d. **Nominalisation in Class 14** is also analysed as botsamao in Motion verbs no. (7) above. **Bofoko** has the same analysis except for the argument of **bofoko** which has wind.

e. **Semantic Concepts:**

Class 3: Event

Class 3: Manner of event

Class 9: Result

Class 14: Quality (of state)

(1.4) Verbs relating to the body

(1.4.1) Bodily processes

	cl. 1	cl. 3	cl. 5	cl. 7	cl. 9	cl.14[-o]	cl.14[-i]
kgohlela	mokgohledi	mokgohlelo		sekgohlela sekgohledi	kgohlelo	bokgohlelo	bokgohledi
thimola	mothimodi	mothimolo		sethimodi sethimola	thimola thimolo		bothimodi
hlatsa	mohlatsi	mohlatso	mahlatsa		tlhatso		bohlatsi
bohla	mmohli	mmohlo		sebohli	pohlo		bobohli
hona	mohoni	mohono		sehoni			
phefumoloha	mophefumolohi	mophefumoloho		sephefumolohi	phefumoloho		
lla	molli	mollo		sello selli			bolli
bobola	mmobodi			sebobodi	pobolo pobodi	bobobolo	bobobodi
dumaela	modumaedi	modumaelo		sedumaedi	tumaelo	bodumaelo	bodumaedi

kgohlela (cough)

A. [Person]:

Class 1, 7: mokgohledi, sekgohledi (person who coughs)

B. [Event, Manner]:

Class 3: mokgohlelo (coughing, manner of coughing)

C. [Result]:

Class 9: kgohlelo (cough)

Class 7: sekgohlela (mucus)

D. [Quality]:

Class 14: bokgohlelo (quality of coughing)

bokgohledi (quality of a coughing person)

thimola (sneeze)

A. [Person]:

Class 1, 7: mothimodi, sethimodi (person who sneezes)

B. [Event, Manner]:

Class 3: mothimolo (sneezing, way of sneezing)

C. [Result]:

Class 9: thimolo (sneeze)

Class 7, 9: sethimola, thimola (mucus)

D. [Quality]:

Class 14: bothimodi (quality of a sneezing person)

hlatsa (vomit)

A. [Person]:

Class 1: mohlatsi (person who vomits)

B. [Event, Manner]:

Class 3: mohlatso (vomiting, manner of vomiting)

C. [Action]:

Class 9: tlhatso (act of vomiting)

D. [Quality]:

Class 14: bohlatsi (quality of a vomiting person)

E. [Result]:

Class 6: mahlatsa (vomit)

bohla (belch)

A. [Person]:
Class 1, 7: mmohli, sebohli (person who belches)

B. [Event, Manner]:
Class 3: mmohlo (belching, way of belching)

C. [Action, Result]:
Class 9: pohlo (belch, act of belching)

D. [Quality]:

Class 14: bobohli(quality of a belching person)

hona (snore)

A. [Person]:
Class 1, 7: mohoni, sehoni (snorer)

B. [Event, Manner]:
Class 3: mohono (snoring, way of snoring)

phefumoloha (breathe)

A. [Person]:
Class 1, 7: mophefumolohi, sephefumolohi (breather)

B. [Event, Manner]:
Class 3: mophefumoloho (breathing, way of breathing)

C. [Action, Result]:
Class 9: phefumoloho (breath, act of breathing)

dumaela (murmur)

A. [Person]:
Class 1, 7: modumaedi, sedumaedi (murmurer)

B. [Event, Manner]:
Class 3: modumaelo (murmuring, way of murmuring)

C. [Action, Result]:
Class 9: tumaelo (murmur, making of a murmur)

D. [Quality]:
Class 14: bodumaelo (quality of murmuring)
bodumaedi (quality of murmuring person)

bobola (groan)

A. [Person]:
Class 1, 7: mmobodi, sebobodi (groaner)

B. [Action, Result]:
Class 9: pobolo (groan, act of groaning)
pobodi (act of a groaner)

C. [Quality]:
Class 14: bobobolo (quality of groaning)
bobobodi (quality of groaner)

lla (cry)

A. [Person]:
Class 1, 7: molli, selli (crier)

B. [Event, Manner]:
Class 3: mollo (crying, way of crying)

C. [Action, Result]:

Class 7: sello (cry, act of crying)

D. [Quality]:

Class 14: bolli (quality of a crier)

With these verbs, the nominalisations follow more or less the same analysis as the nominalisations of the Motion verbs in par. (1.2) above, but the agentive quale will be **act**.

a. The verbs of bodily processes are treated as in par. (1.2) no. (1) for **tsamaya** . Verbs of bodily processes have animate arguments but the event structure and qualia are the same. The **Semantic Concepts** for these verbs should include the bodily process e.g.

Cough – Bodily process – Body

b. **Nominalisation in Class 1**: See par. (1.2) no. (2) for **Motsamai**: the argument structure will again reflect only [Human] but the event structure and qualia will be the same. The **Semantic Concepts** will be:

Cough – Bodily process – Body – Human

c. **Nominalisation in Class 7:** See par. (1.2) no. (3) for **Setsamai**: these derivations all refer to an [intensive] feature on the humans as in the case of **Setsamai**.The **Semantic Concepts** will be:

Cough – Intensive – Bodily process – Bodily – Human

d. **Nominalisation in Class 3:** See par. (1.2) no. (4) and (5) for **Motsamao**: the analysis of the derivations from bodily processes will be the same except for the argument structure. **Semantic Concepts** will be:

i. Cough – Bodily process – Body – Event
ii. Cough – Manner – Bodily process – Body – Event

e. **Nominalisation in Class 9:** See par. (1.2) no. (6) for **Tsamao**. With derivations from bodily processes, we find that the interpretations may differ: With Motion verbs the derivation is ambiguous between action and result. With the derivations from bodily processes, we find the following interpretations:

Result only: Class 7 and 9 with **kgohlela**
Class 7 and 9 with **thimola**
Class 6 with **hlatsa**

Action only: Class 9 with **hlatsa**

Action and Result: Class 9 with **bohla**
Class 9 with **phefumoloha**
Class 9 with **dumaela**
Class 7 with **lla**
Class 9 with **bobola**

With the derivation from **bobola** in Class 9 we find two derivations: **pobolo** and **pobodi** which refer to an act of groaning and an act of a groaner respectively.

The **Hierarchy of Semantic Concepts** will thus reflect the position above:

i. Cough – Bodily process – Body – Result
ii. Vomit – Bodily process- Body – Action
iii. Belch – Bodily process – Body – Result – Action
iv. With **pobodi**: Groan – Bodily process – Body – Animate – Action

f. **Nominalisation in Class 14**: See par. (1.2), no. (7) and (8) above for **botsamao** and **botsamai**: the derivation with verbs of bodily processes will follow the same analysis. **Semantic Concepts will be**: Quality (of state).

g. **Semantic Concepts:**
Class 1: Human
Class 7: Human – Intensive
Class 3: Event

Class 3: Manner of event

Class 9: Result, and / or Action

Class 14: Quality

(1.4.2) Bodily damage

	cl. 1	cl. 3	cl. 5	cl. 7	cl. 9	cl. 14 [-o]	cl. 14 [-i]
fokola	mofokodi	mofokolo		sefokodi	phokolo		bofokodi
kula	mokudi	mokulo		sekudi	kulo	bokulo	bokudi
foufala	mofoufadi	mofoufalo		sefoufadi	phoufalo	bofoufalo	bofoufadi
holofala	moholofadi	moholofalo			kgolofalo	boholofalo	boholofadi

fokola (be weak)

A. [Person]:

Class 1, 7: mofokodi, sefokodi (weak person)

B. [Inchoative state, Manner]:

Class 3: mofokolo (becoming weak, way of becoming weak)

C. [State]:

Class 9: phokolo (being weak, weakness)

D. [Quality]:

Class 14: bofokodi (quality of a weak person, weak nature)

kula (be ill)

A. [Person]:

Class 1, 7: mokudi, sekudi (patient, ill person)

B. [Inchoative state]:

Class 3: mokulo (becoming ill)

C. [State]:

Class 9: kulo (illness)

D. [Quality]:

Class 14: bokulo (quality of illness, sickliness)

bokudi (quality of a person ‘s sickliness)

foufala (be blind)

A. [Person]:

Class 1, 7: mofoufadi, sefoufadi (blind person)

B. [Inchoative state]:

Class 3: mofoufalo (becoming blind)

C. [State]:

Class 9: phoufalo (blindness)

D. [Quality]:

Class 14: bofoufalo (quality of blindness)

bofoufadi (quality of a person ‘s blindness)

holofala (be crippled, lame)

A. [Person]:

Class 1: moholofadi (cripple)

B. [Inchoative state]:

Class 3: moholofalo (becoming cripple)

C. [State]:

Class 9: kgolofalo (lameness)

D. [Quality]:

Class 14: boholofalo (quality of lameness)

boholofadi (quality of a person ‘s lameness)

The derivations from verbs of bodily damage have more or less the same anlysis as those derivations from State verbs in par.(1.1) above.

a. The **verbs of bodily damage**: See the analysis of the verb **hlahafala** in par. (1.1) no (1) above. The argument of the verbs of bodily damage is also animate, the event structure and the qualia are exactly the same e.g. with **fokola**: e_1 = state, formal quale = fokola (e_1, x). The semantic concepts will be e.g. for **fokola**: Weak – Bodily damage – Body .

b. **Nominalisation in Class 1**: See **mohlahafadi** in par. (1.1) no. (2). The analysis for a deverbative of bodily damage will reflect that analysis e.g. **mofokodi** will have a human argument, its event will be a state and its formal quale will be: **fokola** (e_1, x).Semantic concepts will be:
Weak – Bodily damage – Body – Human.

c. **Nominalisation in Class 7:** See par. (1.1) no. (3) for the analysis of **Sehlahafadi**. The analysis of e.g., **Sefokodi** will mirror this analysis. Its semantic concepts will be: Weak – Intensive – Bodily damage – Body – Human.

d. **Nominalisation in Class 3**: See par. (1.1) no.(4) and (5); a derivation like **mofokolo** will have the same analysis: note specifically the event structure which will be an inchoative state. The **semantic concepts** will be:
i. Weak – Bodily damage – Body – Inchoative – State
ii. Weak – Bodily damage – Body – Manner- Inchoative – State.

e. **Nominalisation in Class 9**: See par. (1.1) no. (6) for **tlhahafalo**. The analysis of i.a. **phokolo** will be the same. **Semantic Concepts**:
Weak – Bodily damage – Body – State.

f. **Nominalisation in Class 14**: See par. (1.1) no. (7) and (8). The analysis of e.g. **bokulo** and **bokud**i will be the same . **Semantic Concepts:**
i. bokulo: Ill – Bodily damage – Body – Quality –State.
ii. bokudi: Ill – Bodily damage – Body – Animate – Quality – State

g. **Semantic Concepts:**
Class 1: Human
Class 7: Human – Intensive

Class 3: Inchoative state

Class 3: Manner of inchoative state

Class 9: State

Class 14 with [-o]: Quality

Class 14 with [-I]: Quality – Animate

(1.5) Experiencer verbs

	cl. 1	cl. 3	cl. 5	cl. 7	cl. 9	cl.14[-o]	cl.14[-i]
thaba	mothabi			sethabi	thabo		bothabi
tshoha	motshohi		letshoho	setshohi		botshoho	botshohi
befa	mmefi		mabefi		pefo	bobefo	bobefi
swaba	moswabi		maswabi		tshwabo	boswabo	boswabi

thaba (be glad)

A. [Person]:

Class 1, 7: mothabi, sethabi (rejoicing person)

B. [State]:

Class 9: thabo (joy)

C. [Quality]:

Class 14: bothabi (quality of a person ‘s gladness)

tshoha (be afraid)

A. [Person]:

Class 1, 7: motshohi, setshohi (frightened person)

B. [State]:

Class 5: letshoho (fright)

C. [Quality]:

Class 14: botshoho (quality of fright)

botshohi (quality of a person ‘s fright)

befa (be angry)

A. [Person]:
Class 1: mmefi (angry person)

B. [State]:
Class 6, 9: mabefi, pefo (anger)

C. [Quality]:
Class 14: botshoho (quality of fright)
botshohi (quality of a person ‘s fright)

swaba (be sad)

A. [Person]:
Class 1: moswabi (sad person)

B. [State]:
Class 6: maswabi (sadness, grief)
Class 9: tshwabo (remorse, sadness)

C. [Quality]:
Class 14: boswabo (quality of sadness)
boswabi (quality of a person ‘s sadness)

The derivations from experiencer verbs follow the same analysis as the derivations from State verbs in par. (1.1) and from verbs of bodily damage in par. (1.4.2). The **Semantic Concepts** will be the following:

Verb **tshoha**: Afraid – Experiencer

Class 1: Afraid – Experiencer – Human
Class 7: Afraid – Intensive – Experiencer – Human
Class 9: See i.a. **thabo**: Glad – Experiencer – State .

The state interpretation is in Class 5 with **letshoho** and Class 6 and 9 with **mabefi**, **pefo**, as well as **maswabi**, **tshwabo**.

Class 14 with [-o]: Afraid – Experiencer – Quality
Class 14 with [-i]: Afraid – Experiencer – Animate – Quality

(2) Verbs of motion: verbs with a locative argument

(2.1) The locative refers to a location

	cl. 1	**cl. 3**	**cl. 5**	**cl. 7**	**cl. 9**	**cl. 14[-o]**	**cl.14[-i]**
dula	modudi	modulo		sedudi sedulo	tulo	bodulo	bodudi
ema	moemi	moemo		seemi seemo	kemo	boemo	boemi
sala	mosala		lesala			bosala	
fihla	mofihli	mofihlo		sefihli	phihlo		bofihli
kena	mokeni	mokeno	lekeno	sekeni	keno	bokeno	bokeni

dula (sit, stay)

A. [Person]:
Class 1, 7: modudi, sedudi (person who sits)

B. [Event, Manner]:
Class 3: modulo (sitting, way of sitting)

C. [Place]:
Class 7: sedulo (place to sit on, seat)
Class 9: tulo (place (a particular area), position)
Class 14: bodulo (sitting place, dwelling)

D. [Quality]:
Class 14: bodudi (state/quality of one who is sitting)

ema (stand)

A. [Person]:
Class 1, 7: moemi, seemi (one who stands)

B. [Event, Manner]:

Class 3: moemo (standing, way of standing)

C. [Quality]:

Class 7: seemo (stature, rank)

Class 14: boemo (stature)

boemi (state of one who stands)

D. [Result]:

Class 9: kemo (standing, stance)

E. [Place]:

Class 14: boemo (place to stand)

sala (remain behind, stay)

A. [Person]:

Class 1: mosadi (one who remains behind)

B. [Result]:

Class 5: lesala (remainder, thing left over)

C. [Quality]:

Class 14: bosala (state of being left alone)

fihla (arrive)

A. [Person]:

Class 1, 7: mofihli, sefihli (person who arrives)

B. [Event, Manner]:

Class 3: mofihlo (arriving, way of arriving)

C. [Result]:

Class 9: phihlo (arrival)

D. [Quality]:

Class 14: bofihli (state of being a new – comer)

kena (enter)

A. [Person]:

Class 1, 7: mokeni, sekeni (person who enters)

B. [Event, Manner]:

Class 3: mokeno (entering, way of entering)

C. [Result]:

Class 5: lekeno (access, admission)

D. [Result, Action]:

Class 9: keno (entry, act of coming or going in)

E. [Quality]:

Class 14: bokeno (way of entry)

bokeni (state of one who joins/enters)

Nominalisation from Fihla:

(1) **The verb <u>fihla</u>** (arrive):

Banna ba – fihlile toropong

(The men arrived in town)

fihla
ARGSTR = ARG 1 = x : phys. obj.
D – ARG 1 = y : location
EVSTR = E1 = e_1 : process
E2 = e_2 : state
Restr = Temporally ordered
Head = e_2
QUALIA = FORMAL = at (e_2,x , y,)
AGENTIVE = fihla_act (e_1, x)

Hierarchy of Semantic Concepts:

Arrive – Location – Motion

The lexical representation of **fihla** in no. (1) above, shows that the argument structure consists of two arguments in which one is a default argument i.e. a location (y). The event structure consists of two events (i.e., the process of arriving and the state). These events are temporally ordered in the chain of events. They are headed by the state event (e_2). The qualia features the formal which show state of arrival by the physical object at a certain location; and the agentive which show the act (process) of arriving.

(2) **Nominalisation in Class 1:**

Mofihli (person who arrives)

Mofihli toropong o – kgathetse

(The one who arrives in town is tired)

mofihli
ARGSTR = ARG 1 = x : human
D – ARG 1 = y : location

EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2
QUALIA = FORMAL = at (e_2, x, y)
AGENTIVE = fihla_act (e_1, x)

Hierarchy of Semantic Concepts:

Arrive – Location – Motion – Human

The lexical representation of **Mofihli** shows that the argument structure consists of two arguments (i.e., the human being who is arriving and the place where he arrived at). The event structure features two default events (i.e., the process of arriving and the state). These events are temporally ordered and they are being headed by the state (e_2) event. In the qualia, the formal quale show the state of arrival by the human at a certain location and the agentive show the act (process) of arriving by an individual.

(3) **Nominalisation in Class 7:**

Sefihli (one who arrives a lot)

Sefihli toropong se –kgathetse

(One who arrives frequently in town is tired)

sefihli
ARGSTR = ARG 1 = x : human
D – ARG 1 = y : location
EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2
QUALIA = FORMAL = at (e_2, x, y)
AGENTIVE = fihla_act_intensive (e_1, x)

Hierarchy of Semantic Concepts:

Arrive – Location – Intensive – Motion – Human

The lexical representation of **sefihli** in no. (3) above can be explained in the same way as in no. (2) above. The difference is only found in the agentive (i.e., the feature of [intensive] makes a distinction between the two).

(4) **Nominalisation in Class 3:**

Mofihlo (arriving)

Mofihlo toropong o–lokile (Arriving in town is in order)

mofihlo
ARGSTR = ARG 1 = e: r
D – ARG 1 = x : phys.obj
D – ARG 2 = y : location
EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2
QUALIA = FORMAL = (e_r, x, y)
AGENTIVE = fihla_at (e_1, x)

Hierarchy of Semantic Concepts:

Arrive – Location – Motion – Event

The lexical representation of **mofihlo** shows that the argument structure consists of three arguments (i.e., the reference of the event of arriving by itself and the default arguments which shows the object and the place of arriving). Two default events are noticed in the event structure (i.e., the process of arriving and the state). These events are temporally ordered and they are being headed by the state (e_2) event. In the qualia, the formal role gives the event and the agentive shows the act of arriving.

(5) **Nominalisation in Class 3: Manner:**

Mofihlo (way of arriving)

Mofihlo wa mapolesa toropong o – tshositse batho

(The way of arriving of the police in town frightened the people)

mofihlo
ARGSTR = ARG 1 = e : r
D – ARG 1 = x : phys. obj.
D – ARG 2 = y : location
EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2
QUALIA = FORMAL = (e_r, x, y)
AGENTIVE = fihla_Manner (e_1, x)

Hiearachy of Semantic Concepts:

Arrive – Manner – Location – Motion – Event

The lexical representation of **Mofihlo** in no. (5) above can be explained in the same way as in no. (4) above. They only differ in the agentive quale. The one in no.(5) added a [Manner] feature in the agentive quale, while the one in no. (4) does not have that feature.

(6) **Nominalisation in Class 9:**

Phihlo (arrival)

Phihlo ya dingaka naheng e – thabisitse setjhaba.

(The arrival of the doctors in the country pleased the people)

phihlo

ARGSTR = ARG 1 = e : r
D – ARG 1 = x : phys.obj
D – ARG 2 = y : location
EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2
QUALIA = FORMAL = fihla_result (e_r, x, y)
AGENTIVE = fihla_act (e_1, x)

Hierarchy of Semantic Concepts:

Arrive – Location – Motion – Result – Action

The lexical representation of **phihlo** in no. (6) above can also be explained in the same way as in no. (4). The only difference is in the formal quale. In no. (6) above the formal quale represents the result of the event in the argument structure; while in no. (4) above the formal quale represents only the event.

(7) **Nominalisation in Class 14:**

Bofihli (Quality of a newcomer)

Bofihli ba mophaphathehi motseng bo–mo–sitisa ho sebetsa.

(The quality of being a newcomer of the fugitive in the village hinders him to work).

bofihli
ARGSTR = ARG 1 = e : r
D – ARG 1 = x : human
D – ARG 2 = y : location
EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2
QUALIA = FORMAL = fihla_result_quality_animate (e_r, x, y)
AGENTIVE = fihla_act (e_1, x)

Hierarchy of Semantic Concepts:

Arrive – Location – Motion – Animate – Quality – State

The lexical representation of **bofihli** is explained in the same manner as in no. (4) above. The difference is in the formal quale. In no. (4), the formal quale represents the event and its participants while in no. (7) above, the formal quale represents the quality of the result of the event by an animate being.

The analysis from the **Motion verbs with location arguments** shows that they are more or less the same as with intransitive verbs, par. (1.2): Motion verbs: The exceptions with Motion verbs in this section are as follows:

a. The Motion verbs with a location argument has an achievement as an event i.e., a transition which leads to a state. The event structure of all these verbs will then represent two event, i.e. a process and a state.

b. The formal quale of **fihla** will show the location argument which is the attainment of the achievement and it is represented as [at (e_2, x, y)] , i.e., the person (x) has arrived (e_2) at a certain location (y).

c. **Nominalisation in Class 1:** cf. **Motsamai** in par. (1.2) of the intransitive verbs: the difference is in the event structure where **fihla** has a process and a state in all its derivations as indicated in no. (1) above. The formal quale will then represent this achievement as shown in no. (2) above.

d. **Nominalisation in Class 7**: the derivation has the same analysis as **Mofihli** except for the presence of the feature [Intensive] on the agentive quale.

e. **Nominalisation in Class 3:** See the analysis of **Motsamao** in par. (1.2) of intransitive verbs; except for the difference in the event structure as shown in no. (1) above, the analysis of **Mofihlo** follows the same pattern.

f. **Nominalisation in Class 9**: See **Tsamao** in par. (1.2) on intransitive verbs; no.(6). The analysis of **Phihlo** is similar except for the event structure.

g. **Nominalisation in Class 14 with suffix [-i]:** See, **botsamai** in par. (1.2) of the intransitive verbs; the analysis of **bofihli** is similar.

h. **Nominalisation in Class 14 with suffix [-o]:** there are two derivations with the affixes [bo-] and [-o]: In the first derivation the analysis is similar to **botsamao** in par. (1.2) of the intransitive verbs no. (8). The difference as above is with the event structure: derivations such as **boemo** (stature), **bosala** and **bokeno** will fit this analysis. They are to be interpreted as quality. In the second derivation an interpretation of place will be necessary in the case of **bodulo**, **tulo**, **sedulo**, **boemo**. The analysis will be as follows:

bodulo
ARGSTR = ARG 1 = x : place
D – ARG 1 = y : phys.obj
D – ARG 2 = z : location
EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2
QUALIA = FORMAL = at [x] (e_2, y, z)
AGENTIVE = dula_act (e_1, y)

Hierarchy of Semantic Concepts:

Sit – Location – Motion – Place

(2.2) The locative refers to source

	cl. 1	**cl. 3**	**cl. 5**	**cl. 7**	**cl. 9**	**cl.14[-o]**	**cl.14[-i]**
kgutla	mokgutli	mokgutlo		sekgutli	kgutlo	bokgutlo	bokgutli
baleha	mmalehi	mmaleho		sebalehi	paleho		bobalehi
tswa	motswi	motso		setswi		botso	botswi
tloha	motlohi	motloho		setlohi	tloho	botloho	botlohi
falla	mofalli	mofallo		sefalli	phallo phaladi	bofallo	bofalli

kgutla (return)

A. [Person]:

Class 1, 7: mokgutli, sekgutli (person who returns)

B. [Event, Manner]:

Class 3: mokgutlo (returning, way of returning)

C. [Result]:

Class 9: kgutlo (return)

D. [Quality]:

Class 14: bokgutlo (coming back)

bokgutli (state of one who returns)

E. [Place]:

Class 14: bokgutlo (place of coming, terminus)

baleha (flee, run away)

A. [Person]:

Class 1, 7: mmalehi, sebalehi (person who flees, refugee)

B. [Event, Manner]:

Class 3: mmaleho (fleeing, way of fleeing)

C. [Result]:

Class 9: paleho (flight)

D. [Quality]:

Class 14: bobalehi (state of a fugitive)

tswa (come out, go out)

A. [Person]:

Class 1, 7: motswi, setswi (person who comes out/goes out)

B. [Event, Manner]:

Class 3: motso (going/coming out, way of going/coming out)

C. [Place]:

Class 14: botso (place of coming out, exit)

D. [Quality]:

Class 14: botswi (state of one who goes/comes out)

tloha (go away, leave)

A. [Person]:

Class 1, 7: motlohi, setlohi (person who goes away)

B. [Event, Manner]:

Class 3: motloho (going away, way of going away)

C. [Result, Action]:

Class 9: tloho (departure, act of going away)

Class 14: botlohi (state of one who goes away)

botloho (state of going away)

falla (migrate, emigrate)

A. [Person]:

Class 1, 7: mofalli, sefalli (migrant)

B. [Event, Manner]:

Class 3: mofallo (migrating, way of migrating)

C. [Result]:

Class 9: phallo (migration)

phaladi (migration of people)

D. [Quality]:

Class 14: bofallo (state of migration)

Class 14: bofalli (state of migrating person)

Nominalisation from the verb Kgutla:

(1) **The verb <u>kgutla</u>** (return):

Ntate o–kgutlile motseng (Father returned from the village)

kgutla
ARGSTR = ARG 1 = x : phys. obj
D – ARG 1 = y : source
EVSTR = E1 = e_1 : process
E2 = e_2 : state
Restr = Temporally ordered
Head = e_2
QUALIA = FORMAL = from (e_2, x, y)
AGENTIVE = kgutla_act (e_1, x)

Hierarchy of Semantic Concepts:

Return – Source – Motion

The lexical representation of **kgutla** shows that in the argument structure, there are two arguments (i.e., physical object and a source). The event structure consists of the process and the state events. These events are temporally ordered; and they are being headed by the state (e_2) event. In the qualia, the formal quale represents the state from which these argument are coming. The agentive show the act (process) of returning.

(2) **Nominalisation in Class 1:**

Mokgutli (person who returns)

Mokgutli wa ntate motseng o–swabile.

(The one who returns of a father from the village is sad)

mokgutli

ARGSTR = ARG 1 = x : human
D – ARG 1 = y : source
EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2
QUALIA = FORMAL = from (e_2, x, y)
AGENTIVE = kgutla_act (e_1, x)

Hierarchy of Semantic Concepts:

Return – Source – Motion – Human

The lexical representation of **Mokgutli** in no. (2) above, shows that the argument structure consists of two arguments (i.e., the person who returns and the place from which he came). The event structure consists of the default events (i.e., process and the state). These events are temporally ordered and they are headed by the state (e_2) event. In the qualia, the formal quale represents the state from which the human came. The agentive quale shows the act (process) of a human being.

(3) **Nominalisation in Class 7:**

Sekgutli (one who returns a lot)

Sekgutli sa moprofeta motseng se – morolo

(The one who returns a lot of a prophet from the village is courageous)

sekgutli

ARGSTR = ARG 1 = x : human
D – ARG 1 = y : source

EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2

QUALIA = FORMAL = from (e_2, x, y)
AGENTIVE = kgutla_act_intensive (e_1, x)

Hierarchy of Semantic Concepts:

Return – Source – intensive – Motion – Human

The lexical representation of **Sekgutli** in no. (3) above, can be explained in the same way as in no. (2) above. The only difference is found in the agentive quale in which the [intensive] feature is present in no. (3) above, but not in no. (2).

(4) **Nominalisation in Class 3:**

Mokgutlo (returning)

Mokgutlo wa baphaphathehi naheng ya baditjhaba ebile toka.

(The returning of fugitives from foreign land was right)

mokgutlo
ARGSTR = ARG 1 = e : r
D – ARG 1 = x : phys. obj
D – ARG 2 = y : source
EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2
QUALIA = FORMAL = (e_r, x, y)
AGENTIVE = kgutla_act (e_1, x)

Hierarchy of Semantic Concepts:

Return – Source – Motion – Event

The lexical representation of **Mokgutlo** in no. (4) above, shows that the argument structure consists of three arguments in which two arguments are default. The first argument shows the reference of the event by itself. The event structure consists of the two default events (i.e., the process of returning and the state). These events are temporally ordered; and they are headed by state (e_2) event. In the qualia, the formal quale represents the identity of the arguments; and agentive quale shows the act (process) of returning.

(5) **Nominalisation in Class 3:**

Mokgutlo (way of returning)

Mokgutlo wa baphaphathehi naheng ya baditjhaba ebile toka.

(The wat of returning of fugitives from foreign land was right)

mokgutlo
ARGSTR = ARG 1 = e : r
D – ARG 1 = x : phys. obj
D – ARG 2 = y : source
EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2
QUALIA = FORMAL = (e_r, x, y)
AGENTIVE = kgutla_act_manner (e_1, x)

Hierarchy of Semantic Concepts:

Return – Manner – Source – Motion – Event

The lexical representation of **Mokgutlo** in no. (5) is explained in the same way as in no. (4) above. The only difference is found in the agentive quale i.e., the feature of [Manner] is added in no. (5) above.

(6) **Nominalisation in Class 9:**

Kgutlo (return)

Kgutlo ya kahlolo lehodimong e se e le haufi

(The return of judgment from heaven is near)

kgutlo

ARGSTR = ARG 1 = e : r
D – ARG 1 = x : phys.obj
D – ARG 2 = y : source

EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2

QUALIA = FORMAL = kgutla_result (e_r, x, y)
AGENTIVE = kgutla_act (e_1, x)

Hierarchy of Semantic Concepts:

Return – Source – Motion – Result – Action

The lexical representation of **Kgutlo** in no. (6) above is explained in the same way as in no. (4) above. The only difference is in the formal quale, in which the result of returning is highlighted in no. (6) above.

(7) **Nominalisation in Class 14: Place:**

Bokgutlo (place of coming back, terminus)

Bokgutlo ba motho lefatsheng ke lefu.

(The place of coming back of a person from earth is death)

bokgutlo
ARGSTR = ARG 1 = x : place
D – ARG 1 = y : human
D – ARG 2 = z : source
EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2
QUALIA = FORMAL = from [x] (e_2, y, z)
AGENTIVE = kgutla_act (e_1, y)

Hierarchy of Semantic Concepts:

Return – Source – Motion – Place

The lexical representation of **bokgutlo** in no. (7) above shows that the argument structure consists of three arguments (i.e., the place of coming back, the person who is returning and the source). The events are the process and the state. They are temporally ordered and they are also headed by the state (e_2).In the qualia, the agentive quale shows the act (process) of returning while the formal role specifies the place from which one came depicted as a state.

(8) **Nominalisation in Class 14: Quality:**

Bokgutlo (coming back)

Bokgutlo ba ntate merafong bo–re–thabisitse

(The coming back of father from the mines pleased us)

bokgutlo
ARGSTR = ARG 1 = e : r
D – ARG 1 = x : phys.obj
D – ARG 2 = y : source
EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2
QUALIA = FORMAL = kgutla_result_quality (e_r , x, y)
AGENTIVE = kgutla_act (e1, x)

Hierarchy of Semantic Concepts:

Return – Source – Motion – Quality – State

The lexical representation of **bokgutlo** in no. (8) above is explained in the same way as in (4) above. The only difference is that in the formal quale of no. (8) above, the quality of the result of returning is highlighted.

(9) **Nominalisation in Class 14: Quality:**

Bokgutli (state of one who returns)

Bokgutli ba mophaphathehi bo – lokile.

(The state of one who returns of a fugitive is in order)

bokgutli

ARGSTR = ARG 1 = e : r
D – ARG 1 = x : human
D – ARG 2 = y : source

EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2

QUALIA = FORMAL = kgutla_result_quality_animate (e_r, x, y)
AGENTIVE = kgutla_act (e_1, x)

Hierarchy of Semantic Concepts:

Return – Source – Motion – Animate – Quality – State

The lexical representation of **bokgutli** in no. (9) above is explained in the same way as in no. (4) and (8) above. The only difference is that in no. (9) above, the formal quale shows the quality result of an animate (i.e., the returning of a person). The analysis of the locative as referring to source follows the same analysis as the derivations from the locative as a location in par. (2.1) above.

(2.3) The locative refers to direction

	cl. 1	**cl. 3**	**cl. 5**	**cl. 7**	**cl. 9**	**cl.14[-o]**	**cl.14[-i]**
ya	moyi	moyo		seyi		boyo	boyi
tla	motli	motlo				botlo	botli

ya (go)

A. [Person]:

Class 1, 7: moyi, seyi (person who goes)

B. [Event, Manner]:

Class 3: moyo (going, way of going)

C. [Place]:

Class 14: boyo (place of going, destination)

D. [Quality]:

Class 14: boyi (state of person who goes)

tla (come)

A. [Person]:

Class 1: motli (person who comes)

B. [Event, Manner]:

Class 3: motlo (coming, way of coming)

C. [Place]:

Class 14: botlo (place of coming, destination)

D. [Quality]:

Class 14: botli (state of one who comes)

Nominalisation with the verb ya :

(1) **The verb <u>ya</u>** (go)

Kwete e – ya kerekeng. (A gentleman goes to church)

ya

ARGSTR =	ARG 1	= x : phys. obj
	D – ARG 1	= y : direction
EVSTR =	E1	= e_1 : process
	E2	= e_2 : state
	Restr	= Temporally ordered
	Head	= e_2
QUALIA =	FORMAL	= to (e_2, x, y)
	AGENTIVE	= ya_act (e_1, x)

Hierachy of Semantic Concepts:

Go – Direction – Motion

The lexical representation of **ya** in no. (1) above, shows that the argument structure consists of two arguments in which one is a default argument (i.e., a direction). The event structure consists of two events (i.e., the process of arriving and the state). These events are temporally ordered. They are headed by the state event (e_2). The qualia features the formal which shows the state with direction (to) ; and the agentive which show the act of going.

(2) **Nominalisation in Class 1:**

Moyi (one who goes)

Moyi wa kerekeng o – motlotlo .

(The one who goes of the church is proud)

moyi

ARGSTR	=	ARG 1	= x : human
		D – ARG 1	= y : direction
EVSTR	=	D – E1	= e_1 : process
		D – E2	= e_2 : state
		Restr	= Temporally ordered
		Head	= e_2
QUALIA	=	FORMAL	= to (e_2, x, y)
		AGENTIVE	= ya_act (e_1, x)

Hierarchy of Semantic Concepts:

Go – Direction – Motion – Human

In the lexical representation of **moyi**, the argument structure presents two arguments in which one is a default argument (i.e., a direction). The event structure consists of two events (i.e., the process of arriving and the state). These events are temporally ordered. They are headed by the state event (e_2). The qualia features the formal which shows the state of direction (**to**); and the agentive which shows the act of going.

(3) **Nominalisation in Class 7:**

Seyi (one who goes a lot)

Seyi sa mme toropong se–kgathetse.

(The one who goes a lot of a mother to town is tired)

seyi

ARGSTR	=	ARG 1 = x : human
		D – ARG 1 = y : direction
EVSTR	=	D – E1 = e_1 : process
		D – E2 = e_2 : state
		Restr = Temporally ordered
		Head = e_2
QUALIA	=	FORMAL = to (e_2, x, y)
		AGENTIVE = ya_act_intensive (e_1, x)

Hierarchy of Semantic Concepts:

Go – Motion – Direction – Intensive – Human

The lexical representation of **seyi** in no. (3) above can be explained in the same way as in no. (2) above. The only difference is found in the agentive quale (i.e., the feature of [Intensive] makes a distinction between the two).

(4) **Nominalisation in Class 3: Event:**

Moyo (going)

Moyo wa kwete kerekeng o–a–thabisa.

(The going of a gentleman to the church is pleasing)

moyo

ARGSTR	=	ARG 1 = e : r
		D – ARG 1 = x : phys. obj
		D – ARG 2 = y : direction
EVSTR	=	D – E1 = e_1 : process
		D – E2 = e_2 : state
		Restr = Temporally ordered
		Head = e_2
QUALIA	=	FORMAL = (e_r, x, y)
		AGENTIVE = ya_act (e_1, x)

Hierarchy of Semantic Concepts:

Go – Direction – Motion – Event

The lexical representation of **moyo** shows that the argument structure consists of three arguments (i.e., the reference of the event of going by itself and the two default arguments which show the object and the direction of going). There are two default events in the event structure (i.e., the process of going and the state). These events are temporally ordered and they are being headed by the state (e_2) event. In the qualia, the formal describes the event with the two arguments in the argument structure; and the agentive show the act of going.

(5) **Nominalisation in Class 3: Manner:**

Moyo (way of going)

Moyo wa kwena nokeng o–a–tshosa

(The way of going of a crocodile to the river is frightening)

moyo

ARGSTR = ARG 1 = e : r
D – ARG 1 = x : phys.obj
D – ARG 2 = y : direction

EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2

QUALIA = FORMAL = (e_r, x, y)
AGENTIVE = ya_act_manner (e_1, x)

Hierarchy of Semantic Concepts:

Go – Manner – Direction – Event

The lexical representation of **moyo** in (5) above can be explained in the same way as in no. (4) above. They only differ in the agentive quale. The one in no. (5) added a [Manner] feature in the agentive quale, while the one in no. (4) does not have that feature.

(6) **Nominalisation in Class 14: Place:**

Boyo (place of going, destination)

Boyo ba motho lehodimong ke letlotlo.

(The destination of a person to heaven is a treasure)

boyo

ARGSTR	=	AGR 1 = x : place
		D – ARG 1 = y : phys. obj
		D – ARG 2 = z : direction
EVSTR	=	D – E1 = e_1 : process
		D – E2 = e_2 : state
		Restr = Temporally ordered
		Head = e_2
QUALIA	=	FORMAL = to [x] (e_2, y, z)
		AGENTIVE = ya_act (e_1, y)

Hierarchy of Semantic Concepts:

Go – Direction – Motion – Place

The lexical representation of **boyo** in no. (6) above can be explained in the same way as in no. (4). The argument structure consists of three arguments in which two are the defaults. The first argument is the place; and the two defaults represent the direction and the physical object. In the event structure, the two default events are noticed (i.e., the process of going and the state). These events are temporally ordered. These events are headed by the state event (e_2). In the qualia, the formal quale is presented in showing the state event; and the agentive which shows the act (process of going).

(7) **Nominalisation in Class 14: State:**

Boyi (state of person who goes)

Boyi ba motho hole ha–bo–a–loka.

(The state of one who goes far away of a person is not in order)

boyi
ARGSTR = AGR 1 = e : r
D – ARG 1 = x : human
D – ARG 2 = direction
EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2
QUALIA = FORMAL = ya_result_quality_animate (e_r, x, y)
AGENTIVE = ya_act (e_1, x)

Hierarchy of Semantic Concepts:

Go – Motion – Direction – Animate – Quality – State

The lexical representation of **boyi** in no. (7) above, is explained in the same way as in no.(4) above. The only difference is that in no. (7) above, the formal quale shows the quality result of an animate (i.e., going of a person).

The derivation from these verbs follows the same analysis as the derivations from Motion verbs i.e., locative as a location in par. (2.1) above. The only difference will be the direction marker [to].

(3) **Transitive verbs**

(3.1) **Verbs of change of state**

	cl. 1	**cl. 3**	**cl. 5**	**cl. 7**	**cl. 9**	**cl. 14 [-o]**	**cl.14 [-i]**
roba	morobi	morobo		serobi	thobo	borobo	borobi
ngwatha	mongwathi	mongwatho		sengwathi sengwatho	ngwatho	bongwatho	bongwathi
ripitla	moripitli	moripitlo		seripitli	thipitlo	boripitlo	boripitli
thua	mothui	mothuo		sethui	thuo	bothuo	bothui
tabola	motabodi	motabolo		setabodi	tabolo	botabolo	botabodi
koba	mokobi	mokobo	lekobo	sekobi	kobi kobo	bokobo	bokobi

roba (break)

A. [Person]:

Class 1, 7: morobi, serobi (person who breaks)

B. [Event, Manner]:

Class 3: morobo (breaking, way of breaking)

C. [Action]:

Class 9: thobo (act of breaking)

D. [State]:

Class 14: borobo (state/property of breaking)

borobi (state/property of one who breaks)

ngwatha (break off a piece)

A. [Person]:

Class 1, 7: mongwathi, sengwathi (person who breaks off a piece)

B. [Event]:

Class 3: mongwatho (breaking off, way of breaking off)

C. [Result]:

Class 7: sengwatho (piece which has been broken off)

D. [Action]:

Class 9: ngwatho (act of breaking off)

E. [Quality]:

Class 14: bongwatho (state/property of breaking off)

bongwathi (state / property of person who breaks off)

ripitla (destroy)

A. [Person]:

Class 1, 7: moripitli, seripitli (destroyer)

B. [Event, Manner]:

Class 3: moripitlo (destroying, way of destroying)

C. [Action, Result]:

Class 9: thipitlo (destruction, act of destroying)

D. [Quality]:

Class 14: boripitlo (state/quality of destruction)

boripitli (state/quality of destroyer)

thua (smash)

A. [Person]:

Class 1, 7: mothui, sethui (person who smashes)

B. [Event, Manner]:

Class 3: mothuo (smashing, way of smashing)

C. [Action. Result]:

Class 9: thuo (smash, act of smashing)

D. [Quality]:

Class 14: bothuo (state/quality of smashing)

bothui (state/quality of person who smashes)

tabola (tear)

A. [Person]:

Class 1, 7: motabodi, setabodi (person who tears)

B. [Event, Manner]:

Class 3: motabolo (tearing, way of tearing)

D. [Quality]:

Class 14: botabolo (state/quality of tearing)

botabodi (state/property of person who tears)

koba (bend)

A. [Person]:

Class 1, 7: mokobi, sekobi (person who bends)

B. [Event, Manner]:

Class 3: mokobo (bending, way of bending)

C. [Action, Result]:

Class 5: lekobo (dent)

Class 9: kobo (something which is bent, act of bending)

D. [Artefact]:

Class 9: kobi (instrument of bending)

E. [Quality]:

Class 14: bokobo (state/quality of bending)

bokobi (state/quality of one who bends)

Nominalisation from roba:

(1) **The verb <u>roba</u> (**break):

Monna o–robile molamu

(The man broke the stick)

roba

AGRSTR = ARG 1 = x : animate
ARG 2 = y : phys. obj

EVSTR = E1 = e_1 : process
E2 = e_2 : state
Restr = Temporally ordered
Head = e_1

QUALIA = FORMAL = roba_result (e_2, y)
AGENTIVE = roba_act (e_1, x, y)

Hierarchy of Semantic Concepts:

Break – Change of state

In this lexical representation of **roba,** the argument structure shows that only living creatures (i.e., ARG 1) are capable of breaking any physical object (i.e., ARG 2).

The event structure involved with this verb, shows that the process of breaking is headed by e_1 (process event). This process is followed by the state of the broken object. These events are temporally ordered.

The qualia structure consists of the formal role which indicates the resulted state [e_2] of being broken of the physical object (y), and the agentive role which indicates the act of breaking which is a process (e_1) of the arguments (x,y).

(2) **Nominalisation in Class 1:**

Morobi (person who breaks)

Morobi wa digalase ke nna. (The breaker of the glasses is me)

morobi

ARGSTR	=	ARG 1 = x : human
		D – ARG 1 = y : phys.obj
EVSTR	=	D – E1 = e_1 : process
		D – E2 = e_2 : state
		Restr = Temporally ordered
		Head = e_2
QUALIA	=	FORMAL = roba_result (e_2, y)
		AGENTIVE = roba_act (e_1, x)

Hierarchy of Semantic Concepts:

Actor – Break – Change of state – Human

The lexical representation of the noun **morobi** consists of the argument structure with ARG 1 who is a human involved in a process of breaking. The qualia structure shows formal role (the resultant state of the broken phys.obj.) and the agentive (i.e., the act of breaking) in the event of breaking (e_1) by a human (x).

(3) **Nominalisation in Class 7:**

Serobi (person who breakS a lot)

Serobi sa dikopi ke mang? (The breaker of the cups is who?)

serobi

ARGSTR = ARG 1 = x : human
D – ARG 1 = y : phys. obj
EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2
QUALIA = FORMAL = roba_result (e_2, y)
AGENTIVE = roba_intensive_act (e_1, x)

Hierarchy of Semantic Concepts:

Actor – Intensive – Break – Change of state

The lexical representation of **serobi**, is the same as that of **morobi** in no. (1) above. The only difference is the feature [intensive] which is not there in Class 1.

(4) **Nominalisation in Class 3: Event:**

Morobo (breaking)

Morobo wa bana wa digalase ha–o–a–loka.

(The breaking of the children of the glasses is not in order)

morobo

ARGSTR = ARG 1 = e : r
D – ARG 1 = x : animate
D – AGR 2 = y : phys. obj
EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2
QUALIA = FORMAL = (e_r, x, y)
AGENTIVE = roba_act (e_1, x)

Hierarchy of Semantic Concepts:

Break – Change of state – Event

In this lexical representation, the argument structure of **morobo** consists of the reference of the event itself. There are also two default arguments which features animate and physical object. Two events are represented in the event structure (i.e., process and state).Two roles (i.e., formal and agentive) are represented in the qualia.The formal role identifies with ARG1.

(5) **Nominalisation in Class 3: Manner:**

Morobo (way of breaking)

Morobo wa monna wa molamu ha–ke–a–o–bona.

(The way of breaking of the man of the stick I did not see it)

morobo

ARGSTR = ARG 1 = e : r
D – ARG 1 = x : animate
D – ARG 2 = y : phys. obj

EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2

QUALIA = FORMAL = (e_r, x, y)
AGENTIVE = roba_act_manner (e_1, x)

Hierarchy of Semantic Concepts:

Break – Change of state – Manner – Event

In this lexical representation, the explanation is the same as in no. (4) above. The only difference is found in the qualia i.e., agentive role which shows the feature [manner] in no. (5).

(6) **Nominalisation in Class 9:**

Thobo (break, act of breaking)

Thobo ya ngwana ya galase ha–e–a–loka.

(The break of the child of the glass is not in order)

thobo
ARGSTR = ARG 1 = e : r
D – ARG 1 = x : animate
D – ARG 2 = y : phys. obj
EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_1
QUALIA = FORMAL = roba_result (e_r, x, y)
AGENTIVE = roba_act (e1, x)

Hierarchy of Semantic Concepts:

Break – Change of state – Result – Action

The lexical representation of **thobo**, shows the event as ARG 1 as well as two default arguments. The event structure consists of the process (e_1) event and the achievement (transition, e_2) event. These events are temporally ordered. In the qualia structure, the formal role is indicated as the resulting transition of **roba**, of the physical object with identity with ARG 1; and the agentive role is indicated as the act of breaking (which is the process).

(7) **Nominalisation in Class 14: Quality:**

Borobo (state/quality of breaking)

Borobo ba monna ba molamu ke bo bone.

(The property of breaking of the man of the stick I have seen it)

borobo
ARGSTR = ARG 1 = e : r
D – ARG 1 = x : animate
D – ARG 2 = y : phys. obj
EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2
QUALIA = FORMAL = roba_result_quality (e_r, x, y)
AGENTIVE = roba_act (e_1, x)

Hierarchy of Semantic Concepts:

Break – Change of state – Quality – State

In this lexical representation, the argument structure shows an event of breaking of a physical object in which the physical object is broken by an animate. The event structure comprises of the process (e_1) of breaking and the state (e_2) of being broken. These events are headed by (e_2) event in which they are temporally ordered. The qualia structure shows that the formal role depicts the result of the broken object as a quality of ARG 1, while the agentive depicted act (e_1) of breaking of (x) by the default argument (y).

(8) **Nominalisation in Class 14: Quality:**

Borobi (state/quality of a person who breaks)

Borobi ba ngwana ba pene ke–bo–bone.

(The quality of the person who breaks of the child of a pen I have seen it)

borobi

ARGSTR = ARG 1 = e : r
D – ARG 1 = x : animate
D – ARG 2 = y : phys. obj

EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2

QUALIA = FORMAL = roba_result_quality_animate (e_r, x y)
AGENTIVE = roba_act (e1, x)

Hierarchy of Semantic Concepts:

Actor – Break – Change of state – Quality – State

The lexical representation of **borobi** shows that the argument and event structure of this noun are the same as for **borobo.** The qualia roles are the same as for **borobo** except for the addition of the animate feature.

Notes on the verbs of change of state:

a. The verbs of change of state in the list above have the same entry as in no.(1) above. They consists of two arguments in which one is an animate argument. The event structure consists of the process and the change state. Then the qualia is made up of the formal quale in which the animate argument changes from the

process (e_1) to the resulted state (e_2, y); and the agentive quale that shows the act of an animate breaking the object (i.e., (e_1, x, y)).

b. **Nominalisation in Class 1:** two arguments are found as in no. (1), above. The first argument specifies the human as compared to the animate of the verb in no.(2), above. The semantic concept has to refer to this feature, i.e., human which is related to the presence of the affix **mo-** and **–i.**

c. **Nominalisation in Class 7:** the only difference from (2) with the analysis in Class 1 above related to the feature [intensive] on the verb **roba** in the formal qualia in no.(3) above. The presence of the prefix **se-** forces this interpretation while the suffix **[-i]** refers to the feature [human].

d. **Nominalisation in Class 3: in no. (4) and (5) above:** the argument of morobo refers to the event itself (e:r) where [r] indicates the reference of the argument. The event structure of the verb indicates a process that develops to the state .The analysis in no.(5) is the same as in no.(4) except for the presence of the feature [manner] on the verb **roba** in the agentive quale.

e. **Nominalisation in Class 9: in no.(7) and (8) above:** the analysis of the two derivations differs only because of the presence of the suffixes [-o] and [-i]. The prefix [bo-] forces an interpretation of [quality] on the two derivations while the suffix [-i] refers to an animate being as in no. (2) and (3) above. This difference is reflected in the formal qualia where **borobo** has the feature [quality] on the verb, but **borobi** has the features [quality] and [animate] on the verb because of the suffix [-i].

f. **Nominalisation in class 9 no. 6:** the analysis of no. (6) is the same as the one in no. (4) except for the formal quale: the formal quale is the result of breaking with identity with ARG1. The agentive role still reflects the act of breaking.

g. **Semantic Concepts with verbs of change of state:**
Class 1: Human, Actor (person)
Class 7: Human, Actor (intensive)

Class 3: Event

Class 3: Manner of event

Class 9: Action, Result

Class 14 with [-o]: Quality

Class 14 with [-i]: Quality of a person

(3.2) Verbs of change of possession

	cl. 1	cl. 3	cl. 5	cl. 7	cl. 9	cl.14[-o]	cl.14[-i]
hasa	mohasi	mohaso	lehasa	sehasi	kgaso	bohaso	bohasi
aba	moabi	moabo		seabi seabo	kabo	boabo	boabi
fumana	mofumani	mofumano		sefumani	phumano	bofumano	bofumani
utswa	moutswi	moutso		seutswi	kutso	boutso	boutswi
fetola	mofetodi	mofetolo		sefetodi sefetolo	phetolo	bofetolo	bofetodi
amohela	moamohedi	moamohelo		seamohedi	kamohelo	boamohelo	boamohedi
kgetha	mokgethi	mokgetho	lekgetho	sekgethi	kgetho	bokgetho	bokgethi

hasa (spread, sow)

A. [Person]:

Class 1, 7: mohasi, sehasi (sower, spreader)

Class 5: lehasa (person who disperses)

B. [Event, Manner]:

Class 3: mohaso (spreading, way of spreading)

C. [Result, Action]:

Class 9: kgaso (act of spreading, broadcast)

D. [Quality]:

Class 14: bohaso (state / quality of spreading)

bohasi (state / quality of one who spreads)

aba (distribute, divide)

A. [Person]:

Class 1, 7: moabi, seabi (person who divides)

B. [Event, Manner]:

Class 3: moabo (dividing, way of dividing)

C. [Result]:

Class 7: seabo (part which is divided, portion)

D. [Result, Action]:

Class 9: kabo (distribution, act of distributing)

E. [Quality]:

Class 14: boabo (state / quality of dividing)

boabi (state / quality of one who divides)

fumana (find)

A. [Person]:

Class 1, 7: mofumani, sefumani (finder, discoverer)

B. [Event, Manner]:

Class 3: mofumano (finding, way of finding)

C. [Result, Action]:

Class 9: phumano (act of finding, find, discovery)

D. [Quality]:

Class 14: bofumano (state / quality of finding)

bofumani (state / quality of one who finds)

utswa (steal)

A. [Person]:

Class 1, 7: moutswi, seutswi (stealer, thief)

B. [Event, Manner]:

Class 3: moutso (stealing, way of stealing)

C. [Result]:

Class 9: kutso (theft, act of stealing)

D. [Quality]:

Class 14: boutso (state / quality of stealing)

boutswi (state / quality of thief)

fetola (change)

A. [Person]:

Class 1, 7: mofetodi, sefetodi (translator)

B. [Event, Manner]:

Class 3: mofetolo (changing, translating, way of translating / changing)

C. [Result]:

Class 7: sefetolo (thing which is changed)

D. [Result, Action]:

Class 9: phetolo (change, translation, act of changing / translating)

E. [Quality]:

Class 14: bofetolo (state / quality of translating/changing)

bofetodi (state / quality of translator, habit of changing)

amohela (receive)

A. [Person]:

Class 1, 7: moamohedi, seamohedi (receiver, recipient)

B. [Event, Manner]:

Class 3: moamohelo (receiving, way of receiving)

C. [Result, Action]:

Class 9: kamohelo (reception, welcome, act of receiving)

D. [Quality]:

Class 14: boamohelo (state / quality of receiving)

boamohedi (state / quality of receiver)

kgetha (choose)

A. [Person]:

Class 1, 7: mokgethi, sekgethi (chooser, selector)

B. [Event, Manner]:

Class 3: mokgetho (choosing, way of choosing)

C. [Result]:

Class 5: lekgetho (thing which is chosen)

D. [Result, Action]:

Class 9: kgetho (choice, selection, act of choosing)

E. [Quality]:

Class 14: bokgetho (state / quality of choosing)

bokgethi (state / quality of chooser, partiality, bias)

Nominalisations from the verb utswa:

(1) **The verb <u>utswa</u> (steal):**

Bana ba utswitse dipompong. (The children stole the sweets)

utswa

ARGSTR = ARG 1 = x : human
ARG 2 = y : phys. obj

EVSTR = E1 = e_1 : process
E2 = e_2 : state
Restr = Temporally ordered
Head = e_1

QUALIA = FORMAL = utswa_result (e_2, y)
AGENTIVE = utswa_act (e_1, x, y)

Hierarchy of Semantic Concepts:

Steal – Change of possession

The lexical representation of **utswa**, shows that the argument structure has two arguments (i.e., human and the physical object).The first argument shows that someone has to do the act of stealing; while the second argument shows the physical object to be stolen. The event structure features two events (i.e., the process of stealing and the state of the stealing). In this case the events are temporally ordered. The qualia features two quale roles (i.e., formal which is the result of stealing and agentive role, which is the act of stealing).

(2) **Nominalisation in Class 1:**

Moutswi (person who steals, thief)

Moutswi wa koloi ke mang ? (The thief of the car is who?)

moutswi

ARGSTR	=	ARG 1 = x : human
		D – ARG 1 = y : phys. obj
EVSTR	=	D – E1 = e_1 : process
		D – E2 = e_2 : state
		Restr = Temporally ordered
		Head = e_1
QUALIA	=	FORMAL = utswa_result (e_2, y)
		AGENTIVE = utswa_act (e_1, x)

Hierarchy of Semantic Concepts:

Actor – Steal – Change of possession – Human

The lexical representation shows that the argument structure of **moutswi** consists of one default argument which is the object that can be stolen and one argument i.e. human, who steals the physical object. The event structure features two events (i.e., the process and the state of stealing). The qualia consists of the formal (i.e., the result of stealing) and agentive quale (i.e., the act of stealing (e_1, x)).

(3) **Nominalisation in Class 7:**

Seutswi (a person who steals a lot)

Seutswi sa makoloi ke mang?

(The stealer of the cars is who?)

seutswi
ARGSTR = ARG 1 = x
D – ARG 1 = y: phys.obj
EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_1
QUALIA = FORMAL = utswa_result (e_r, x, y)
AGENTIVE = utswa _ act_intensive (e_1, x)

Hierarchy of Semantic Concepts:

Actor – Intensifier – Steal – Change of possession - Human

The lexical representation of **seutswi** is the same as no. (2) above. The only difference is the agentive role of **seutswi** which has an additional feature **intensive**.

(4) **Nominalisation in class 3:**

moutso (stealing)

Moutso wa bana wa dibuka ha-o-motle

(The stealing of the children of the books is not good)

moutso
ARGSTR = ARG 1 = e : r
D – ARG 1 = x : human
D – ARG 2 = y : phys. obj
EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_1
QUALIA = FORMAL = (e_r, x, y)
AGENTIVE = utswa_act (e_1, x)

Hierarchy of Semantic Concepts:

Steal – Change of possession – Event

From the above structure of **moutso**: the argument structure shows a reference of the event, a default argument representing a human who steals and a default argument which represents the physical objects to be stolen. The event structure features the process of stealing and the state of stealing. The qualia consists of the formal and the

agentive, representing the act of stealing. The formal role represents the event of stealing.

(5) **Nominalisation in Class 3: Manner:**

Moutso (way of stealing)

Moutso wa banna wa makoloi o jwang?

(The way of stealing of the men of the cars is how?)

moutso

ARGSTR = ARG 1 = e : r
D – ARG 1 = x : human
D – ARG 2 = y : phys. obj

EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered (e_2, e_1)
Head = e_1

QUALIA = FORMAL = (e_r, x, y)
AGENTIVE = utswa_act_manner (e_1, x)

Hierarchy of Semantic Concepts:

Steal – Change of possession – Manner – Event

This lexical representation is the same as no. (4) above, the only difference lies in the agentive quale, as the event is explained in terms of the [manner] feature.

(6) **Nominalisation in Class 9:**

Kutso (theft)

Kutso ya banna ya makoloi ha–e–a–loka.

(Theft of the men of cars is not in order)

kutso

ARGSTR = ARG 1 = e : r
D – ARG 1 = x : human
D – ARG 2 = y : phys. obj

EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_1

QUALIA = FORMAL = utswa_result (e_r, x, y)
AGENTIVE= utswa_act (e_1, x)

Hierarchy of Semantic Concepts:

Steal – Change of possession – Result – Action

The lexical structure of **kutso** above, can be explained as follows: the argument structure consists of two default arguments which represent human being and the physical object that is stolen AGR1 makes a reference to the event itself. The event structure consists of the process and the state. These events are temporally ordered and the qualia features two quale roles (i.e., formal showing the result and agentive showing the act of stealing).

(7) **Nominalisation in Class 14 with suffix [-o]: Quality:**

Boutso (state/quality of stealing)

Boutso ba monna ba tjhelete bo bobe.

(The quality of stealing of the man of money is bad)

boutso

ARGSTR = ARG 1 = e : r
D – ARG 1 = x : human
D – ARG 2 = y : phys. obj

EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_1

QUALIA = FORMAL = utswa_result_qualia (e_r, x, y)
AGENTIVE= utswa_act (e_1, x)

Hierarchy of Semantic Concepts:

Steal – Change of possession – Quality – State

Boutso, as a noun shows that the argument structure consists of three arguments (of which two are defaults).The event structure consists of two default events (i.e., the process (e_1) and the state (e_2).These events are temporally ordered. The formal quale represents the quality of the result of stealing and the agentive quale shows the act of stealing.

(8) **Nominalisation in Class 14 with suffix [-i]:**

Boutswi (state/quality of a thief)

Boutswi ba monna ba koloi ha–bo–a–loka.

(The state of a thief of a man of a car is not in order)

boutswi

ARGSTR = ARG 1 = e : r
D – ARG 1 = x : human
D – ARG 2 = y : phys. obj

EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_1

QUALIA = FORMAL = utswa_result_quality_animate (e_r, x, y)
AGENTIVE = utswa_act (e_1, x)

Hierarchy of Semantic Concepts:

Actor – Steal – Change of possession – State

The lexical representation of **boutswi** shows that the argument structure consists of three argument in which two arguments are default arguments (i.e., human and physical object). The event structure is the same as that of no. (7) above. The only difference is noticed in the qualia in the formal quale which shows the result of the quality of an animate.

Notes on verbs of change of possession:

a. The verbs of change of possession in the list above have the same analysis as the verb **utswa** in no. (1) as the arguments involve animate and any physical object. The event structure features a process and state. The qualia have a formal and agentive role which are the same in all the verbs of change of possession.

b. **Nominalisation in Class 1:** the interpretation is that of **human** due to the presence of [-i]. The analysis is the same as in no.(1) above except for one default argument.

c. **Nominalisation in Class 7:** the analysis reflects the one in no.(2) above except for the agentive qualia: the presence of the prefix [se-] forces the feature [intensive] on the verb **utswa**.

d. Nominalisation in Class 3: the argument of **moutso** in both no.(4) and (5) above refers to the event of stealing (r = reference, e = event). This argument is reflected in the formal quale as (e_r, x, y). The analysis in no. (5) is the same as in no. (4) except for the presence of the feature [manner] on the verb **moutso** in the agentive.

e. **Nominalisation in Class 9: in no. (6)**: the analysis is the same as in the case of the event **moutso** in no.(4) above except for the formal quale: this formal quale has to represent the result of the stealing. The agentive role still reflects the act of stealing.

f. **Nominalisation in Class 14: in no. (7) and (8)**: the analysis may be compared with the one in no. (4) above with the following differences: **boutswi** has an animate feature in the formal quale; while **boutso** has no such feature. The agentive quale has to represent the feature [quality (of the state)] in both derivations but with **boutswi** in no. (8) an added feature of [animate] has to be present because of the suffix [-i]. The prefix [bo-] forces the interpretation of quality (of a state).

g. **Semantic Concepts with verbs of change of possession**

Class 1: Human, Actor (person)
Class 7: Human, Actor (intensive)
Class 3: Event
Class 3: Manner of event
Class 9: Action, Result
Class 14 with [-o]: Quality of state
Class 14 with [-i]: Quality of person

(3.3) Verbs of creation

	cl. 1	cl. 3	cl. 5	cl. 7	cl.9	cl.14[-o]	cl.14[-i]
aha	moahi	moaho	leaho	seaho	kaho	boaho	boahi
bopa	mmopi	mmopo	lebopi	sebopi	popo	bobopo	bobopi
betla	mmetli	mmetlo		sebetli	petlo	bobetlo	bobetli
rathola	morathodi	moratholo		serathodi	thatolo	boratholo	borathodi
sila	mosidi	mosilo	lesilo	sesidi	tshilo	bosilo	bosidi
duba	modubi	modubo		sedubi	tubo	bodubo	bodubi
bina	mmini	mmino		sebini	pina		bobini
roka	moroki	moroko		seroki	thoko	boroko	boroki
pheha	mophehi	mopheho		sephehi	pheho	bopheho	bophehi

aha (build)

A. [Person]:

Class 1, 7: moahi, seahi (builder)

B. [Event, Manner]:

Class 3: moaho (constructing, way of building)

C. [Result]:

Class 5: leaho (dwelling)

Class 7: seaho (that which is built)

D. [Result, Actlon]:

Class 9: kaho (construction, act of building)

E. [Quality]:

Class 14: boaho (state/quality of building)

boahi (state/quality of builder, citizenship)

F. [Place]:

Class 14: boaho (place of building (dwelling))

bopa (form, mould)

A. [Person]:

Class 1, 7: mmopi, sebopi (potter, moulder)

B. [Event, Manner]:

Class 3: mmopo (forming, way of moulding)

C. [Result]:

Class 5: lebopi (formative (in grammar))

D. [Result, Action]:

Class 9: popo (formation, act of forming)

E. [Quality]:

Class 14: bobopo (state/quality of moulding)
bobopi (state/quality of potter)

betla (carve)

A. [Person]:

Class 1, 7: mmetli, sebetli (carver, carpenter)

B. [Event, Manner]:

Class 3: mmetlo (carving, manner of carving)

C. [Result, Action]:

Class 9: petlo (a carving, act of carving)

D. [Quality]:

Class 14: bobetlo (state/quality of carving)
bobetli (state/quality of carpenter)

rathola (brew)

A. [Person]:

Class 1, 7: morathodi, serathodi (beer brewer)

B. [Event, Manner]:

Class 3: moratholo (brewing, way of brewing)

C. [Result, Action]:

Class 9: thatolo (brew, act of brewing)

D. [Quality]:

Class 14: boratholo (state/quality of brewing)

borathodi (state/quality of beer brewer, brewer ‘s work)

sila (grind)

A. [Person]:

Class 1, 7: mosidi, sesidi (grinder, miller)

B. [Event, Manner]:

Class 3: mosilo (grinding, way of grinding)

C. [Instrument]:

Class 5, 9: lesilo, tshilo (instrument of grinding)

D. [Result, Action]:

Class 9: tshilo (act of grinding, a grinding)

E. [Quality]:

Class 14: bosilo (state/quality of grinding)

bosidi (state/quality/work of grinder)

duba (knead)

A. [Person]:

Class 1, 7: modubi, sedubi (kneader)

B. [Event, Manner]:

Class 3: modubo (kneading, way of kneading)

C. [Result, Action]:

Class 9: tubo (mixture, act of kneading)

D. [Quality]:

Class 14: bodubo (state/quality of kneading)

bodubi (state/quality of kneader)

bina (sing, dance)

A. [Person]:

Class 1, 7: mmini, sebini (dancer, singer)

B. [Event, Manner]:

Class 3: mmino (singing, way of singing)

C. [Result, Action]:

Class 9: pina (song, act of singing)

D. [Quality]:

Class 14: bobini (state/quality/work of singer)

roka (praise)

A. [Person]:

Class 1, 7: moroki, seroki (poet, one who sings praises)

B. [Event, Manner]:

Class 3: moroko (praising, reciting, way of praising /reciting)

C. [Result, Action]: thoko (praise, act of praising)

D. [Quality]:

Class 14: boroko (state/quality of praising)

boroki (state/quality/work of praiser)

pheha (cook)

A. [Person]:

Class 1, 7: mophehi, sephehi (cook

B. [Event, Manner]:

Class 3: mopheho (cooking, way of cooking)

C. [Result]:

Class 7: sepheho (cooked food, thing which is cooked)

D. [Result, Action]:

Class 9: pheho (a cooking, act of cooking)

E. [Quality]:

Class 14: bopheho (state/quality of cooking)

bophehi (state/quality/work of cook)

Nominalisation with the verb aha:

(1) **The verb <u>aha</u>** (build)

Monna o–ahile ntlo. (The man built a house)

aha

ARGSTR =	ARG 1	= x : human
	ARG 2	= y : artifact
	D – ARG 1	= z : material
EVSTR =	E1	= e_1 : process
	E2	= e_2 : state
	Restr	= Temporally ordered
	Head	= e_2
QUALIA =	FORMAL	= exist (e_2, y)
	AGENTIVE	= aha_act (e_1, x)

Hierarchy of Semantic Concepts:

Build – Creation

The semantics of **aha** shows the interaction of the arguments in the relations specified by the qualia. This verb denotes a transition between sub events (i.e., a process of building followed by the existence of the object constructed). It has two arguments (ARG 1 and ARG 2) and a default argument (D–ARG) which participates in the relations of the qualia.

ARGSTR shows the syntactic subject and object and the default argument (D–ARG). The events are temporally ordered with the process of building being the head of the event. The qualia is represented by the formal (denoting the existence of the artifact in a state event in (e_2) and the agentive (showing the act of building in (e_1) by an animate.

(2) **Nominalisation in Class 1:**

Moahi (builder)

Moahi wa ntlo ke mang? (Builder of house is who?)

moaho

ARGSTR = ARG 1 = x : human
D – ARG 1 = y : artifact
D – ARG 2 = z : material

EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2

QUALIA = FORMAL = exist (e_2, y)
GENTIVE = aha_act (e_1, x)

Hierarchy of Semantic Concepts:

Actor – Build – Creation – Human

The lexical representation of the nouns **moahi** consists of the argument structure of a human (ARG 1), who is involved in a process of building, and two default arguments. The event structure shows the process and state events with process as head. The qualia structure shows the agentive role (i.e., the act of building) in the event of building (e_1) by an individual (x); and the formal role shows the existence of the artifact as a result of the building.

(3) **Nominalisation in Class 7:**

Seahi (master builder)

Seahi sa matlo ha–ke–se–tsebe.

(Builder of houses I do not know him)

seahi

ARGSTR = ARG 1 = x : human
D – ARG 1 = y : artifact
D – ARG 2 = z : material

EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_1

QUALIA = FORMAL = exist (e_2, y)
AGENTIVE = aha_act_intensive (e_1, x)

Hierarchy of Semantic Concepts:

Actor – Intensifier – Build – Creation – Human

In terms of the explanation of the lexical representation of **seahi**, see no. (2) above as it is the same as no. (3) above; the only difference is in the agentive quale in which the feature [intensive] separates the two (i.e. no. (2) and no. (3).

(4) **Nominalisation in Class 3:**

Moaho (constructing)

Moaho wa monna wa ntlo o–motle.

(The constructing of the man of the house is good)

moaho

ARGSTR = ARG 1 = e : r
D – ARG 1 = x : human
D – ARG 2 = y : artifact
D – ARG 3 = z : material

EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_1

QUALIA = FORMAL = (e_r, x, y)
AGENTIVE = aha_act (e_1, x)

Hierarchy of Semantic Concepts:

Build – Creation – Event

Within the structure for **moaho** above:

- ARG 1 refers to the event of building;
- It has also three default arguments of which one refers to an animate (x) and the others refers to the artifact (y) and the material of building (z).
- The event structure has two default events, i.e., process and state.
- These events have a relation of being temporally ordered sub events.
- e_1 heads the equation of sub events.
- The agentive quale indicates how it came to exist, i.e. by the act of building by (x).
- The formal quale refers to the event of building (by **x** resulting in **y**)

(5) **Nominalisation in Class 3: Manner:**

Moaho (way of constructing)

Moaho wa banna wa ntlo ha–ke–o–rate.

(The men ‘s way of building a house I do not like it)

moaho

ARGSTR =	ARG 1 = e : r	
	D – ARG 1 = x : human	
	D – ARG 2 = y : artifact	
	D – ARG 3 = z : material	
EVSTR =	D – E1	= e_1 : process
	D – E2	= e_2 : state
	Restr	= Temporally ordered
	Head	= e_1
QUALIA =	FORMAL	= (e_r, x, y)
	AGENTIVE	= aha_act_manner (e_1, x)

Hierarchy of Semantic Concepts:

Manner – Build – Creation – Event

In terms of the lexical representation, see no. (4) above, as the explanation is the same as no. (5). The difference lies in the agentive quale with the feature [manner] separating the two i.e., no. (4) and (5).

(6) **Nominalisation in Class 5, 7 and 9:**

Leaho, seaho, kaho (dwelling, home, construction)

Kaho ya monna ya ntlo e–ntle.

(The man ‘s construction of the house is good)

leaho
seaho
kaho

ARGSTR	=	ARG 1 = e : r
		D – ARG 1 = x : human
		D – ARG 2 = y : artifact
		D – ARG 3 = z : material
EVSTR	=	D – E1 = e_1 : process
		D – E2 = e_2 : state
		Restr = Temporally ordered
		Head = e_1
QUALIA	=	FORMAL = aha_result (e_r, x, y)
		AGENTIVE = aha_act (e_1, x)

Hierarchy of Semantic Concepts:

Build – Create – Result – Action

Kaho is a complex type composed of process and state and related by the temporal relation in the event structure of temporally ordered sub events. ARG 1 refers to the event of building. The argument structure have also three default arguments i.e., artifact, material and animate. The second argument reflectsthe artifact that has been built; while the third argument shows the material used in the becoming of the artifact; the first default reflects the builder of the artifact. The event structure have two default events (i.e., process and state) constituting the transition event denoted by the verb **aha;** these events are temporally ordered. The formal qualia role refers to the result of the building event (e_r). The agentive qualia role refers to process (e_1) of building of (y) by (x). The lexical representation of **leaho**, **seaho** may be treated as that of **kaho**.

(7) **Nominalisation in Class 14 with suffix [-o]: Place:**

Boaho (place of building, dwelling)

Boaho ba banna ba ntlo ha–ke–bo–tsebe.

(The men ‘s place of building the house I do not know it)

boaho

ARGSTR	=	ARG 1 = x : place
		D – ARG 1 = y : human
		D – ARG 3 = z : artifact
EVSTR	=	D – E1 = e_1 : process
		D – E2 = e_2 : state
		Restr = Temporally ordered
		Head = e_1
QUALIA	=	FORMAL = exist [x] (e_2, y, z)
		AGENTIVE = aha_act (e_1, y)

Hierarchy of Semantic Concepts:

Build – Create – Place

Within the structure of **boaho** above: three arguments are noticed, in which, the first argument shows the building as a place ; the first default argument shows the individual who builds; while the third argument is the default argument which shows the artifact, the building. Two default events (i.e., process and state) are temporally ordered, there is a formal quale and agentive quale which show the existence of a place and the process of building the building respectively.

(8) **Nominalisation in Class 14 with suffix [-o]:Quality**

Boaho (state/quality of building)

Boaho ba banna ba ntlo bo botle.

(The quality of building of the men of the house is good)

boaho

ARGSTR = ARG 1 = e : r
D – ARG 1 = x : human
D – ARG2 = y : artifact

EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_1

QUALIA = FORMAL = aha_result_quality (e_r, x, y)
AGENTIVE = aha_act (e_1, x)

Hierarchy of Semantic Concepts:

Build – Create – Quality – State

Within the structure of **boaho**, above:

- three arguments are presented, the first argument shows the reference of the event itself; the default argument (i.e., human) and the default argument (i.e., artifact). The formal role gives the quality of the result of the building event (e_r).

(9) **Nominalisation in Class 14 with the suffix [-i]:**

Boahi (state/quality of builder, citizenship)

Boahi ba banna ba ntlo bo botle.

(The quality of builder of the men of the house is good)

boahi

ARGSTR = ARG 1 = e : r
D – ARG 1 = x : human
D – ARG 2 = y : artifact

EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_1

QUALIA = FORMAL = aha_result_quality_animate (e_r, x, y)
AGENTIVE = aha_act (e_1, x)

Hierarchy of Semantic Concepts:

Actor – Build – Create – Quality – State

The lexical representation of **boahi** is the same as no. (8) except for the feature [animate] in the agentive role.

Notes on verbs of creation

a. See par. (3.2) above on verbs of change of possession: the verbs of creation differ from the verbs of change of possession only with regard to the argument structure: the arguments of verbs of creation are three in number. This includes two arguments (i.e., human and artifact) and a default argument.

b. **Nominalisation in Class 1**: See the analysis of **morobi** in verbs of change of state in par. (3.1) no. (1) above as well as **moutswi** in verbs of change of possession in par. (3.2) no. (2) above. The only difference is the number of arguments in the argument structure.

c. **Nominalisation in Class 7:** See also the analysis of **serobi** in verbs of change of state in no. (3) above and **seutswi** in verbs of change of possession in no. (3) above: They differ in terms of the number of arguments.

d. **Nominalisation in Class 3**: the argument of **moaho** in no. (4) and (5) above refers to the event of building and the manner of building. See the analysis of **moutso**, in the verbs of change of possession in par. (3.2) no. (3) above. The only difference is in the argument structure (i.e., the number of arguments).

e. **Nominalisation in Class 9:** this will include nominals from Class 5 and 7. The analysis is as in no. (4) except for the formal quale: the formal quale is a result of building/dwelling. The agentive role still reflects the act of building.

f. **Nominalisation in Class 14 no. (7), no. (8) and (9):** the analysis may be compared with the one in no. (4) above with the following differences: **boaho** has a place argument, **boaho** with the state / quality of the building and **boahi** with the state / quality of builder. The suffix [-o] in no. (7) and (8) shows a distinction between a place and quality of building; while the suffix [-i] in no. (9) above shows an animate being [human] (i.e., a builder).

g. **Semantic Concepts with verbs of Creation**

Class 1: Human, Actor (person)

Class 7: Human, Actor (intensive)

Class 3: Event

Class 3: Manner of event

Class 5 and 7: Result

Class 9: Result, Action

Class 14 with [-o]: Quality of building/Place

Class 14 with [-i]: Quality of builder

(3.4) Verbs of perception

	cl. 1	**cl. 3**	**cl. 5**	**cl.7**	**cl. 9**	**cl.14[-o]**	**cl.14[-i]**
bona	mmoni	mmono	lebono	seboni	pono	bobono	boboni
utlwa	moutlwi	moutlo	leutlwa	seutlwi	kutlo	boutlo	boutlwi
nkga	monkgi	monkgo		senkgi senkgo	nkga	bonkgo	bonkgi
sheba	moshebi	moshebo		seshebi	tjhebo	boshebo	boshebi
hlahloba	mohlahlobi	mohlahlobo			hlahlobo	bohlahlobo	bohlahlobi
lemoha	molemohi	molemoho		selemohi	temoho	bolemoho	bolemohi

bona (see)

A. [Person]:

Class 1, 7: mmoni, seboni (seer)

B. [Event, Manner]:

Class 3: mmono (seeing, way of seeing)

C. [Result]:

Class 5: lebono (view, sight)

D. [Result, Action]:

Class 9: pono (vision, sight, act of seeing)

E. [Quality]:

Class 14: bobono (state / quality of seeing)

boboni (state / quality of seer)

utlwa (hear)

A. [Person]:
Class 1, 7: moutlwi, seutlwi (hearer, listener)

B. [Event, Manner]:
Class 3: moutlo (hearing, way of hearing)

C. [Result]:
Class 5: leutlwa (thing which is heard)

D. [Result, Action]:
Class 9: kutlo (a hearing, act of hearing)

E. [Quality]:
Class 14: boutlo (state / quality of hearing)
boutlwi (state, quality of hearer)

nkga (smell)

A. [Person]:
Class 1, 7: monkgi, senkgi (person who smells)

B. [Result]:
Class 3, 7: monkgo, senkgo (smell, odour)
Class 9: nkga (evil-smelling thing)

C. [Quality]:
Class 14: bonkgo (state/quality of smelling)
bonkgi (state/quality of one who smells)

sheba (look)

A. [Person]:
Class 1, 7: moshebi, seshebi (onlooker)

B. [Event, Manner]:
Class 3: moshebo (looking, way of looking)

C. [Result, Action]:
Class 9: tjhebo (look, act of looking)

D. [Quality]:
Class 14: boshebo (state/quality of looking)
boshebi (state/quality of onlooker)

hlahloba (examine, inspect)

A. [Person]:
Class 1: mohlahlobi (examiner, inspector)

B. [Event, Manner]:
Class 3: mohlahlobo (examining, way of examining)

C. [Result, Action]:
Class 9: hlahlobo (examination, act of examining)

D. [Quality]:
Class 14: bohlahlobo (state / quality of examining)
bohlahlobi (state/quality/office of examiner)

lemoha (observe)

A. [Person]:
Class 1, 7: molemohi, selemohi (observer)

B. [Event, Manner]:
Class 3: molemoho (observing, way of observing)

C. [Result, Action]:
Class 9: temoho (observation, act of observing)

D. [Quality]:

Class 14: bolemoho (state/quality of observing)

bolemohi (state/quality of observer)

Nominalisations from the verb:

(1) **The verb <u>bona</u>** (see)**:**

Bana ba–bone sekolo**.**

(The children saw the school)

bona
ARGSTR = ARG 1 = x : animate
ARG 2 = y : phys.obj / proposition
EVSTR = E1 = e_1 : process
QUALIA = FORMAL = x
AGENTIVE = bona_act (e_1, x, y)

Hierarchy of Semantic Concepts:

See – Perception

The lexical representation of **bona** shows that:

- two arguments (i.e., living creature who is able to see and physical object that can be seen).
- ARG 2 may also be a proposition: Ke bone [hore ba–a–kula].
  (I saw that they are sick)
- one event (i.e., process only)
- the formal and agentive roles in the qualia, reflect the identity of ARG1 (x) and the act of seeing respectively.

(2) **Nominalisation in Class 1:**

Mmoni (seer)

Mmoni wa metsi o–makaditse batho.

(The seer of water surprised people)

mmoni
ARGSTR = ARG 1 = x : animate
D – ARG 1 = y : phys. obj/proposition
EVSTR = D – E1 = e_1 : process
QUALIA = FORMAL = x
AGENTIVE = bona_act (e_1, x, y)

Hierarchy of Semantic Concepts:

Actor – See – Perception – Human

Within the structure of **mmoni** above:

- the argument structure consists of the human (i.e., ARG 1 and a default argument)
- the default event which is the process of seeing.
- The qualia role of formal which is the identity of **mmoni** and agentive role which is the act (e_1) of seeing by the human (x).

(3) **Nominalisation in Class 7:**

Seboni (Seer)

Seboni sa metsi se–fihle.

(The seer of water has arrived)

seboni
ARGSTR = ARG 1 = x : animate
D – ARG 1 = y : phys. obj/proposition
EVSTR = D – E1 = e_1 : process
QUALIA = FORMAL = x
AGENTIVE = bona_act_intensive (e_1, x)

Hierarchy of Semantic Concepts:

Actor – intensifier – See – Perception – Human

For the explanation of lexical representation of **seboni** above: See no. (2) which is the same as no. (3). The only difference is found in the agentive qualia role in which the feature intensive is added to the quale in **seboni**.

(4) **Nominalisation in Class 3:**

Mmono (seeing)

Mmono wa diphoofolo o-a-makatsa.

(The seeing of animals is amazing)

mmono
ARGSTR = ARG 1 = e : r
D – ARG 1 = x : animate
D – ARG 2 = phys. obj
EVSTR = D – E1 = e_1 : process
QUALIA = FORMAL = (e_r, x, y)
AGENTIVE = bona_act (e_1, x)

Hierarchy of Semantic Concepts:

See – Perception – Event

Within the structure of **mmono** above:

- the argument structure consists of three arguments (i.e., two default arguments representing animate and the physical object seen; and ARG 1, the reference of the event itself). The event structure is the process (i.e., the perception of seeing).

- The qualia consists of the formal role which is the identity of that perception (i.e. ARG 1) and the agentive role which is the act of seeing by an animate.

(5) **Nominalisation in Class 3: Manner**

Mmono (way of seeing)

Mmono wa ngwana wa bothata o bohale.

(The way of seeing of the child of the problem is sharp)

mmono
ARGSTR = ARG 1 = e : r
D – ARG 1= x : animate
D – ARG 2 = y : phys. obj
EVSTR = D – E1 = e_1 : process
QUALIA = FORMAL = (e_r, x, y)
AGENTIVE = bona_act_manner (e_1, x)

Hierarchy of Semantic Concepts:

Manner – See – Perception – Event

For the structure of **mmono** in no. (5): See no. (4) as they are similar. The only difference is in the qualia role of agentive in which the manner of the event of seeing is highlighted.

(6) **Nominalisation in Class 5 and 9:**

Lebono / Pono (view, sight)

Lebono la mosadi la bana le–lokile.

(The view / sight of the woman of the children is in order)

lebono
pono

ARGSTR	=	ARG 1 = e : r
		D – ARG 1 = x : animate
		D – ARG 1 = y : phys.obj
EVSTR	=	D – E1 = e_1 : process
QUALIA	=	FORMAL = bona_result (e_r, x, y)
		AGENTIVE = bona_act (e_1, x)

Hierarchy of Semantic Concepts:

See – Perception – Action

The structure of **lebono** can be treated as that of **pono**. Within the structure of **pono:**

- there are three arguments in which two are default arguments, representing animate and physical object and ARG 1, the argument which is the reference of the event itself.

- There is only one event (i.e., the process of seeing)

- Two qualia roles of formal and agentive (i.e., the result of seeing (e_r) and the action of seeing).

(7) **Nominalisation in Class 14 with suffix [-o]:**

Bobono (state/quality of seeing)

Bobono ba bana ba dibuka bo bohale.

(The quality of seeing of the children of the books is sharp)

bobono
ARGSTR = ARG 1 = e : r
D – ARG 1 = x : animate
D – ARG 2 = y : phys. obj
EVSTR = D – E1 = e_1 : process
QUALIA = FORMAL = bona_result_quality (e_r, x, y)
AGENTIVE = bona_act (e_1, x)

Hierarchy of Semantic Concepts:

See – Perception – Quality – State

Within the structure of **bobono** above:

- there are two default arguments and the reference of the event in the argument structure. One default event is noticed as the process. The qualia roles are the agentive role of the act (e_1) of seeing (x) and the formal role which reflects result of the quality of seeing)

(8) **Nominalisation in Class 14 with suffix [-i]:**

Boboni (state/quality of seer)

Boboni ba titjhere ba bana bo bohale.

(The state of the seer of the teacher of the children is sharp)

boboni
ARGSTR = ARG 1 = e : r
ARG 2 = x : animate
D – ARG 1 = y : phys. obj
EVSTR = D – E1 = e_1 : process
QUALIA = FORMAL = bona_result_quality_animate (e_r, x, y)
AGENTIVE = bona_act (e_1, x)

Hierarchy of Semantic Concepts:

See – Perception – Quality – Animate – State

The structure of boboni is the same as in no. (7) above except for the animate feature in the formal quale.

Notes on verbs of perception

a. The perception verbs in the list above have the same analysis as the verb **bona** in no. (1) above. These verbs may have two arguments. The event structure features a process and the qualia have a formal as well as an agentive roles which are the same in all the verbs of perception.

b. **Nominalisation in Class 1:** the presence of the prefix [mo-] and suffix [-i] forces an interpretation of human being on the argument of **mmoni.** The analysis is the same as in no. (1) above.

c. **Nominalisation in Class 7:** the analysis reflects the one in no. (2) except for the agentive quale: the presence of the prefix [se-] forces the feature [intensive] on the verb **bona**.

d. **Nominalisation in Class 3:** the argument of **mmono** in both no. (4) and (5) above refers to the event of seeing (r = reference, e = event). This argument is reflected in the formal quale as (e_r, x, y). The analysis in no. (5) is the same as in no. (4) except for the presence of the feature [manner] on the verb **bona** in the agentive quale.

e. **Nominalisation in Class 5 and 9 in no. (6):** the analysis is the same as in the case of the event **mmono** in no. (4) above, except for the quale: this formal quale has to represent the result of the seeing (i.e., a view / sight).The agentive role still reflects the act of seeing.

f. **Nominalisations in Class 14 in no. (7) and (8):** the analysis may be compared with the one in no (4) above with the following differences : **boboni** has an animate argument while **bobono** has any physical object; the feature [quality (of the state)] in both derivations but with **boboni** in no. (8) an added feature of

[animate has to be present because of the suffix [-i].The prefix [bo-] forces the interpretation of quality (of a state).

g. **Semantic Concepts with verbs of Perception**

Class 1: Human, Actor (person)

Class 7: Human, Actor (intensive)

Class 3: Event

Class 3: Manner of event

Class 5 and 9: Action, Result

Class 14 with [-o]: Quality of state

Class 14 with [-i] : Quality of person

(3.5.) Experiencer verbs

	cl. 1	**cl. 3**	**cl. 5**	**cl. 7**	**cl. 9**	**cl.14[-o]**	**cl.14[-i]**
hlompha	mohlomphi	mohlompho		sehlomphi	tlhompho		bohlomphi
rata	morati		lerato	serati	thato		borati
tshaba	motshabi			setshabi	tshabo	botshabo	botshabi
tseba	motsebi			setsebi	tsebo		botsebi
hloya	mohloi		lehloyo	sehloi	tlhoyo		bohloi
batla	mmatli			sebatli	patlo	bobatlo	bobatli

hlompha (respect)

A. [Person]:

Class 1, 7: mohlomphi, sehlomphi (one who respects)

B. [Event, Manner]:

Class 3: mohlompho (respecting, way of respecting)

C. [Result, Action]:

Class 9: tlhompho (respect, act of respecting)

D. [Quality]:

Class 14: bohlomphi (state / quality of one who respects)

rata (love)

A. [Person]:
Class 1, 7: morati, serati (lover)

B. [Result]:
Class 5: lerato (love)

C. [Result, Action]:
Class 9: thato (liking, will, act of loving)

D. [Quality]:
Class 14: borati (state / quality of one who loves)

E. [Result]:
Class 14: borata (will, preference)

tshaba (fear)

A. [Person]:
Class 1, 7: motshabi, setshabi (one who fears)

B. [Result]:
Class 9: tshabo (fear, fright)

C. [State]:
Class 14: botshabo (state of fright)
botshabi (state / habit of one who is afraid)

tseba (know)

A. [Person]:
Class 1, 7: motsebi, setsebi (one who knows)

B. [Result, Action]:
Class 9: tsebo (knowledge, act of knowing)

C. [Quality]:

Class 14: botsebi (state / quality of an expert)

hloya (hate)

A. [Person]:

Class 1, 7: mohloi, sehloi (hater)

B. [Result]:

Class 5: lehloyo (hatred)

C. [Result, Action]:

Class 9: tlhoyo (hatred, act of hating)

D. [Quality]:

Class 14: bohloi (state / quality of one who hates)

batla (search)

A. [Person]:

Class 1, 7: mmatli, sebatli (searcher, seeker)

B. [Result, Action]:

Class 9: patlo (search, act of searching)

C. [Quality]:

Class 14: bobatlo (state of searching)

bobatli (state of searcher)

Nominalisations from the tshaba:

(1) **The verb <u>tshaba</u>** (to fear):

Bana ba–tshaba tau.

(The children are afraid of the lion)

tshaba
ARGSTR = ARG 1 = x : human
ARG 2 = y : phys. obj
EVSTR = E1 = e_1 : state
QUALIA = FORMAL = tshaba (e_1, x, y)

Hierarchy of Semantic Concepts:

Fear – Experiencer

Within the structure of **tshaba** above:

- the argument structure of this verb consists of two arguments i.e., animate – individual who feard something.
- only a state event is in the event structure.
- the qualia role is only the formal one, in which the state is central (e_1).

(2) **Nominalisation in Class 1:**

Motshabi (a person who is afraid)

Motshabi wa tau o–balehile.

(The person who is afraid of the lion has ran away)

motshabi
ARGSTR = ARG 1 = x : human
D – ARG 1 = y : phys. obj
EVSTR = D – E1 = e_1 : state
QUALIA = FORMAL = tshaba (e_1, x, y)

Hierarchy of Semantic Concepts:

Experiencer – Fear – Human

Within the structure of **motshabi** above:

- the argument structure consists of two arguments (i.e., animate and default argument of the physical object)
- the default event structure that consists of the state event.

- the qualia role is only the formal one, which indicates the state of the event of fear.

(3) **Nominalisation in Class 7:**

Setshabi (a fearful person)

setshabi
ARGSTR = ARG 1 = x : human
D – ARG 1 = y : phys. obj
EVSTR = D – E1 = e_1 : state
QUALIA = FORMAL = tshaba_intensive (e_1, x, y)

Hierarchy of Semantic Concepts:

Intensive – Experiencer – Fear – Human

Within the structure of **setshabi** above:

- See **motshabi** no. (2) above. The only difference is in the formal qualia role in which **tshaba** is intensified.

(4) **Nominalisation in Class 9:**

Tshabo (fear, fright)

Tshabo ya bana ya tau e–lokile.

(The children ‘s fear of the lion is in order)

tshabo
ARGSTR = ARG 1 = e : r
D – ARG 1 = x : human
D – ARG 2 = y : phys. obj
EVSTR = D – E1 = e_1 : state
QUALIA = FORMAL = tshaba (e_1, x, y)

Hierarchy of Semantic Concepts:

Fear – Experience – State

Within the structure of **tshabo** above:

- in the argument structure, there are three arguments, of which two are default arguments. ARG 1 is the state of fear.

- the event structure is represented by only state event.

- in the qualia structure, the formal role is the only quale that represents the state event (e_1) of fright by a human being (x) of a physical object (y).

(5) **Nominalisation in Class 14 with suffix [-o]:**

Botshabo (state of fright, frightfulness)

Botshabo ba bana ba tau bo–lokile.

(The children ‘s frightfulness of the loin is in order)

botshabo
ARGSTR = AGR 1 = e : r
D – ARG 1 = x : human
D – ARG 2 = y : phys. obj
EVSTR = D – E1 = e_1 : state
QUALIA = FORMAL = tshaba_quality (e_1, x, y)

Hierarchy of Semantic Concepts:

Fear – Experience – Quality – State

Within the structure of **botshabo** above:

- three arguments are noticed in the argument structure, in which two are the default arguments.

- the event structure features the state of fright.

- in the qualia, there is a formal quale (i.e., the quality of fright).

(6) **Nominalisation in Class 14 with suffix [-i]:**

Botshabi (state / habit of one who is afraid)

Botshabi ba bana ba tau bo–lokile.

(The children ‘s state of fear of the lion is in order)

botshabi
ARGSTR = ARG 1 = e : r
ARG 2 = x : human
D – ARG 1 = y : phys. obj
EVSTR = D – E1 = e_1 : state
QUALIA = FORMAL = tshaba_quality_animate (e_1, x, y)

Hierarchy of Semantic Concepts:

Experience – Fear – Quality – Animate – State

The lexical representation of **botshabi** in no. (6) is the same as no. (5) above. The only difference lies in the formal quale in which the quality of an animate is highlighted.

Notes on Experiencer verbs

a. The experiencer verbs in the list above have the same entry as in no. (1) above (i.e., they have an animate argument, the event is a state and there is one formal quale in which the animate argument is in a state (e.g. of fright) (e_1, x, y)).

b. **Nominalisation in Class 1:** the analysis is a reflection of the one of the verb in no. (1) above except that the argument is now only human and the semantic content has to refer to this feature, (i.e., human) which is related to the presence of the affixes [mo-] and [-i].

c. **Nominalisation in Class 7:** the only difference with the analysis in Class 1 in no. (2) above is related to the feature [intensive] on the verb tshaba in the formal quale in no. (3) above. The presence of the prefix [se-] forces this interpretation while the suffix [-i] refers to the feature [human].

d. **Nominalisation in Class 9, no. (4) above**: the event structure refers to a state of fright which is also ARG 1.

e. **Nominalisation in Class 14, no. (5) and (6) above:** the analysis of the two derivations differ only because of the presence of the suffixes [-o] and [-i]. The prefix [bo-] forces an interpretation of [quality of state] on the two derivations while the suffix [-i] refers to an animate being as in no. (2) and (3) above. The

difference is reflected in the formal quale where **botshabo** has the feature [quality] on the verb, but **botshabi** has the features [quality] and [animate] on the verb because of the suffix[-i].

f. **Semantic Concepts with experiencer verbs.**

Class 1: Human, Actor (person)

Class 7: Human, Actor (intensive)

Class 9: Result

Class 14 with [-o]: state of fright

Class 14 with [-i] : state of one who is afraid.

(3.6) Communication verbs

	cl. 1	**cl. 3**	**cl. 5**	**cl. 7**	**cl. 9**	**cl.14[-o]**	**cl.14[-i]**
bolela	mmoledi	mmolelo		seboledi sebolelo	polelo poledi		boboledi
bua	mmui	mmuo		sebui	puo	bobuo	bobui
seba	mosebi	mosebo	lesebo	sesebi	tshebo	bosebo	bosebi
qoqa	moqoqi	moqoqo		seqoqi seqoqo			boqoqi
bala	mmadi	mmalo		sebadi	palo	bobalo	bobadi

bolela (speak)

A. [Person]

Class 1, 7: mmoledi, seboledi (speaker)

B. [Event, Manner]:

Class 3: mmolelo (speaking, way of speaking)

C. [Result]:

Class 7: sebolelo (thing which is foretold)

Class 9: polelo (saying, speech)

poledi (saying (of a person))

D. [Quality]:

Class 14: boboledi (state / quality of speaker)

bua (talk)

A. [Person]:
Class 1, 7: mmui, sebui (talker)

B. [Event, Manner]:
Class 3: mmuo (talking, way of talking)

C. [Result, Action]:
Class 9: puo (language, act of talking)

D. [Quality]:
Class 14: bobui (state of talker, talkativeness)
bobuo (talkativeness, liking to talk a lot)

seba (backbite, slander)

A. [Person]:
Class 1, 7: mosebi, sesebi (slanderer)

B. [Event, Manner]:
Class 3: mosebo (slandering, way of slandering)

C. [Result]:
Class 5: lesebo (slander)

D. [Result, Action]:
Class 9: tshebo (slander, act of slandering)

E. [Quality]:
Class 14: bosebo (state / quality of slandering)
bosebi (state / habit of slanderer)

qoqa (chat)

A. [Person]:
Class 1, 7: moqoqi, seqoqi (one who chats)

B. [Event, Manner]:
Class 3: moqoqo (chatting, way of chatting)

C. [Result]:
Class 7: seqoqo (conversation, talk, chat)
Class 3: moqoqo (conversation, talk, chat)

D. [Quality]:
Class 14: boqoqi (state of one who chats)

bala (read)

A. [Person]:
Class 1, 7: mmadi, sebadi (reader)

B. [Event, Manner]:
Class 3: mmalo (reading, way of reading)

C. [Result, Action]:
Class 9: palo (a reading, act of reading)

D. [Quality]:
Class 14: bobalo (state / quality of reading)
bobadi (state of reader)

Nominalisations from the verb bua:

(1) **The verb <u>bua</u>** (talk, speak)
Bana bana ba-bua Sesotho.
(These children talk Sesotho)

bua
ARGSTR = ARG 1 = x : human
ARG 2 = y : language
D – ARG 1 = to
D – ARG 2 = about
EVSTR = E1 = e_1 : process
QUALIA = FORMAL = x
AGENTIVE = bua_act (e, x, y)

Hierarchy of Semantic Concepts:

Talk – Communication

Within the structure of **bua** above:

- the argument structure of this verb accommodates two arguments with the possibility of two default arguments (i.e., human who speaks the language to someone about something).
- the event structure consists of the process of talking only.
- the qualia structure have two qualia roles (i.e., formal, which is the identity of the human (x); and the agentive, which is the act of talking (e_1) by a human (x) of the language (y).

(2) **Nominalisation in Class 1:**

Mmui (speaker, talker)

Babui ba Sesotho ba bangata.

(The speakers of Sesotho are many)

mmui
ARGSTR = ARG 1 = x : human
D – ARG 1 = y : language
EVSTR = D – E1 = e_1 : process
QUALIA = FORMAL = x
AGENTIVE = bua_act (e_1, x)

Hierarchy of Semantic Concepts:

Actor – Talk – Communication – Human

The lexical representation of **mmui** above shows that two arguments are represented within the argument structure (i.e., a human being and a default argument: the language). There is only one default event which is a process. The qualia features two roles (i.e., formal which is the identity of the talker; and agentive, which is the act of talking).

(3) **Nominalisation in Class 7:**

Sebui (speaker, orator, good talker)

Sebui sa Sesotho ke–a–se–tseba.

(The Sesotho orator I know him)

sebui
ARGSTR = ARG 1 = x : human
D – ARG 1 = y : language
EVSTR = D – E1 = e_1 : process
QUALIA = FORMAL = x
AGENTIVE = bua_act_intensive (e_1, x)

Hierarchy of Semantic Concepts:

Actor – Talk – Communication – Intensive – Human

The lexical representation of **sebui** is the same as that in no. (2) above, the difference is found in the qualia role of agentive (i.e., intensive).

(4) **Nominalisation in Class 3:**

Mmuo (speaking, talking)

Mmuo wa titjhere wa Sesotho ke–o–utlwile.

(The teacher ‘s speaking of Sesotho I heard it).

mmuo
ARGSTR = ARG 1 = e : r
D – ARG 1 = x : human
D – ARG 2 = y : language
EVSTR = D – E1 = e_1 : process
QUALIA = FORMAL = (e_r, x, y)
AGENTIVE = bua_act (e_1, x)

Hierarchy of Semantic Concepts:

Event – Talk – Communication – Event

The structure of **mmuo** above shows that two default arguments are presented in the argument structure. ARG 1 is a reference of the event itself. The event structure features the process of talking only. The qualia shows the formal role of the event of talking and the agentive role of the act (e_1) of talking.

(5) **Nominalisation in Class 3: Manner:**

Mmuo (way of speaking / talking)

Mmuo wa ngwana wa Sesotho o - motle.

(The child ‘s way of speaking Sesotho is good).

mmuo
ARGSTR = ARG 1 = e : r
D – ARG 1 = x : human
D – ARG 2 = y : language
EVSTR = D – E1 = e_1 : process
QUALIA = FORMAL = (e_r, x, y)
AGENTIVE = bua_act_manner (e_1, x)

Hierarchy of Semantic Concepts:

Manner – Talk – Communication – Event

The lexical representation of **mmuo** in no. (5) is the same as **mmuo** in no. (4) above. The difference is found in the agentive quale with the feature [manner] which is not present in no. (4) above.

(6) **Nominalisation in Class 9:**

Puo (language, speech)

Puo ya moruti ya Sesotho e ntle.

(The minister ‘s Sesotho language is good).

puo
ARGSTR = ARG 1 = x : language
D – ARG 1 = y : human
EVSTR = D – E1 = e_1 : process
QUALIA = FORMAL = x
AGENTIVE = bua_act (e_1, x)

Within the structure of **puo** above:

- the argument structure consists of two arguments (i.e., the language and the default argument representing the human being responsible for talking).
- the default event consists of the process of talking.
- the qualia structure consists of the formal role which is the identity of ARG 1, i.e., language / talk; and the agentive that shows the act of talking (e_1).

(7) **Nominalisation in Class 14 with [-i]:**

Bobui (state of a talker / speaker)

Bobui ba moruti ba nnete bo botle.

(The minister ‘s state of talking the truth is good).

bobui
ARGSTR = ARG 1 = e : r
D – ARG 1 = x : human
D – ARG 2 = y : language
EVSTR = D – E1 = e_1 : process
QUALIA = FORMAL = bua_result_quality_animate (e_r, x, y)
AGENTIVE = bua_act (e_1, x)

Hierarchy of Semantic Concepts:

Actor – Talk – Communication – Animate – Quality – State

Within the structure of **bobui** above:

- the argument structure consists of three argument, in which two are default arguments (i.e., human and the language).
- the event structure consists of a default event which is the process of talking.
- the qualia features the formal in which the result of the quality of speaking animate is highlighted; and the agentive represents the act of speaking (e_1) by human (x).

(8) **Nominalisation in Class 14 with [-o]:**

Bobuo (talkativeness (liking to talk a lot))

Bobuo ba basadi ba Sesotho ha–ke–bo–rate.

(The women ‘s talkativeness of Sesotho I don’t want it)

bobuo
ARGSTR = ARG 1 = e : r
D – ARG 1 = x : human
D – ARG 2 = y : language
EVSTR = D – E1 = e_1 : process
QUALIA = FORMAL = bua_result_quality (e_r, x, y)
AGENTIVE = bua_act (e_1, x)

Hierarchy of Semantic Concepts:

Talk – Communication – Quality – State

The lexical representation of **bobuo** in no. (8) is the same as **bobui** in no. (7) above. The difference is found in the formal quale with the feature [animate] which is not present in no. (8) above.

Notes on Communication verbs.

a. These verbs have the same entry as in no. (1) above, (i.e., they have two arguments (human and type of communication), the event is a process of communicating with an agentive quale of the act of communicating.

b. **Nominalisation in Class 1**: the analysis is the reflection of the verb **bua** in no. (1) above except that the arguments are now reduced to two arguments as compared to the previous four in the verb in no. (1).

c. **Nominalisation in Class 7:** the analysis is the same as in no. (2) above except for the agentive quale: the presence of the prefix [se-] forces the feature [intensive] on the verb **bua**.

d. **Nominalisation in Class 3:** the argument of **mmuo** in both no. (4) and (5) above refers to the event of speaking (r = reference, e = event). The analysis in no. (5)

is the same as in no. (4) except for the presence of the feature [manner] on the verb **bua** in the agentive quale.

e. **Nominalisation in Class 9:** the analysis is the same as in the case of the event **mmuo** in no. (4) above except for ARG 1 and formal quale: this formal quale has to represent the identity of language or speech. The agentive still reflects the act of speaking.

f. **Nominalisation in Class 14 with the suffix [-i] in no.** (**7):** the analysis may be compared with the one in no. (2) above with the following differences: **bobui** has an animate argument which reflect the quality of a person who is speaking while in no. (2) and (3), the whole idea is on the individual themselves who are involved in speaking . The prefix [bo-] forces the interpretation of quality (of a state).

g. **Nominalisation in Class 14 with the suffix [-o] in no. (8):** the analysis is the same as in no. (7) above except for the formal quale: the presence of the feature [animate] in no. (7) makes a difference as it is absent in no. (8) above.

h. **Semantic Concepts with Communication verbs.**

Class 1: Human, Actor (person)
Class 7: Human, Actor (intensive)
Class 3: Event
Class 3: Manner of event
Class 9: Action, Result
Class 14 with [-i]: Quality / State of talker
Class 14 with [-o]: Quality / State of talking

(4.) Transitive verbs with a locative argument

(4.1) Verbs of putting

	cl. 1	cl. 3	cl. 5	cl. 7	cl. 9	cl.14[-o]	cl.14[-i]
bea	mmei	mmeo	lebeo	sebei	peo	bobeo	bobei
tshwara	motshwari	motshwaro		setshwari setshwaro	tshwaro	botshwaro	botshwari
jara	mojari	mojaro		sejari sejaro	tjaro	bojaro	bojari
kwahela	mokwahedi	mokwahelo		sekwahedi sekwahelo	kwahelo	bokwahelo	bokwahedi
tshela	motshedi	motshelo		setshedi setshelo	tshelo	botshelo	botshedi
tlhatlaha	motlhatlehi	motlhatleho		setlhatlehi	tlhatleho	botlhatleho	botlhatlehi
nyolla	monyolli	monyollo		senyolli	nyollo	bonyollo	bonyolli

bea (put, place)

A. [Person]:

Class 1, 7: mmei, sebei (person who places people / things)

B. [Event, Manner]:

Class 3: mmeo (placing, putting, way of placing / putting)

C. [Entity from a result]:

Class 5: lebeo (thing placed aside)

D. [Result, Action]:

Class 9: peo (act of placing, installation, appointment)

E. [State]:

Class 14: bobeo (quality / property of placing people / things)

bobei (quality/property of person who places people/thing)

tshwara (catch, seize)

A. [Person]:

Class 1, 7: motshwari, setshwari (catcher)

B. [Event, Manner]:

Class 3: motshwaro (catching, way of catching)

C. [Instrument]:

Class 3, 7: motshwaro, setshwaro (instrument of holding, handle)

D. [Result, Action]:

Class 9: tshwaro (act of catching, capture)

E. [Quality]:

Class 14: botshwaro (quality / property of holding)
botshwari (quality / property of catcher)

jara (carry)

A. [Person]:

Class 1, 7: mojari, sejari (bearer)

B. [Event, Manner]:

Class 3: mojaro (carrying, way of carrying)

C. [Action]:

Class 9: tjaro (act of carrying)

D. [Result]:

Class 3, 7: mojaro, sejaro (burden, load, pack)

E. [Quality]:

Class 14: bojaro (quality of carrying)
bojari (quality of bearer)

kwahela (cover)

A. [Person]:

Class 1, 7: mokwahedi, sekwahedi (one who covers)

B. [Event, Manner]:

Class 3: mokwahelo (covering, way of covering)

C. [Instrument]:

Class 7: sekwahelo (lid, cover)

D. [Action]:

Class 9: kwahelo (act of covering)

E. [Quality]:

Class 14: bokwahelo (quality / property of covering)

bokwahedi (quality / property of one who covers)

tshela (pour)

A. [Person]:

Class 1, 7: motshedi, setshedi (one who pours)

B. [Event, Manner]:

Class 3: motshelo (pouring, way of pouring)

C. [Instrument]:

Class 7: setshelo (funnel, container)

D. [Result, Action]:

Class 9: tshelo (a pouring, act of pouring)

E. [Quality]:

Class 14: botshelo (quality of pouring)

botshedi (quality of one who pours)

tlhatleha (put a pot on fire, cook)

A. [Person]:

Class 1,7: motlhatlehi, setlhatlehi (cook)

B. [Event, Manner]:

Class 3: motlhatleho (cooking, way of cooking)

C. [Action]:

Class 9: tlhatleho (act of cooking)

D. [Instrument]:

Class 9: tlhatleho (cooking pot)

E. [Quality]:

Class 14: botlhatleho (quality of cooking)

botlhatlehi (quality of cook)

nyollo (raise, draw up)

A. [Person]:

Class 1, 7: monyolli, senyolli (one who raises up)

B. [Event, Manner]:

Class 3: monyollo (raising, way of raising)

C. [Result, Action]:

Class 9: nyollo (a raising up, act of raising)

D. [Quality]:

Class 14: bonyollo (quality of raising up)

bonyolli (quality of one who raises up)

Nominalisations from the verb bea:

(1) **The verb <u>bea</u>** (put)

Ngwana o–bea pitsa mollong.

(The child puts a pot on the fire).

bea

ARGSTR = ARG 1 = x : animate
ARG 2 = y : phys. obj
D – ARG 1 = z : location

EVSTR = E1 = e_1 : process
E2 = e_2 : state
Restr = Temporally ordered
Head = e_2

QUALIA = FORMAL = on (e_2, x, y, z)
AGENTIVE= bea_act (e_1, x)

Hierarchy of Semantic Concepts:

Put – Location – Contact

Within the structure of **bea** above:

- the argument structure consists of three arguments in which a default argument represents a location where a physical object is placed.
- the event structure features the process of putting and the state of putting. These events are temporally ordered in which the state (e_2) is the head of the events.
- the formal qualia makes a reference where to place something and agentive quale shows the act of putting.

(2) **Nominalisation in Class 1:**

Mmei (person who places people / things)

Mmei wa pitsa mollong o–tjhele.

(The one who places things of a pot on the fire has burnt).

mmei

ARGSTR = ARG 1 = x : human
D – ARG 1 = y : phys. obj
D – ARG 2 = z : location

EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2

QUALIA = FORMAL = on (e_2, x, y, z)
AGENTIVE = bea_act (e_1, x)

Hierarchy of Semantic Concepts:

Put – Location – Contact – Human

Within the structure of **mmei** above:

- in the argument structure, there are three arguments (human, physical object and the location of which two are default arguments.
- the event structure consists of two default events i.e. process of putting and the state of putting; these events are temporally ordered, while the (e_2) state head these events).
- the formal and agentive qualia are noticed in the qualia as in no. (1).

(3) **Nominalisation in Class 7:**

Sebei (the person who places / puts a lot)

Sebei sa matlotlo bankeng se–ruile.

(The one who places a lot of treasures in the bank is rich).

sebei

ARGSTR = ARG 1 = x : human
D – ARG 1 = y : phys. obj
D – ARG 1 = z : location

EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2

QUALIA = FORMAL = on (e_2, x, y, z)
AGENTIVE = bea_act_intensive (e_1, x)

Hierarchy of Semantic Concepts:

Put – Location – Intensive – Contact – Human

The lexical representation of **sebei** in no. (3) above is the same as that of **mmei** in no. (2) above. The only difference is noticed in the agentive quale (i.e., the feature [intensive] makes a distinction between the two).

(4) **Nominalisation in Class 3:**

Mmeo (placing/putting)

Mmeo wa pitsa mollong o–a–tshosa.

(The putting of a pot on the fire is frightening)

mmeo

ARGSTR	=	ARG 1 = e : r
		D – ARG 1 = x : animate
		D – ARG 2 = y : phys. obj
		D – ARG 3 = z : location
EVSTR	=	D – E1 = e_1 : process
		D – E2 = e_2 : state
		Restr = Temporally ordered
		Head = e_2
QUALIA	=	FORMAL = (e_r, x, y, z)
		AGENTIVE = bea_act (e_1, x)

Hierarchy of Semantic Concepts:

Put – Location – Contact – Event

Within the structure of **mmeo** above:

- in the argument structure, three default arguments are noticed (i.e., animate who puts the physical object which is put and the location where it is put) and the reference of the event itself (ARG 1).

- two events (process and state) are found in the event structure. These events are temporally ordered and they have been headed by e_2.

- the qualia features formal which represents ARG 1 and agentive which represents the act of putting.

(5) **Nominalisation in Class 3 Manner:**

Mmeo (way of putting/placing)

Mmeo wa ngwana betheng o–lokile.

(The placing of a child on the bed is in order).

mmeo

ARGSTR = ARG 1 = e : r
D – ARG 1 = x : animate
D – ARG 2 = y : phys. obj
D – ARG 3 = z : location

EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2

QUALIA = FORMAL = (e_r, x, y, z)
AGENTIVE = bea_act manner (e_1, x)

Hierarchy of Semantic Concepts:

Put – Location – Manner – Contact – Event

The lexical representation of **mmeo** in no. (5) above:

- see no. (4) above, as **mmeo** in no. (5) is the same as no. (4). The only difference is in the agentive quale with the feature [manner] showing a distinction.

(6) **Nominalisation in Class 9:**

Peo (act of placing, installation, appointment)

Peo ya morena pusong e–ntle.

(The act of placing the chief in the government is good).

peo

ARGSTR = ARG 1 = e : r
D – ARG 1 = x : animate
D – ARG 2 = y : phys. obj
D – ARG 3 = z : location

EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2

QUALIA = FORMAL = bea_result (e_r, x, y, z)
AGENTIVE = bea_act (e_1, x)

Hierarchy of Semantic Concepts:

Put – Location – Contact – Result – Action

The lexical representation of **peo** in no. (6) above shows:

- three default arguments and reference to the event of putting.
- The event structure consists of the process and the state; these events are temporally ordered and the state is the head of the events.
- The qualia features the formal quale and the agentive quale in which the result of the event of putting and the act of putting are highlighted respectively.

(7) **Nominalisation in Class 14 with suffix [-o]: Quality**

Bobeo (quality / property of placing things / people)

Bobeo ba ngwana betheng ke ntho e ntle.

(The quality of placing a child on a bed is a good things).

bobeo

ARGSTR = ARG 1 = e : r
D – ARG 1 = x : animate
D – ARG 2 = y : phys. obj
D – ARG 3 = z : location

EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2

QUALIA = FORMAL = bea_result_quality (e_r, x, y, z)
AGENTIVE = bea_act (e_1, x)

Hierarchy of Semantic Concepts:

Put – Location – Contact – Quality – State

Within the structure of **bobeo** above:

- the argument structure is presented with three default arguments and the reference of the event itself.
- the event structure features the process and the state of putting; these events are temporally ordered with the state (e_2) as the head of the events.

- the qualia presents the formal as the quality of the result of putting and agentive as the act of putting.

(8) **Nominalisation in Class 14 with suffix [-i]:**

Bobei (quality / property of person who places thing / people)

Bobei ba setjhaba morena pusong ke ntho e ntle.

(The quality of the one who places of the nation the chief on throne is a good thing).

bobei

ARGSTR = ARG 1 = e : r
D – ARG 1 = x : human
D – ARG 2 = y : phys. obj
D – ARG 3 = z : location

EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2

QUALIA = FORMAL = bea_result_quality_animate (e_r, x, y, z)
AGENTIVE = bea_act (e_1, x)

Hierarchy of Semantic Concepts:

Put – Location – Contact – Animate – Quality – State

The lexical representation of **bobei i**n no. (8) is the same as that of **bobeo** in no. (7) above. The difference appears on the formal quale as the result of the quality of an animate and that of result of quality only.

Notes on verbs of putting with a locative argument:

a. The verbs of putting in the list above have the same analysis as the verb **bea** in no. (1) above. These verbs have three arguments with a D–ARG of location. The event structure features a process event which is followed by a state event. The qualia have a formal and agentive roles which are the same in all the verbs of putting with a locative argument.

b. **Nominalisation in Class 1**: the analysis is the same as in no. (1) above except that an animate argument becomes a human being, this is due to the presence of the prefix [mo-] and suffix [-i] which forces an interpretation of [human] on the argument of **mmei**.

c. **Nominalisation in Class 7**: the only difference with the analysis in Class 1, no. (2) above, emanates from the feature [intensive] on the verb **bea** in the formal quale in no. (3) above. The presence of the prefix [se-] forces this interpretation while the suffix [-i] refers to the feature [human].

d. **Nominalisation in Class 3 no. (3) and (4) above:** the argument of **mmeo** refers to the event itself (e:r) where [r] indicates the reference of the event. The analysis in no. (5) is the same as in no. (4) except for the presence of the feature [manner] on the verb **bea** in the agentive quale.

e. **Nominalisation in Class 9 in no. (6):** the analysis is as in no. (4) except for the formal quale: the formal quale is a result of putting. The agentive role still reflects the act of putting.

f. **Nominalisation in Class 14, no. (7) and (8) above:** the analysis of these two derivations differ only because of the presence of the suffixes [-o] and [-i]. The prefix [bo-] forces an interpretation of [quality] of the two derivations while the suffix [-i] to an animate being as in no. (2) and (3) above. This difference is reflected in the formal qualia where **bobeo** has the feature [quality] on the verb, but **bobei** has the features [quality] and [animate] on the verb because of the suffix [-i].

g. **Semantic Concepts with verbs of putting with a locative argument:**

Class 1 : Human, Actor (person)

Class 7 : Human, Actor (intensive)

Class 3 : Event

Class 3 : Manner of event

Class 5 and 9 : Result, Action

Class 14 with [-o]: Quality of putting

Class 14 with [-i]: Quality of a person

(4.2) Verbs of removing

	cl. 1	cl.3	cl. 5	cl. 7	cl. 9	cl.14[-o]	cl.14[-i]
amoha	moamohi	moamoho		seamohi	kamoho	boamoho	boamohi
ntsha	montshi				ntsho	bontsho	bontshi
kotula	mokotudi	mokotulo		sekotudi	kotulo	bokotulo	bokotudi
hlakola	mohlakodi	mohlakolo		sehlakodi sehlakolo	tlhakolo	bohlakolo	bohlakodi
fala	mofadi	mofalo		sefadi sefalo	phalo	bofalo	bofadi
peteta	mopeteti	mopeteto		sepeteti	peteto	bopeteto	bopeteti
phahla	mophahli	mophahlo		sephahli	phahlo	bophahlo	bophahli
latswa	molatswi	molatso		selatswi	tatso	bolatso	bolatswi

amoha (take away from)

A. [Person]:

Class 1, 7: moamohi, seamohi (one who takes away)

B. [Event, Manner]:

Class 3: moamoho (taking away, way of taking away)

C. [Result, Action]:

Class 9: kamoho (a taking away, act of taking away)

D. [State]:

Class 14: boamoho (quality of taking away)

boamohi (quality of one who takes away)

ntsha (take out)

A. [Person]:

Class 1: montshi (one who takes out)

B. [Action]:

Class 9: ntsho (act of taking out)

C. [State]:

Class 14: bontsho (quality of taking out)
bontshi (quality of one who takes out)

kotulo (harvest, reap)

A. [Person]:

Class 1, 7: mokotudi, sekotudi (harvester)

B. [Event, Manner]:

Class 3: mokotulo (harvesting, way of harvesting)

C. [Result, Action]:

Class 9: kotulo (harvest, act of harvesting)

D. [Quality]:

Class 14: bokotulo (quality of harvesting)
bokotudi (quality of harvester)

hlakola (clean, wipe away)

A. [Person]:

Class 1, 7: mohlakodi, sehlakodi (one who wipes)

B. [Event, Manner]:

Class 3: mohlakolo (wiping, way of wiping)

C. [Instrument]:

Class 7: sehlakolo (towel, duster)

D. [Result, Action]:

Class 9: tlhakolo (a wiping away, act of wiping)

E. [Quality]:

Class 14: bohlakolo (quality of wiping)
bohlakodi (quality of one who wipes)

fala (scrape)

A. [Person]:
Class 1, 7: mofadi, sefadi (one who scrapes)

B. [Event, Manner]:
Class 3: mofalo (scraping, way of scraping)

C. [Instrument]:
Class 7: sefalo (iron for scraping (pots))
Class 9: phalo (adze for scraping (skins))

D. [Result, Action]:
Class 9: phalo (bit scraped off a skin, act of scraping)

E. [State]:
Class 14: bofalo (quality of scraping)
bofadi (quality of one who scrapes)

phahla (unload, pack up)

A. [Person]:
Class 1, 7: mophahli, sephahli (one who packs up)

B. [Event, Manner]:
Class 3: mophahlo (packing up, way of packing up)

C. [Result, Action]:
Class 9: phahlo (load, goods, act of packing up)

D. [Quality]:
Class 14: bophahlo (quality of packing up)
bophahli (quality of one who packs up)

latswa (taste)

A. [Person]:

Class 1, 7: molatswi, selatswi (taster)

B. [Event, Manner]:

Class 3: molatso (tasting, way of tasting)

C. [Result, Action]:

Class 9: tatso (a tasting, act of tasting)

D. [Quality]:

Class 14: bolatso (quality of tasting)

bolatswi (quality of taster)

Nominalisation from the verb amoha:

(1) **The verb <u>amoha</u>** (take away from):

Mme o–amohile ngwana lamunu.

(Mother took away an orange from the child)

amoha

ARGSTR	=	ARG 1 = x : animate
		ARG 2 = y : phys. obj
		D – ARG 1 = z : source
EVSTR	=	E1 = e_1 : process
		E2 = e_2 : state
		Restr = Temporally ordered
		Head = e_2
QUALIA	=	FORMAL = from (e_2, x, z)
		AGENTIVE = amoha_act (e_1, x, y)

Hierarchy of Semantic Concepts:

Take away – Source – Contact

The lexical representation of **amoha** has the following features:

- it consists of three arguments in which one is a default argument which is a source.

- the event structure features two events i.e., process of taking away and the state of taking away. These event are temporally ordered. They are headed by the state (e_2).

- in the qualia, the formal represents the state of the object taken from a source by an animate; the agentive represents the act of taking away.

(2) **Nominalisation in Class 1:**

Moamohi (one who takes away)

Moamohi wa Mme lamunu o–kgotsofetse.

(The one who takes away of a mother an orange is satisfied).

moamohi

AGRSTR =	ARG 1 = x : human	
	D – ARG 1 = y : phys. obj	
	D – ARG 2 = z : source	
EVSTR =	D – E1	= e_1 : process
	D – E2	= e_2 : state
	Restr	= Temporally ordered
	Head	= e_2
QUALIA =	FORMAL	= from (e_2, x, y)
	AGENTIVE	= amoha_act (e_1, x, y)

Hierarchy of Semantic Concepts:

Remove – Source – Contact – Human

The lexical representation of **moamohi** shows that the argument structure consists of three arguments in which two are default arguments. The event structure features the process and the state. These events are temporally ordered and they are headed by the state (e_2). The qualia has the formal quale and the agentive quale. The formal quale represents the state of what has been taken (y), by whom (x) from who (z) and the act of taking away (e_1) is represented by the agentive quale.

(3) **Nominalisation in Class 7:**

Seamohi (one who takes away frequently)

Seamohi sa Mme lamunu se–kgotsofetse.

(The one who takes away frequently of a mother an orange is satisfied).

seamohi

ARGSTR = AGR 1 = x : human
D – ARG 1 = y : phys. obj
D – ARG 2 = z : source

EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2

QUALIA = FORMAL = from (e_2, x, y, z)
AGENTIVE = amoha_act_intensive (e_1, x)

Hierarchy of Semantic Concepts;

Remove – Source – Intensive – Contact – Human

The lexical representation of **seamohi** in no. (3) is the same as in no. (2) above. The only difference is reflected in the agentive qualia role: the feature [intensive] makes a distinction between the two.

(4) **Nominalisation in Class 3:**

Moamoho (taking away)

Moamoho wa ngwana lamunu ha–o motle.

(The taking away of an orange from a child is not good)

moamoho

ARGSTR = ARG 1 = e : r
D – ARG 1 = x : animate
D – ARG 2 = y : phys. obj
D – ARG 3 = z : source

EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2

QUALIA = FORMAL = (e_r, x , y, z)
AGENTIVE= amoha_act (e_1, x, y)

Hierarchy of Semantic Concepts:

Remove – Source – Contact – Event

The lexical representation of **moamoho** in no. (4) above shows that in the argument structure, there are three default arguments i.e., animate, physical object and source, and a reference to the event. In the event structure, the process and the state are temporally ordered. These events are headed by the state (e_2) event. In the qualia, formal and agentive roles are presented (i.e., identity of ARG 1 and the act of taking away).

(5) **Nominalisation in Class 3: Manner**

Moamoho (the way of taking away)

Moamoho wa ntja dijo ha–o–a–loka .

(he way of taking away food from a dog is not in order)

moamoho

ARGSTR = ARG 1 = e : r
D – ARG 1 = x : animate
D – ARG 2 = y : phys. obj
D – ARG 3 = z : source

EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2

QUALIA = FORMAL = (e_r, x, y, z)
AGENTIVE= amoha_act_manner (e_1, x, y)

Hierarchy of Semantic Concepts:

Remove – Source – Manner – Contact – Event

Within the structure of **moamoho** above in no. (5):

- the structure is the same as that one in no. (4), the only difference is found to be in the agentive quale (i.e., the manner of the event in no. (5), but in no. (4) only the event without specification).

(6) **Nominalisation in Class 9:**

Kamoho (act of taking away / taking away)

Kamoho ya bana ya ditokelo ha–e–a-loka.

(The act of taking away the children ‘s rights is not in order).

kamoho

ARGSTR = ARG 1 = e : r
D – ARG 1 = x : animate
D – ARG 2 = y : phys. obj
D – ARG 3 = z : source

EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2

QUALIA = FORMAL = amoha_result (e_r, x, y, z)
AGENTIVE = amoha_act (e_1, x, y)

Hierarchy of Semantic Concepts:

Remove – Source – Contact – Result – Action

The lexical representation of **kamoho** in no. (6) above shows that:

- three default arguments (i.e., animate, physical object and a source) and a reference of the event itself, are presented in the argument structure.
- two default events (i.e., process and state) are presented in the event structure; these events are temporally ordered.
- they are headed by the state event.
- the formal and agentive roles are presented in the qualia (i.e., the result and the act of taking away).

(7) **Nominalisation in Class 14 with suffix [-o]:**

Boamoho (quality of taking away)

Boamoho ba batho dithunya bo–phahame.

(The quality of taking away firearms from the people is high).

boamoho

ARGSTR = ARG 1 = e : r
D – ARG 1 = x : animate
D – ARG 2 = y : phys. obj
D – ARG 3 = source

EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2

QUALIA = FORMAL = amoha_result_quality (e_r, x, y, z)
AGENTIVE = amoha_act (e_1, x)

Hierarchy of Semantic Concepts:

Remove – Source – Contact – Quality – State

The lexical representation of **boamoho** in no. (7) above shows that:

- three default arguments (i.e., animate, physical object and a source) and a reference of the event itself, are presented in the argument structure.
- two default events (i.e., process and state) are presented in the event structure.
- these events are temporally ordered.
- they are headed by the state (e_2) event;
- the formal and agentive roles are presented in the qualia (i.e., the quality of the result and the act of taking away).

(8) **Nominalisation in Class 14 with suffix [-i]:**

Boamohi (quality of the one who takes away)

Boamohi ba batho ba dibetsa ke toka.

(The quality of the one who takes away weapons from the people is justice)

boamohi

ARGSTR = ARG 1 = e : r
D – ARG 1 = x : human
D – ARG 2 = y : phys. obj
D – ARG 3 = z : source

EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2

QUALIA = FORMAL = amoha_esult_quality_animate (e_r, x, y, z)
AGENTIVE = amoha_act (e_1, x, y)

Hierarchy of Semantic Concepts:

Remove – Source – Contact – Animate – Quality – State

Within the structure of **boamohi** above in no. (8): the structure is the same as in no. (7), the only difference is found in the formal quale, because of the animate feature which specifies the quality of the one who takes away.

Notes on verbs of removing.

a. The verbs of removing in the list above have the same analysis as the verb **amoha** in no. (1). These verbs have three arguments in which one is a default argument (i.e., a source). The event structure features the process and the state events. The qualia have a formal and agentive roles which are the same in all the verbs of removing.

b. **Nominalisation in Class 1:** the presence of the prefix [mo-] and suffix [-i] forces an interpretation of human on the argument of **moamohi.** The analysis is the same as in no. (1) above.

c. **Nominalisation in Class 7:** the analysis reflects the one in no. (2) except for agentive quale: the presence of the prefix [se-] forces the feature [intensive] on the verb **amoha.**

d. **Nominalisation in Class 3:** the argument of **moamoho** in both no. (4) and (5) above refers to the event of taking away (r = reference, e = event). This argument

is reflected in the formal quale as (e_r, x, y, z).The analysis in no. (5) is the same as in no. (4) except for the agentive quale which specifies the manner of the act in no. (5).

e. **Nominalisation in Class 9 in no. (6):** the analysis is as in no. (4) except for the formal quale: the formal quale is a result of taking away. The agentive role still reflects the act of taking away.

f. **Nominalisation in Class 14 no. (7) and (8) above:** the analysis of the two derivations differ only because of the presence of the suffixes [-o] and [-i]. This difference is reflected in the formal quale where **boamoho** has the feature [quality], but **boamohi** has the features [quality] and [animate] on the verb because of suffix [-i].

g. **Semantic Concepts with verbs of removing:**

Class 1 : Human, Actor (person)

Class 7 : Human, Actor (intensive)

Class 3 : Event

Class 3 : Manner of event

Class 9 : Result, Action

Class 14 with [-o] : Quality of removing

Class 14 with [-i] : quality of a person

(5) Ditransitive verbs

(5.1) Verbs of change of possession

	cl. 1	**cl. 3**	**cl. 5**	**cl. 7**	**cl. 9**	**cl.14[-o]**	**cl.14[-i]**
nea	monei	moneo		senei	neo		bonei
fa	mofi	mofo	lefa	sefi	mpho		bofi
adima	moadimi	moadimo	leadimo	seadimi	kadimo	boadimo	boadimi
tima	motimi	motimo			timi	botimo	botimi

nea (give)

A. [Person]:

Class 1, 7: monei, senei (giver)

B. [Event, Manner]:

Class 3: moneo (giving, way of giving)

C. [Result, Action]:

Class 9: neo (gift, act of giving)

D. [State]:

Class 14: bonei (quality of giver)

fa (give)

A. [Person]:

Class 1, 7: mofi, sefi (giver)

B. [Event, Manner]:

Class 3: mofo (giving, way of giving)

C. [Result]:

Class 5: lefa (inheritance)

Class 9: mpho (gift, present)

D. [State]:

Class 14: bofi (quality of giver)

adima (lend, borrow)

A. [Person]:

Class 1, 7: moadimi, seadimi (lender)

B. [Event, Manner]:

Class 3: moadimo (lending, way of lending)

C. [Result]:

Class 5: leadimo (borrowed thing)

Class 9: kadimo (loan)

D. [State]:

Class 14: boadimo (quality of lending)

boadimi (quality of lender)

tima (deprive, not to give)

A. [Person]:

Class 1, 9: motimi, timi (one who deprives)

B. [Event, Manner]:

Class 3: motimo (depriving, way of depriving)

C. [State]:

Class 14: botimo (quality of depriving)

botimi (quality of one who deprives)

Nominalisations from the verb nea:

(1) **The verb <u>nea</u> (**give)

Mme o–neile ngwana apole.

(Mother gave the child an apple).

nea

ARGSTR = ARG 1 = x : animate
ARG 2 = y : recipient
ARG 3 = z : phys. obj

EVSTR = E1 = e_1 : process
E2 = e_2 : state
Restr = Temporally ordered
Head = e_1

QUALIA = FORMAL = nea_result (e_2, z)
AGENTIVE = nea_act (e_1, x, y, z)

Hierarchy of Semantic Concepts:

Give – Change of possession

The lexical representation of **nea** presents the argument structure with three arguments (i.e., the person who gives; the person who receives and the physical object that is

being given). In the event structure, two events are presented i.e., the process of giving and the state of give. In this structure these events are temporally ordered; and they are being headed by the process (e_1) event. In the qualia, the formal shows the result of giving (state) and the agentive which is the act of giving (e_1, x, y, z).

(2) **Nominalisation in Class 1:**

Monei (giver)

Monei wa ngwana apole o–ile.

(The giver of the child an apple is gone).

monei

ARGSTR =	ARG 1 = x : human	
	D – ARG 1 = y : recipient	
	D – ARG 2 = z : phys. obj	
EVSTR =	D – E1	= e_1 : process
	D – E2	= e_2 : state
	Restr	= Temporally ordered
	Head	= e_1
QUALIA =	FORMAL	= nea_result (e_2, z)
	AGENTIVE	= nea_act (e_1, x, y)

Hierarchy of Semantic Concepts:

Give – Change of possession – Human

The structure of **monei** above presents the argument structure with three arguments as in no. (1) above i.e., one who gives, one who receives and the physical object being given. The last two are default arguments. The event structure presents the process of giving and the state of give. These events are default events. They are temporally ordered in which event one is the head of these events. The formal quale represents the result of giving (state) and the agentive is the act of giving.

(3) **Nominalisation in Class 7:**

Senei (one who gives much)

Senei sa ngwana apole se–ile.

(The one who gives much of the child an apple is gone).

senei
ARGSTR = ARG 1 = x : human
D – ARG 1 = y : recipient
D – ARG 2 = z : phys. obj
EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2
QUALIA = FORMAL = nea_result (e_2, z)
AGENTIVE= nea_act_intensive (e_1, x, y)

Hierarchy of Semantic Concepts:

Give – Intensive – Change of possession – Human

The structure of **senei** above presents the argument structure with three arguments as in no. (1) and (2) above (i.e., one who gives, one who receives or accept and the object being offered). The event structure presents default events (i.e., the process of giving and the state of giving). These events are temporally ordered in which (e_1) heads these events. The formal is the result (e_2) of giving and the agentive show the intensive act of giving.

(4) **Nominalisation in Class 3:**

Moneo (giving)

Moneo wa ngwana apole o–lokile.

(The giving of the child an apple is in order).

moneo
ARGSTR = ARG 1 = e : r
D – ARG 1 = x : human
D – ARG 2 = y : recipient
D – ARG 3 = z : phys. obj
EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_2
QUALIA = FORMAL = (e_r, x, z)
AGENTIVE = nea_act (e_1, x, y)

Hierarchy of Semantic Concepts:

Give – Change of possession – Event

The structure of **moneo** above presents the argument structure with four arguments in which the first one is the reference of the event of giving itself and others are default arguments (i.e., one who gives; one who receives and the given object).Two default events are presented (i.e., the process (e_1) and the state (e_2). These events are temporally ordered in this structure. The formal quale represents the identity of ARG 1 and the agentive shows the act of the giver giving the physical object.

(5) **Nominalisation in Class 3: Manner**

Moneo (way of giving)

Moneo wa ngwana dibuka ha – o motle.

(The way of giving the child books is not good)

moneo

ARGSTR = ARG 1 = e : r
D – ARG 1 = x : human
D – ARG 2 = y : recipient
D – ARG 3 = z : phys. obj

EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_1

QUALIA = FORMAL = (e_r, x, z)
AGENTIVE = nea_act_manner (e_1, x, y)

Hierarchy of Semantic Concepts:

Give – Manner – Change of possession – Event

The structure of **moneo** above presents the argument structure which is the same as the one in no. (4) above. The whole explanation is the same, with the only difference being the feature [manner] in the agentive quale.

(6) **Nominalisation in Class 9:**

Neo (gift / act of giving)

Neo ya ngwana apole e–lokile.

(The act of giving the child an apple is in order)

neo
ARGSTR = ARG 1 = e : r
D – ARG 1 = x : human
D – ARG 2 = y : recipient
D – ARG 3 = z : phys. obj
EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_1
QUALIA = FORMAL = nea_result (e_r, x, z)
AGENTIVE= nea_act (e_1, x, y)

Hierarchy of Semantic Concepts:

Give – Change of possession – Result – Action

Within the structure for **neo** above, the argument structure consists of the reference of the event of giving itself; human, recipient and the physical object (which are the default arguments). The event structure consists of the default process and state events which are temporally ordered. The formal quale represents the result of the giving event; the agentive represents the act (process) of giving by human to the recipient.

(7) **Nominalisation in Class 14 with suffix [-i]:**

Bonei (quality of a giver)

Bonei ba ngwana apole bo–amohelehile.

(The quality of a giver of the child of an apple is acceptable).

bonei
ARGSTR = ARG 1 = e :
D – ARG 1 = x : human
D – ARG 2 = y : recipient
D – ARG 3 = z : phys. obj
EVSTR = D – E1 = e_1 : process
D – E2 = e_2 : state
Restr = Temporally ordered
Head = e_1
QUALIA = FORMAL = nea_result_quality_animate (e_r, x, z)
AGENTIVE= nea _act (e_1, x, y)

Hierarchy of Semantic Concepts:

Give – Change of possession – Animate – Quality – State

The lexical representation of **bonei** in no. (7) above can be explained in the same way as in no. (6) above. The only difference will be the formal quale in which no. (6) shows the result of giving while in no. (7), the quality of the result of a human.

Notes on verbs of change of possession:

a. The verbs of change of possession consists of three arguments in which one is an animate argument. The event structure consists of the process and the changed state. The qualia structure is made up of the formal quale in which an animate argument changes from the process (e_1) to the resulted state (e_2, z); and the agentive quale that shows the act of an animate giving the recipient a physical object (i.e., (e_1,x, y, z)).

b. **Nominalisation in Class 1:** there are three arguments in the argument structure just like in the verb in no. (1) above. The first argument specifies the human as compared to an animate of the verb in no. (1) above. The semantic concept has to refer to this feature, i.e., human which is related to the presence of the affix [mo-] and [-i].

c. **Nominalisation in Class 7:** the only difference with the analysis in Class 1 above relates to the feature **intensive** on the verb **nea** in the formal quale in no. (3) above. The presence of the prefix [se-] forces this interpretation while the suffix [-i] refers to the feature [human].

d. **Nominalisation in Class 3 (no. (4) and (5) above) :** the argument of **moneo** refers to the event itself (e:r) where [r] indicates the reference of the argument. This event refers to the event of giving. The analysis in no. (5) is the same as in no. (4) except for the presence of the feature [manner] on the verb **nea** in the agentive quale.

e. **Nominalisation in Class 9 in no. (6):** the analysis is the same as in the case of the event **moneo** in no. (4) above except for the formal quale: this formal quale has to represent the result of giving, i.e., a gift. The agentive role still reflects the act of giving.

f. **Nominalisation in Class 14 in no. (7):** the analysis of **bonei** has an animate argument; and the agentive quale has to represents the feature [quality (of the state] in the derivation. The feature [animate] in no. (7) above, has to be present because of the suffix [-i]; and the prefix [bo-] forces the interpretation of quality (of a state).

g. **Semantic Concept with verbs of change of possession.**

Class 1 : Human, Actor (person)

Class 7 : Human, Actor (intensive)

Class 3 : Event

Class 3 : Manner of event

Class 9 : Action, Result

Class 14 with [-i]: Quality of person

(5.2) Verbs of communication

	cl. 1	**cl. 3**	**cl. 5**	**cl.7**	**cl. 9**	**cl.14[-o]**	**cl.14[-i]**
botsa	mmotsi	mmotso	lebotsi	sebotsi sebotsa	potso		bobotsi
ruta	moruti	moruto			thuto		boruti
kopa	mokopi	mokopo		sekopi	kopo		bokopi

botsa (ask, inquire)

A. [Person]:

Class 1, 7: mmotsi, sebotsi (inquirer)

B. [Event, Manner]:

Class 3: mmotso (questioning, way of questioning)

C. [Result]:

Class 5, 7: lebotsi, sebotsa (interrogative)

Class 9: potso (question)

D. [State]:

Class 14: bobotsi (quality of inquirer)

ruta (teach)

A. [Person]:

Class 1: moruti (teacher, preacher)

B. [Event, Manner]:

Class 3: moruto (preaching, way of preaching)

C. [Result, Action]:

Class 9: thuto (lesson, education, educating)

D. [State]:

Class 14: boruti (quality of preacher, ministry)

kopa (request)

A. [Person]:

Class 1, 7: mokopi, sekopi (beggar, applicant)

B. [Event, Manner]:

Class 3: mokopo (begging, way of begging)

C. [Result, Action]:

Class 9: kopo (request, act of requesting)

D. [State]:

Class 14: bokopi (quality of beggar)

Nominalisations from the verb botsa:

(1) **The verb <u>botsa</u>** (ask)

Titjhere e–botsa moithuti dipotso.

(The teacher ask a learner questions).

botsa
ARGSTR = ARG 1 = x : human
ARG 2 = y : recipient
ARG 3 = z : question
EVSTR = E1 = e_1 = process
QUALIA = FORMAL = x
AGENTIVE = botsa_act (e_1, x)

Hierarchy of Semantic Concepts:

Ask – Communication

The lexical representation of **botsa** presents three argument (i.e., the human who asks and one who is asked and the question). The event structure consists of the process of asking. The qualia presents the formal quale which gives the identity of AGR1 and the agentive gives the act of asking.

(2) **Nominalisation in Class 1:**

Mmotsi (inquirer)

Mmotsi wa motjhotjhosi dipotso o–halefile.

(The inquirer of the prosecutor questions is angry)

mmotsi
ARGSTR = ARG 1 = x : human
D – ARG 1 = recipient
D – ARG 2 = question
EVSTR = D – E1 = e_1 : process
QUALIA = FORMAL = x
AGENTIVE = botsa+act (e_1, x)

Hierarchy of Semantic Concepts:

Actor – Ask – Communication – Human

Within the structure of **mmotsi,** the argument structure presents three arguments in which two are default arguments (i.e., human who asks someone a question). The event structure consists of the default event (i.e., the process of asking). The qualia presents the formal (the identity of ARG1) and the agentive (for the act of asking).

(3) **Nominalisation in Class 7:**

Sebotsi (one who inquires much)

Sebotsi sa baithuti dipotso se–kgotsofetse.

(The one who inquires much of the learners questions is satisfied).

sebotsi
ARGSTR = ARG 1 = x : human
D – ARG 1 = y : recipient
D – ARG 2 = z : question
EVSTR = D – E1 = e_1 : process
QUALIA = FORMAL = x
AGENTIVE= botsa_act _intensive (e_1, x)

Hierarchy of Semantic Concepts:

Actor – Intensive – Ask – Communication – Human

Within the structure of **sebotsi**, the explanation is the same as that in no. (2) above. The only difference is found in the agentive quale, in which the [intensive] act of asking is shown in no. (3).

(4) **Nominalisation in Class 3:**

Mmotso (questioning)

Mmotso wa baithuti dipotso ke ntho e ntle.

(The questioning of the students questions is a good thing).

mmotso
ARGSTR = ARG 1 = e : r
D – ARG 1 = x : human
D – ARG 2 = y : recipient
D – ARG 3 = z : question
EVSTR = D – E1 = e_1 : process
QUALIA = FORMAL = (e_r, x, z)
AGENTIVE = botsa_act (e_1, x)

Hierarchy of Semantic Concepts:

Ask – Communication – Event

The lexical representation of **mmotso** in no. (4) shows that there are four arguments in which three are the default arguments. The first argument is the reference of the event of asking itself and the other three represent the human, recipient and the question. The event structure consists of the default event (i.e., the process of asking). The qualia features the formal quale which shows the identity of the event in AGR1. The agentive quale presents the act of asking.

(5) **Nominalisation in Class 3:Manner**

Mmotso (way of questioning / inquiring)

Mmotso wa dinokwane dipotso o–lokile.

(The way of questioning of the criminals questions in order).

mmotso

ARGSTR = ARG 1 = e : r
D – ARG 1 = x : human
D – ARG 2 = y : recipient
D – ARG 3 = z : question

EVSTR = D – E1 = e_1 : process

QUALIA = FORMAL = (e_r, x, z)
AGENTIVE = (botsa_act_manner (e_1, x)

Hierarchy of Semantic Concepts:

Manner – Ask – Communication – Event

The lexical representation of **mmotso** in no. (5) above can be explained in the same way as in no. (4) above. The only difference is that no. (4) represents the event of **mmotso** while no. (5) represents the [manner] of the event of **mmotso**. This is noticed in the agentive of no. (5) above.

(6) **Nominalisation in Class 5:**

Lebotsi / Sebotsa (interrogative)

Lebotsi la sethothokisi dipotso le–tlwalehile.

(The interrogative of a poet of questions is sociable)

lebotsi
sebotsa

ARGSTR =	ARG 1 = x : interrogative
	D – ARG 1 = y : recipient
	D – ARG 2 = z : human
EVSTR =	D – E1 = e_1 : process
QUALIA =	FORMAL = x
	AGENTIVE= botsa_act (e_1, z, y)

Hierarchy of Semantic Concepts:

Ask – Communication – Question

Within the structure of **lebotsi**, and **sebotsa**, the argument structure consists of three arguments in which two are the default arguments i.e., one who has be asked and the one who asks. The event structure consists of the default event which is a process of asking. In the qualia, the formal shows ARG1; and the agentive quale shows the act of asking.

(7) **Nominalisation in Class 9:**

Potso (question)

Potso ya lepolesa senokwane e–thata.

(The question of a policeman a criminal is difficult)

potso

ARGSTR =	ARG 1 = x : question
	D – ARG 1 = y : recipient
	D – ARG 2 = z : human
EVSTR =	D – E1 = e_1 : process
QUALIA =	FORMAL = x
	AGENTIVE= botsa_act (e_1, z, y)

Hierarchy of Semantic Concepts:

Ask – Question – Communication

The lexical representation of **potso** in no. (7) above can be explained the same as in no. (6) above. The only difference is in the formal quale which reflects ARG 1 which is different in the two cases.

(8) **Nominalisation in Class 14 with the suffix [-i]:**

Bobotsi (quality of inquirer)

Bobotsi ba baqolotsi ditaba tsa bobodu bo–lokile.

(The quality of an inquirer of the journalists of news of corruption is in order).

bobotsi
ARGSTR = ARG 1 = e : r
D – ARG 1 = x : human
D – ARG 2 = y : recipient
D – ARG 3 = z : question
EVSTR = D – E1 = e_1 : process
QUALIA = FORMAL = botsa_result_quality_animate (e_r, x, z)
AGENTIVE = botsa_act (e_1, x)

Hierarchy of Semantic Concepts:

Actor – Ask – Communication – Quality – Animate – State

The lexical representation of **bobotsi** in no. (8) above presents four arguments in which three are the default arguments. The first argument is the reference of the event of asking and the other three represent the human who is asking, the recipient and the question. The event structure consists of the default event (i.e., the process of asking). The qualia features the formal quale which shows the result of the quality of an animate. The agentive quale presents the act of asking.

Notes on verbs of communication:

a. In the verbs of communication, the argument structure consists of three arguments, in which one is an animate argument. The event is a process and the qualia structure is made up of the formal (identity of **x**) and agentive, which shows the process of questioning (e_1, x).

b. **Nominalisation in Class 1:** the analysis is a reflection of the verb in no. (1) above, except that an animate argument is now only human and the semantic concepts has to refer to this feature, i.e., human which is related to the presence

of the affixes [mo-] and [-i]. The two default arguments may represent the recipient and the question.

c. **Nominalisation in Class 7:** the only difference with the analysis in Class 1 in no. (2) above is related to the feature [intensive] on the verb **botsa** in the formal qualia in no. (3) above. The presence of the prefix [se-] forces this interpretation while the suffix [-i] refers to the feature [human].

d. **Nominalisation in Class 3 no. (4) and (5):** the argument of **mmotso** refers to the event itself (e:r) where [r] indicates the reference of the argument. This event refers to the event structure of the verb which indicates a process. The same derivation in Class 3 is given in no. (5) above. This derivation is thus ambiguous with regard to the extra feature [manner] which is present on the verb **botsa** in the formal qualia in no. (5). The analysis of no. (5) is the same as that of no. (4) above.

e. **Nominalisation in Class 5 and Class 9 (no. 6, 7 above):** ARG 1 is different from all other argument structures.

f. **Nominalisation in Class 14 (no. 8):** in this analysis **bobotsi** has an animate, and the agentive quale has to represent the feature [quality (of the state)] in the derivation. The feature [animate] in no. (8) above has to be present because of the suffix [-i]; and the prefix [bo-] forces an interpretation of quality (of a state).

g. **Semantic Concepts with verbs of communication.**

Class 1: Human, Actor (person)

Class 7: Human, Actor (intensive)

Class 3: Event

Class 3: Manner of event

Class 5: Result

Class 9: Result, Action

Class 14 with suffix [-i]: Quality of person

4.4.3.2 Control of arguments and the possessive with derivations

(1) Intransitive verbs

(1.1) State verbs

(a) Animate subjects

Hlahafala → mohlahafadi (wild person)|
Example: 1. [Mona enwa] o- hlahafetse
(This man is wild)

With the subject of the sentence in (1) above:

[Mohlahafadi wa monna] o- tshwerwe
(The wild person of a man has been arrested)

The meaning is descriptive and does not refer to **mohlahafadi** being the possession of the man. The description is that of a man who is wild.

(b) Inanimate subjects

Oma → moomo (way of drying)
Example: 1. [Kobo] e- omme
(The blanket is dry)

With the subject of the sentence in (1) above:

[Moomo wa kobo] o- motle
(The drying of the blanket is good)

The meaning is also descriptive and does not refer to **moomo** being the possession of the blanket. The description is that of the way the blanket is drying.

(c) Animate or inanimate subjects

Toka / toko (righteousness)

Example: 1. [Monna enwa] o- lokile

(This man is righteous)

With the subject of the sentence in (1) above :

[Toka ya monna] e- a- kgotsofatsa

(The righteousness of the man is satisfying)

The meaning will be that of a possessive. Toka will be the possession of the man. The suffix [-o/a] will be able to control the only argument of the sentence.

1.2 Motion verbs

Tsamaya → Setsamai (traveler)

Example: 1.[Monna] o- tsamaile

(The man walked)

With the subject of the sentence in (1) above:

[Setsamai sa monna] se- fihlile

(The traveller of a man has arrived)

The meaning is that of descriptive (i.e. the man who is traveling. The meaning of possession is not there.

(1.3) Weather verbs

Foka → bofoko

Example: 1. [Moya] o- a- foka

(The wind is blowing)

With the subject of the sentence in (1) above:

[Bofoko ba moya] ke ntho e teng
(The state of blowing of the wind is a present thing)

The meaning is descriptive. There is no relationship of possessive.

(1.4) Verbs relating to the body

(1.4.1) Bodily processes

Kgohlela → sekgohlela (mucus)
Example: 1. [Monna] o- kgohlela hampe
(The man coughs badly)

With subject of the sentence of the sentence in (1) above:

[Sekgohlela sa monna] se- a- tshabeha
(The mucus of the man is frightening)

The meaning show the relationship of the possessor and the one who is possessed. The possessive is present.

(1.4.2) Bodily damage

Fokola → bofokodi
Example: 1. [Ngwana] o- fokotse
(The child is weak)

With the subject of the sentence in (1) above:

[Bofokodi ba ngwana] ha-bobotle]
(The state of a weak person of a child is not good)

The meaning is that of descriptive. The state of a weak child is described.

1.5 Experiencer verbs

Thaba → thabo (joy)
Example: 1. [Ngwana] o- thabile
(The child is happy)

With the subject of the sentence in (1) above:

[Thabo ya ngwana] e- a- kgapatseha
(The joy of the child is overflowing)

The meaning is that of a possession because the child ‘s joy is an internal feeling that is owned by the child.

(2.) Intransitive with a locative argument: motion verbs

(2.1) The locative refers to a location

Dula → sedulo
Example: [Monna] o- dula [ntlong]
(The man sits/ stays in a house)

With the subject of the sentence in (2.1) above:

[Sedulo sa monna] se- a- hlokahala
(A seat of a man is needed)

With the locative of the sentence in (2.1) above:

(a) [Sedulo ntlong] se- a- hlokahala
(A seat in a house is needed)

(b) [Sedulo sa ntlong] se- a- hlokahala
(A seat of the house is needed)

With the subject and the locative in (2.1) above:

(a) [Sedulo sa monna ntlong] se- a- hlokahala
(A seat of a man in the house is needed)

(b) [Sedulo sa monna sa ntlong] se- a- hlokahala
(A seat of a man of the house is needed)

In (2.1) above, the meaning is that of a possessive, because ‘a seat’ is a possession of ‘the man’. However, in (2.1) above, the meaning is descriptive. The house cannot own ‘a seat’. In (2.1) above, the only possession relationship is that of the man and the seat; not the man and the house.

(2.2) The locative refers to source

Kgutla → mokgutli (one who returns)
Example: [Ntate] o- kgutla [motseng]
(Father comes back from the village)

(2.2.1) With the subject of the sentence in (2.2) above:
[Mokgutli wa ntate] o- swabile
(The one who returns of a father is sad)

(2.2.2) With the locative of the sentence in (2.2) above:

a. [Mokgutli motseng] o- swabile
(The one who returns from the village is sad)

b. [Mokgutli wa motseng] o- swabile
(The one who returns of the village is sad)

(2.2.3) With the subject and the locative of the sentence in (2.2) above:

a. [Mokgutli wa ntate motseng] o- swabile
(The one who returns of a father from the village is sad)

b. [Mokgutli wa ntate wa motseng] o- swabile
(The one who returns of a father of the village is sad)

In both cases above (i.e. 2.2.1 – 2.2.3), the relationship is that of description. In (2.2.1) above, the father who returns is descriptive. The description in (2.2.2) above, has the meaning of one who returns of the village. In (2.2.3) above, there is no possession.

(2.3) The locative refers to direction

Ya → boyo
Example: [Kwete] e- ya [kerekeng]
(A gentleman goes to church)

(2.3.1) With the subject of the sentence in (2.3) above:

[Boyo ba kwete] bo- lokile
(The place of going of a gentleman is in order)

(2.3.2) With the locative of the sentence in (2.3) above:

a. [Boyo kerekeng] bo- lokile
(The place of going to the church is in order)

b. [Boyo ba kerekeng] bo- lokile
(The place of going of the church is in order)

(2.3.3) With the subject and the locative of the sentence in (2.3) above:

a. [Boyo ba kwete kerekeng] bo- lokile
(The place of going of a gentleman to the church is in order)

b. [Boyo ba kwete ba kerekeng] bo- lokile
(The place of going of a gentleman of the church is in order)

In both (2.3.1 – 2.3.3) above, the interpretation is that of descriptive. The destination or the place of going of a gentleman is described in terms of the subject and the locative.

(3.) Transitive verbs

(3.1) Verbs of change of state

roba → morobi (one who breaks)
Example: [Mona] o- roba [molamu]
(The man breaks the stick)

(3.1.1) With the subject of the sentence in (3.1) above:

[Morobi wa monna] o- ile
(The one who breaks of a man is gone)

(3.1.2) With the object of the sentence in (3.1) above:

*a. [Morobi molamu] o-ile
(The one who breaks the stick is gone)

b. [Morobi wa molamu] o- ile
(The one who breaks of the stick is gone)

(3.1.3) With the subject and the object of the sentence in (3.1) above:

*a. [Morobi wa monna molamu] o- ile
(The one who breaks of a man the stick is gone)

b. [Morobi wa monna wa molamu] o- ile
(The one who breaks of a man of the stick is gone)

In (3.1.1) above, the meaning is descriptive, as the breaker cannot be the possession of the man. In (3.1.2a) above, the sentence is incorrect because of the absence of the possessive marker [wa]. In (3.1.2b) above, the sentence is correct but the meaning is descriptive. In (3.1.3a) above, the meaning is descriptive, but the sentence is incorrect. In (3.1.3b), the sentence is correct but the meaning is descriptive.

(3.2) Verbs of change of possession

Utswa → boutswi (state of one who steals)
Example: [Ngwana] o- utswitse [tswekere]
(The child stole sugar)

(3.2.1) With the subject of the sentence in (3.2) above:

[Boutswi ba ngwana] ha- bo- a- loka
(The state of one who steals of the child is not in order)

(3.2.2) With the object of the sentence in (3.2) above:

*a. [Boutswi tswekere] ha- bo- a- loka
(The state of one who steals sugar is not in order)

b. [Boutswi ba tswekere] ha- bo- a- loka
(The state of one who steals of sugar is not in order)

(3.2.3) With the subject and the object of the sentence in (3.2) above:

*a. [Boutswi ba ngwana tswekere] ha- bo- a- loka
(The state of one who steals of the child sugar is not in order)

b. [Boutswi ba ngwana ba tswekere] ha- bo- a- loka
(The state of one who steals of the child of sugar is not in order)

In (3.2.1) above, the meaning is that of descriptive. The sentence in (3.2.2a) above is incorrect, but the meaning is descriptive. In (3.2.2b) above, the sentence is descriptive and correct. The sentence in (3.2.3a) above, is incorrect with a descriptive meaning, but correct in (b).

(3.3) Verbs of creation

Aha → leaho (dwelling)

Example: [Monna] o- ahile [ntlo]

(The man built a house)

(3.3.1) With the subject of the sentence in (3.3) above:

[Leaho la monna] le letle

(The dwelling of the man is good)

(3.3.2) With the object of the sentence in (3.3) above:

*a. [Leaho ntlo] le letle

(The dwelling the house is good)

b. [Leaho la ntlo] le letle

(The dwelling of the house is good)

(3.3.3) With the subject and the object of the sentence in (3.3) above:

*a. [Leaho la monna ntlo] le letle

(The dwelling of the man the house is good)

b. [Leaho la monna la ntlo] le letle

(The dwelling of the of the house is good)

In (3.3.1) above, the meaning is that of a possessive, there is a relationship of owner (man) and the possession (dwelling). In (3.3.2a) above, the meaning is that of descriptive, even though the sentence is incorrect. In (3.3.2b) above, the meaning is descriptive not possessive. The sentence (3.3.3a) above is incorrect, the absence of the possessive marker [la]. The meaning is possessive on the first part of the man ‘s dwelling. In (3.3.3b) above, the possessive meaning is found in the part of man ‘s dwelling not the dwelling of the house (which is the descriptive meaning).

(3.4) Perception verbs

bona → lebono (sight / view)
Example: [Motho] o- bona [tau]
(A person saw a lion)

(3.4.1) With the subject of the sentence in (3.4) above:

[Lebono la motho] le bohale
(The sight of a person is sharp)

(3.4.2) With the object of the sentence in (3.4) above:

*a. [Lebono tau] le bohale
(The sight the lion is sharp)

b. [Lebono la tau] le- bohale
(The sight of the lion is sharp)

(3.4.3) With the subject and the object of the sentence in (3.4) above:

*a. [Lebono la motho tau] le bohale
(The view of a person the lion is sharp)

b. [Lebono la motho la tau] le bohale
(The view of a person of the lion is sharp)

In (3.4.1) above, there is a meaning of possessive as the person may possess the view / sight. The sentence in (3.4.2a) is incorrect due to the absence of a possessive marker [la]; but in (3.4.2b) above, the meaning is that of a possessive as the lion ‘s eyesight is mentioned. The sentence in (3.4.3a) is incorrect because of the lack of possessive marker; but in (3.4.3b) above, the meaning is that of a possessive as the eyesight of a person seeing the lion is mentioned.

(3.5) Experiencer verbs

tshaba → botshabo (state / quality of fright)
Example: [ngwana] o- tshaba [lehadima]
(The child fears the lightning)

(3.5.1) With the subject of the sentence in (3.5) above:

[Botshabo ba ngwana] bo- lokile
(The quality of fright of the child is in order)

(3.5.2) With the object of the sentence in (3.5) above:

*a. [Botshabo lehadima] bo- lokile
(The quality of fright the lightning is in order)

b. [Botshabo ba lehadima] bo- lokile
(The quality of fright of the lightning is in order)

(3.5.3) With the subject and the object of the sentence in (3.5) above:

*a. [Botshabo ba ngwana lehadima] bo- lokile
(The quality of fright of the child the lightning is in order)

b. [Botshabo ba ngwana ba lehadima] bo- lokile
(The quality of fright of the child of the lightning is in order)

In both (3.5.1 – 3.5.3) above, the meaning is descriptive as both **ngwana** and lehadima cannot own the state of fright. In (3.5.2a) and (3.5.3a) above, the sentences are incorrect because of the lack of possessive marker [ba].

(3.6) Communication verbs

bua → sebui (speaker)
Example: [Mosadi] o- buile [nnete]
(The woman talked the truth)

(3.6.1) With the subject of the sentence in (3.6) above:

[Sebui sa mosadi] se- thabile
(The speaker of the woman is happy)

(3.6.2) With the object of the sentence in (3.6) above:

*a. [Sebui nnete] se- thabile
(The speaker the truth is happy)

b. [Sebui sa nnete] se- thabile
(The speaker of the truth is happy)

(3.6.3) With the subject and the object of the sentence in (3.6) above:

*a. [Sebui sa mosadi nnete] se- thabile
(The speaker of the woman the truth is happy)

b. [Sebui sa mosadi sa nnete] se- thabile
(The speaker of the woman of the truth is happy)

In both (3.6.1 – 3.6.3) above, the meaning is descriptive there is no relationship of possession whatsoever. In (3.6.2a) and (3.6.3a) above, the sentence is incorrect due to the lack of possessive marker [sa]. The descriptive meaning is that of a woman speaker and the truthful speaker.

(4.) Transitive verbs with a locative argument

(4.1) Verbs of putting

bea → mmeo (way of putting)
Example: [Ngwana] o- beile [dibuka][tafoleng]
(The child put the books on the table)

(4.1.1) With the subject of the sentence in (4.1) above:

[Mmeo wa ngwana] o- motle
(The way of placing of the child is fine)

(4.1.2) With the object of the sentence in (4.1)

[Mmeo wa dibuka] o- motle
(The way of placing of the books is fine)

(4.1.3) With the locative of the sentence in (4.1) above:

a. [Mmeo tafoleng] o- motle
(The way of placing on the table is fine)

b. [Mmeo wa tafoleng] o- motle
(The way of placing of the table is fine)

(4.1.4) With the subject and the object of the sentence in (4.1) above:

*a. [Mmeo wa ngwana dibuka] o- motle
(The way of placing of the child the books is fine)

b. [Mmeo wa ngwana wa dibuka] o- motle
(The way of placing of the child of the books is fine)

(4.1.5) With the subject and the locative of the sentence in (4.1) above:

a. [Mmeo wa ngwana tafoleng] o- motle
(The way of placing of the child on the table is fine)

b. [Mmeo wa ngwana wa tafoleng] o- motle
(The way of placing of the child of the table is fine)

(4.1.6) With the object and the locative of the sentence in (4.1) above:

a. [Mmeo wa dibuka tafoleng] o- motle
(The way of placing of the books on the table is fine)

b. [Mmeo wa dibuka wa tafoleng] o- motle
(The way of placing of the books of the table is fine)

The meaning is also of descriptive, the way of placing or putting cannot be possessed by the child and the books. In (4.1.4a) above, the sentence is incorrect due to the lack of possessive marker [wa] which is the argument controller; but in (4.1.5a) and (4.1.6a) above the presence of the locative argument assist in the controlling of the external argument, hence the sentences are correct.

(4.2) Verbs of removing

amoha → kamoho (act of taking away)
Example: [Morena] o- amoha [basadi][banneng]
(The chief takes away the women from men)

(4.2.1) With the subject of the sentence in (4.2) above:

[Kamoho ya morena] ha- e- ntle
(The act of taking away of a chief is not fine)

(4.2.2) With the object of the sentence in (4.2) above:

[Kamoho ya basadi] ha-e- ntle
(The act of taking away of the women is not fine)

(4.2.3) With the locative of the sentence in (4.2) above

a. [Kamoho banneng] ha- e- ntle
(The act of taking away from the men is not fine)

b. [Kamoho ya banneng] ha- e- ntle
(The act of taking away of the men is not fine

(4.2.4(With the subject and the object of the sentence in (4.2) above:

*a. [Kamoho ya morena basadi] ha-e- ntle
(The act of taking away of a chief the women is not fine)

b. [Kamoho ya morena ya basadi] ha-e- ntle
(The act of taking away of a chief of the women is not fine)

(4.2.5) With the subject and the locative of the sentence in (4.2) above:

a. [Kamoho ya morena banneng] ha-e- ntle
(The act of taking away of a chief from the men is not fine)

b. [Kamoho ya morena ya banneng] ha-e- ntle
(The act of taking away of a chief of the men is not fine)

(4.2.6) With the object and the locative of the sentence in (4.2) above:

a. [Kamoho ya basadi banneng] ha-e- ntle
(The act of taking away of the women from the men is not fine)

b. [Kamoho ya basadi ya banneng] ha-e- ntle
(The act of taking away of the women of the men is not fine)

In both cases in (4.2) above, the meaning is descriptive. The act of taking away is not entity that can be owned. In (4.2.4a) above, the sentence is incorrect due to the lack of possessive marker [ya]; but the case of others is different as the locative argument is therefore the control, hence the correct sentences.

(5.) Ditransitive verbs

(5.1) Verbs of change of possession

nea → monei (one who gives)

Example: [Mosadi] o- neile [bana][dijo]

(The woman gave the child food)

(5.1.1) With the subject of the sentence in (5.1) above:

[Monei wa mosadi] o- teng

(The giver of the woman is here)

(5.1.2) With the indirect object in (5.1) above:

[Monei wa bana] o-teng

(The giver of the children is here)

(5.1.3) With the direct object in (5.1)

[Monei wa dijo] o- teng

(The giver of food is here)

(5.1.4) With the subject and the indirect object in (5.1) above:

*a. [Monei wa mosadi bana] o- teng

(The giver of the woman the children is here)

b. [Monei wa mosadi wa bana] o- teng

(The giver of the woman of the children is here)

(5.1.5) With the subject and the direct object in (5.1) above:

a. [Monei wa mosadi dijo] o- teng

(The giver of the woman the food is here)

b. [Monei wa mosadi wa dijo] o- teng
(The giver of the woman of the food is here)

(5.1.6) With indirect and direct object in (5.1) above:

a. [Monei wa bana dijo] o- teng
(The giver of the children the food is here)

b. [Monei wa bana wa dijo] o- teng
(The giver of the children of the food is here)

In both (5.1.1 – 5.1.6) above, the meaning is descriptive. The sentences in (5.1.5a) are incorrect because the possessive marker is not there (i.e. wa) in both case. However, in (5.1.6a) above, the set up is different. The fact that both (direct and indirect) objects are matched together makes it possible for the sentence to be correct.

(5.2) Verbs of communication

botsa → bobotsi (state of an inquirer)
Example: [Titjhere] e- botsitse [moithuti][dipotso]
(The teacher asked the student questions)

(5.2.1) With the subject in (5.2) above:

[Bobotsi ba titjhere] bo- thata
(The state of an inquirer of the teacher is different)

(5.2.2) With indirect object in (5.2)

[Bobotsi ba moithuti] bo- thata
(The state of an inquirer of the student is different)

(5.2.3) With direct object in (5.2) above:

[Bobotsi ba dipotso] bo- thata
(The state of an inquirer of the questions is difficult)

(5.2.4) With subject and indirect object in (5.2) above:

*a. [Bobotsi ba titjhere moithuti] bo- thata
(The state of an inquirer of the teacher the student is difficult)

b. [Bobotsi ba titjhere ba moithuti] bo- thata
(The state of an inquirer of the teacher of the student is difficult)

(5.2.5) With subject and direct object in (5.2) above:

*a. [Bobotsi ba titjhere dipotso] bo-thata
(The state of an inquirer of the teacher the questions is difficult)

b. [Bobotsi ba titjhere ba dipotso] bo- thata
(The state of an inquirer of the teacher of the questions is difficult)

(5.2.6) With indirect and direct object in (5.2) above

a. [Bobotsi ba moithuti dipotso] bo- thata
(The state of an inquirer of the student the questions is difficult)

b. [Bobotsi ba moithuti ba dipotso] bo- thata
(The state of an inquirer of the student of the questions is difficult)

In both cases (5.2.1 – 5.2.6) above, the meaning is descriptive. The sentence in (5.2.4a) and (5.2.5) above are incorrect due to the lack of possessive marker[ba] that is responsible for the control of the external arguments. The state of an inquirer teacher cannot be owned by the student.

CHAPTER 5: CONCLUSIONS

5.1 Aim

This chapter deals with the conclusions of the study. These conclusions will be mainly based on Chapter 4, which forms the core of the study.

Firstly the Generative Lexicon and the nominalizations in the noun classes will be reviewed. This will include what transpired in the derivation of the noun classes (i.e. classes 1,3,7,9 and 14)

Secondly, the levels of representation in the Generative Lexicon in the nominalizations in comparison with the verbs are dealt with (i.e. argument structure, event structure and the qualia).

Thirdly, the semantic features of the derivations from intransitive, transitive and ditransitive verbs will be reviewed.

The issue of Individual- level and Stage-level nominals will be highlighted in which the diagnostic tests in Busa (1996) are applied to determine whether Class 1 or Class 7 is an ILN or SLN.

Lastly, the issue of control of arguments and the possessive with the derivations will be reviewed.

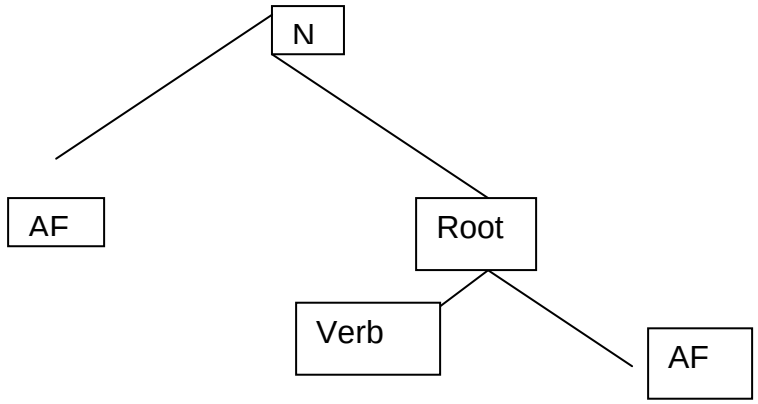
5.2 THE GENERATIVE LEXICON AND THE NOMINALIZATION IN THE NOUN CLASSES.

5.2.1 The derivations in the noun Classes.

It is possible to form nominalizations from verbs in almost all the noun classes in Sesotho. However, some noun classes do not show a regular pattern of derivation and such noun classes have not been included in the study eg. Class 5 and 6 (**le** – and **ma** – as prefixes).

The morphological structure of the nominalizations in Sesotho has the following form:

(1)



The first affix is a prefix and it represents the various noun class prefixes of Sesotho. The root is composed of a verb with a nominal suffix [-i] or [-o]. There are various other verbal suffixes such as [-a] which may appear within the root, but no attention has been given to such verbal suffixes.

Nominalisation in Class 1/2 :

All such nominalizations from verbs appear with the prefixes [mo- / ba-] of class 1 / 2. The root then has a suffix [-i]:

(2) [mo- [ses- [-i]] (swimmer)

The noun **mosesi** is derived from the verb [-ses-] (swim). It may appear in class 2:

(3) [ba- [ses- [i]] (swimmers).

Nominalisation in Class 3 / 4:

Nominalizations in class 3/4 from verbs appear with the prefixes [mo- / me-]. The root has a suffix [-o]:

(4) [mo-[ses-[-o]] (way of swimming/swimming)

The noun **moseso** is also derived from the verb [-ses-] (swim). It may appear in class 4:

(5) [me- [ses- [-o]] (ways of swimming).

Nominalisation in Class 7 / 8:

Nominalizations in class 7/8 from verbs appear with the prefixes [se- / di-]. The root as in class 1/2 also as a suffix [-i]:

(6) [se- [se- [-i]] (professional swimmer)

The noun **sesesi** is derived from the verb [-ses-] (swim). It may appear in class 8:

(7) [di- [ses- [-i]] (professional swimmers).

It is also possible to form nominalizations in class 7 / 8 from verbs with the suffix [-o] on the root eg. **[se- [kwahel- [-o]** (lid,cover) from the verb **-kwahel**-(cover). However, such derivations are not regularly attested in Sesotho and thus they have not received any further attention.

Nominalization in Class 9/10:

In class 9/10, such nominalizations from verbs appear with the prefixes [N-/diN-]: [N-[pu-[-o]] (language) (<bua).

Nominalizations in class 9/10 may also appear with the suffix [-i]. In such case the suffix [-o] indicates the act of V, while the suffix [-i] refers to the act of a V- er:

(8) [N- [pobol- [-o]] (act of groaning)
[N- [pobod- [-i]] (act of groaner)
(from the verb –**bobol**- groan)

Derivations with the suffix [-i] in class 9 / 10 are not regularly attested and they have not been dealt with extensively.

Nominalization in Class 14:

In class 14, such nominalizations from the verb appear with the prefixes [bo-]. The root has the suffixes [-o] or [-i]. Both these suffixes are regularly attested in Sesotho:

(9) [bo- [-ah-[-i]] (quality of the builder)
[bo- [-ah-[-o]] (quality of the building).

5.2.2 The levels of representation in the Generative Lexicon in the nominalization in comparison with the verb.

The following three issues with regard to the Generative Lexicon will be dealth with i.e. argument structure, event structure and qualia.

Firstly, a summary will be given of the various verbs which have been nominalized in this study:

5.2.2.1 Table of nominalizations

1. Intransitive Verbs	Noun class	Derivation	Semantic Features	Argument Structure	Event Structure	Formal Quale	Agentive Quale
1.1 State	1/2	mo – V- i	Human	Human	State	Human in State	N.A
	7/8	se – V – i	Human Intensive	Human	State	Human: In intensive state	N.A
	3/4	mo – V – o	Inchoative state	Event of V	Inchoative state	X in inchoativesState	N/A
	3/4	mo-V-o	Manner of inchoative state	Event of V	Inchoative state	Matter of x in inchoative state	N.A.
	9/10	N – V – o	Result of V	Event of V	State	X is in state	N.A
	14 (-o)	bo – V- o	Quality	Event of V	State	Quality of X	N.A
	14 (-i)	bo – V - i	Quality	Event of V	State	Quality of Animate	N.A
1.2 Motion	1/2	mo – V – i	Human	Human	Process	Human in Process	Human act in Process
	7/8	se – V – i	Human Intensive	Human	Process	Human in Process	Human in intensive act in Process
	3/4	mo – V- o	Event	Event	Process	Event	X act in Process
	3/4	mo – V – o	Manner of event	Event	Process	Event	X in manner of act in Process
	9/10	N – V – o	Result	Event	Process	Result of event	X act in Process
	14 (-o)	bo – V – o	Quality	Event	Process	Result of quality of event	X act in Process
	14(-i)	bo – V - i	Quality	Event	Process	Result of quality of Animate	X act in Process
1.4 Relating to the body 1.4.1 Bodily process	1/2	mo-V-i	Human	Human	Process	Human in process	Human act in process
	7/8	se-V-i	Human intensive	Human	Process	Human in process	Human in intensive act in process
	3/4	mo-V-o	Event	Event	Process	Event	X act in process
	3/4	mo-V-o	Manner of event	Event	Process	Event	X in manner of act in process
	9/10	N-V-o	Result	Event	Process	Result of event	X act in process
	14(-o)	bo-V-o	Quality	Event	Process	Result of anality quality of event	X act in process
	14(-i)	bo-V-i	Quality	Event	Process	Result of quality of animate	X act in process

1.4.2 Damage to the body	1/2	mo – V – i	Human	Human	State	Human in state	N.A
	7/8	se – V- i	Human Intensive	Human	State	Human in intensive state	N.A
	3/4	bo – V – o	Inchoative State	Event of V	Inchoative State	X in Inchoative state	N.A
	3/4	mo – V – o	Manner of Inchoative State	Event of V	Inchoative State	Manner of X in inchoative state	N.A
	9/10	N – V –o	Result of V	Event of V	State	X is in state	N.A
	14 (-o)	mo – V – o	Quality	Event of V	State	Quality of X	N.A
	14 (-i)	bo – V - i	Quality	Event of V	State	Quality of Animate	N.A
1.5 **Experiencer**	1/2	mo – V – i	Human	Human	State	Human in state	N.A
	7/8	se – V- i	Human Intensive	Human	State	Human in intensive state	N.A
	3/4	N.A					
	3/4	N.A					
	9/10	N – V –o	Result of V	Event of V	State	X is in state	N.A
	14 (-o)	bo – V – o	Quality	Event of V	State	Quality of X	N.A
	14 (-i)	bo – V - i	Quality	Event of V	State	Quality of Animate	N.A
2. Intransitive verbs with a locative argument. 2.1 **Locative refers to the location**	1/2	mo – V – i	Human	Human	Process & state	Human at location	Human act in Process
	7/8	se – V – i	Human Intensive	Human	Process & state	Human at location	Human in intensive act in Process
	3/4	mo – V- o	Event	Event	Process & state	Event of X at Y	X act in Process
	3/4	mo – V – o	Manner of event	Event	Process & state	Event of X at Y	X in manner of act in Process
	9/10	N – V – o	Result	Event	Process & state	Result of event	X act in Process
	14 (-o)	bo – V – o	Quality	Event	Process & state	Result of quality of event	X act in Process
	14(-i)	bo – V - i	Quality	Event	Process & state	Result of quality of Animate	X act in Process

2.2 Location refers to source	1/2	mo – V – i	Human	Human	Process & state	Human from location	Human act in Process
	7/8	se – V – i	Human Intensive	Human	Process & state	Human from location	Human in intensive act in Process
	3/4	mo – V- o	Event	Event	Process & state	Event of X from Y	X act in Process
	3/4	mo – V – o	Manner of event	Event	Process & state	Event of X from Y	X in manner of act in Process
	9/10	N – V – o	Result	Event	Process & state	Result of event	X act in Process
	14 (-o)	bo – V – o	Quality	Event	Process & state	Result of quality of event	X act in Process
	14(-i)	bo – V - i	Quality	Event	Process & state	Result of quality of Animate	X act in Process
2.3 Locative refers to direction	1/2	mo – V – i	Human	Human	Process & state	Human to location	Human act in Process
	7/8	se – V – i	Human Intensive	Human	Process & state	Human to location	Human in intensive act in Process
	3/4	mo – V- o	Event	Event	Process & state	Event of X to Y	X act in Process
	3/4	mo – V – o	Manner of event	Event	Process & state	Event of X to Y	X in manner of act in Process
	9/10	N.A					
	14 (-o)	bo – V – o	Quality	Event	Process & state	Result of quality of event	X act in Process
	14(-i)	bo – V - i	Quality	Event	Process & state	Result of quality of Animate	X act in Process
3. Transitive verbs **3.1 Change of state**	1/2	mo – V – i	Human	Human	Process & state	Y in result of V	Human act in Process
	7/8	se – V – i	Human Intensive	Human	Process & state	Y in result of V	Human in intensive act in Process
	3/4	mo – V- o	Event	Event	Process & state	Event of X on Y	X act in Process
	3/4	mo – V – o	Manner of event	Event	Process & state	Event of X on Y	X in manner of act in Process
	9/10	N – V – o	Result	Event	Process & state	Result of event	X act in Process
	14 (-o)	bo – V – o	Quality	Event	Process & state	Result of quality of event	X act in Process
	14(-i)	bo – V - i	Quality	Event	Process & state	Result of quality of Animate	X act in Process

3.2 Change of Possession	1/2	mo – V – i	Human	Human	Process & state	Y in result of V	Human act in Process
	7/8	se – V – i	Human Intensive	Human	Process & state	Y in result of V	Human in intensive act in Process
	3/4	mo – V- o	Event	Event	Process & state	Event of X on Y	X act in Process
	3/4	mo – V – o	Manner of event	Event	Process & state	Event of X on Y	X in manner of act in Process
	9/10	N – V – o	Result	Event	Process & state	Result of event	X act in Process
	14 (-o)	bo – V – o	Quality	Event	Process & state	Result of quality of event	X act in Process
	14(-i)	bo – V - i	Quality	Event	Process & state	Result of quality of Animate	X act in Process
3.3 Creation	1/2	mo – V – i	Human	Human	Process & state	Y exist in State	Human act in Process
	7/8	se – V – i	Human Intensive	Human	Process & state	Y exist in State	Human in intensive act in Process
	3/4	mo – V- o	Event	Event	Process & state	Event of X on Y	X act in Process
	3/4	mo – V – o	Manner of event	Event	Process & state	Event of X on Y	X in manner of act in Process
	9/10	N – V – o	Result	Event	Process & state	Result of event	X act in Process
	14 (-o)	bo – V – o	Quality	Event	Process & state	Result of quality of event	X act in Process
	14(-i)	bo – V - i	Quality	Event	Process & state	Result of quality of Animate	X act in Process
3.4 Perception	1/2	mo – V – i	Human	Human	Process	Human in process	Human act in Process
	7/8	se – V – i	Human Intensive	Human	Process	Human in process	Human in intensive act in Process
	3/4	mo – V- o	Event	Event	Process	Event of X on Y	X act in Process
	3/4	mo – V – o	Manner of event	Event	Process	Event of X on Y	X in manner of act in Process
	9/10	N – V – o	Result	Event	Process	Result of event	X act in Process
	14 (-o)	bo – V – o	Quality	Event	Process	Result of quality of event	X act in Process
	14(-i)	bo – V - i	Quality	Event	Process	Result of quality of Animate	X act in Process
3.5 Experiencer	1/2	mo – V– i	Human	Human	State	Human in state	N.A
	7/8	se – V – i	Human intensive	Human	State	Human in Intensive State	N.A
	3/4	N.A					
	3/4	N.A					
	9/10	N – V – o	Result of V	Event of V	State	X is in State	N.A
	14 (-o)	bo – V – o	Quality	Event of V	State	Quality of X	N.A
	14(-i)	bo – V – i	Quality	Event of V	State	Quality of Animate	N.A

3.6 Communica-tion	1/2	mo – V – i	Human	Human	Process	Human in process	Human act in Process
	7/8	se – V – i	Human Intensive	Human	Process	Human in process	Human in intensive act in Process
	3/4	mo – V- o	Event	Event	Process	Event of X on Y	X act in Process
	3/4	mo – V – o	Manner of event	Event	Process	Event of X on Y	X in manner of act in Process
	9/10	N – V – o	Result	Event	Process	Result of event	X act in Process
	14 (-i)	bo – V – o	Quality	Event	Process	Result of quality of Animate	X act in Process
	14(-o)	bo – V - o	Quality	Event	Process	Result of quality of event	X act in Process
4. Transitive verbs with Locative Argument **4.1 Putting**	1 / 2	mo – V– i	Human	Human	Process & state	Y on Z	Human act in Process
	7 / 8	se – V – i	Human Intensive	Human	Process & state	Y on Z	Human in intensive act in Process
	3 / 4	mo – V- o	Event	Event	Process & state	Event of Y on Z	X act in Process
	3 / 4	mo – V – o	Manner of event	Event	Process & state	Event of Y on Z	X in manner of act in Process
	9 / 10	N – V – o	Result	Event	Process & state	Result of event	X act in Process
	14 (-o)	bo – V – o	Quality	Event	Process & state	Result of quality of event	X act in Process
	14(-i)	bo – V - i	Quality	Event	Process & state	Result of quality of Animate	X act in Process
4.2 Removing	1 / 2	mo – V – i	Human	Human	Process & state	Y from Z	Human act in Process
	7 / 8	se – V – i	Human Intensive	Human	Process & state	Y from Z	Human in intensive act in Process
	3 / 4	mo – V- o	Event	Event	Process & state	Event of Y from Z	X act in Process
	3 / 4	mo – V – o	Manner of event	Event	Process & state	Event of Y from Z	X in manner of act in Process
	9 / 10	N – V – o	Result	Event	Process & state	Result of event	X act in Process
	14 (-o)	bo – V – o	Quality	Event	Process & state	Result of quality of event	X act in Process
	14(-i)	bo – V - i	Quality	Event	Process & state	Result of quality of Animate	X act in Process
5. Ditransitive verbs **5.1 Change of possession**	1/2	mo – V – i	Human	Human	Process & state	Result of Z in state	Human act in Process

	7/8	se – V – i	Human Intensive	Human	Process & state	Result of Z in state	Human in intensive act in Process
	3/4	mo – V- o	Event	Event	Process & state	Event of X on Z	X act in Process
	3/4	mo – V – o	Manner of event	Event	Process & state	Event of X on Z	X in manner of act in Process
	9/10	N – V – o	Result	Event	Process & state	Result of event	X act in Process
	14(-i)	bo – V – o	Quality	Event	Process & state	Result of quality of Animate	X act in Process
5.2 Communi-cation	1/2	mo – V – i	Human	Human	Process	Human in Process	Human act in Process
	7/8	se – V – i	Human Intensive	Human	Process	Human in Process	Human in intensive act in Process
	3/4	mo – V- o	Event	Event	Process	Event	X act in Process
	3/4	mo – V – o	Manner of event	Event	Process	Event	X in manner of act in Process
	9/10	N – V – o	Result	Event	Process	Result of event	X act in Process
	14(-i)	bo – V – i	Quality	Event	Process	Result of quality of Animate	X act in Process

5.2.2.2 Argument structure

The argument structure of all the nominalizations in Class 1 / 2 and Class 7 / 8 shows an argument of **human**, eg. [mo- [-math-i]], [se-[-math-i]] (runner). No derivations in Class 1 / 2 and 7 / 8 are possible with **weather verbs**.

All other nominalizations in the noun classes 3 / 4, 9 / 10 and 14 have an event as an argument eg. [mo- [-tsama-o]] (way of walking). Experiencer verbs do not allow nominalizations in Class 3/4.

5.2.2.3 Event structure

Four default event structures have been recognized with nominalizations from various verbs which show the same event structure. (see par. 5.2.2.1 above).

a) Default event structure of state:

With nominalizations derived from:

(i) verbs of state : [mo-fum-i] (rich person)

(ii) verbs of damage to the body : [kul-o] (illness)

b) Default event structure of inchoative state with nominalizations derived from:

(i) verbs of state with nominalizations in Class 3 / 4 : [mo-fum-o] (becoming rich)

(ii) verbs of damage to the body with nominalizations in Class 3 / 4 : [mo-kul-o] (becoming ill)

c) Default event structure of process with nominalizations derived from:

(i) motion verbs : [mo-tsama-i] (walker)

(ii) weather verbs : [mo-fok-o] (blowing)

(iii) verbs of bodily process : [mo-hlats-i] (person who vomits)

(iv) perception verbs : [pon-o] (vision)

(v) communication verbs : [tsheb-o] (slander)

d) Default event structure of process and state with nominalizations derived from:

(i) verbs of motion with a locative argument both transitive and intransitive: [mo-fihl-o] (arriving)

(ii) verbs of change of state: [mo-ripitl-i] (destroyer)

(iii) verbs of change of possession: [mo-has-o] (spreading)

(iv) verbs of creation: [se-bop-i] (potter, moulder)

5.2.2.4 Qualia structure

Two qualia have received extensive coverage i.e. the **forma**l and the **agentive** qualia:

FORMAL QUALE

(1) The formal quale is ARG 1 of the argument structure:

(1.1) **Humans** in Class 1 / 2, 7 / 8 with verbs of:

(i) motion : [mo-tsama-i] (walker)

(ii) bodily process : [se-bohl-i] (person who belches)

(iii) perception : [mo-utlw-i] (hearer, listener)

(iv) communication : [se-bu-i] (speaker)

(1.2) **Humans** in Class 1 / 2, 7 / 8 with verbs of motion with a locative argument:

(i) Humans at a location : [mo-fihl-i] (one who arrives)

(ii) Humans from a location : [mo-kgutl-i] (one who returns)

(iii) Humans to a location : [mo-y-i] (one who goes)

(1.3) **Event** in Class 3 / 4 with verbs of:

(i) motion : [mo-tsama-o] (walking)

(ii) weather : [mo-fok-o] (blowing)

(iii) bodily process : [mo-kgohlel-o] (coughing)

(1.4) **Event** in Class 3 / 4 with verbs of motion with a locative argument:

(i) Event at a location : [mo-ken-o] (entering)

(ii) Event from a location : [mo-kgutl-o] (returning)

(iii) Event to a location : [mo-y-o] (arriving)

(1.5) **Event** of x on y in Class 3 / 4 with verbs of :

(i) change of state : [mo-rob-o] (breaking)

(ii) change of possession : [mo-ab-o] (dividing)

(iii) creation : [mo-ah-o] (constructing)

(iv) perception : [mo-sheb-o] (looking)

(v) putting : [m-me-o] (putting)

(1.6) Event of y from x in Class 3 / 4 with verbs of removing : [mo-amoh-o] (taking away)

In all the above instances only two arguments are recognized as the formal quale in the nominalization i.e. **human** and **event.**

(2). The formal quale is a result.

(2.1) Result : y in result of V in Class 1/2 and 7/8 with verbs of :

i. change of state: [mo-rob-i] / [se-rob-i] (person who breaks)

ii. change of possession : [mo-has-i] / [se-has-i] (sower/spreader)

(2.2) Result : **y** in state in Class 1 / 2, 7 / 8 with verbs of creation : [mo-ah-i] / [se-ah-i] (builder)

(2.3) Result : **y** on z in Class 1/2 , 7/8 with verbs of putting : [m-me-i] / [se-be-i] (one who puts things)

(2.4) Result : y from z in Class 1 / 2, 7 / 8 with verbs of removing : [mo-amoh-i] / [se-amoh-i] (one who takes away)

(2.5) Result : result of z in state in Class 1 / 2 , 7 / 8 with ditransitive verbs of change of possession : [mo-ne-i] / [se-ne-i] (giver)

(2.6) Result : human in state of V in Class 1 /2,7/8 with verbs of:

i. state : [mo-ot-i] / [se-ot-i] (lean person)

ii. bodily damage : [mo-fokod-i] / [se-fokod-i] (weak person)

iii. experience : [mo-thab-i] / [se-thab-i] (rejoicing person)

(2.7) Result : x in inchoative state of V in class 3 / 4 with verbs of:

i. state : [mo-fum-o] (becoming rich)

ii. bodily damage : [mo-kul-o] (becoming ill)

(2.8) Result : manner of x in inchoative state in Class 3 / 4 with verbs of:

i. state : [mo-fum-o] (way of becoming rich)

ii. bodily damage : [mo-fokol-o] (way of becoming weak)

(2.9) Result : x in state of V in Class 9 / 10 with verbs of :

i. state : [tlhahafal-o] (being wild)

ii. bodily damage : [phokol-o] (weakness)

iii. experience : [pef-o] (anger)

(2.10) Result: quality of x in Class 14 with suffix [-o] with verbs of:

i. state : [bohlahafal-o] (wildness)

ii. bodily damage : [bokul-o] (sickness)

iii. experience : [bobef-o] (quality of anger)

(2.11) Result: quality of animate in Class 14 with suffix [-i] with verbs of:

i. state : [bo-ot-i] (quality of a lean person)

ii. bodily damage : [bo-fokod-i] (weak nature)

iii. experience : [bo-thab-i] (quality of a person's gladness)

(2.12) The derivations in above are applicable to all other verbs which do not appear in (2.11) above.

AGENTIVE QUALE

1. The agentive quale does not appear with state verbs, verbs of damage to the body and experience verbs.

2. V act in process : [mo-tsama-i] (walker)

3. V in intensive act in process : [se-ses-i] (swimmer)

4. V in manner of act in process : [mo-phall-o] (way of flowing)

5.3 SEMANTIC FEATURES

The semantic features of these derivations consist of **human, human intensive, inchoative state, manner of inchoative state; result; quality; event and the manner of event**. In this case only the productive semantic features are presented.

The human feature in Class 1 /2 and the **human intensive** feature in Class 7 / 8 are present in: [mo-rob-i] / [se-rob-i] (breaker). But these features are not applicable to **verbs of weather.**

Inchoative state feature in Class 3 / 4 as : [mo-rob-o] (breaking) and the **manner of inchoative** state as : [mo-rob-o] (way of breaking). But these features appear only in **state** and **damage to body verbs**.

The **result** feature in Class 9 / 10 appears with all the verbs with a deverbal from Class 9 as : [thob-o] (breaking)

The **quality** feature in Class 14 with both suffixes [-o] and [-i] with all the verbs with a deverbal from Class 14 as : [bo-rob-o] (quality of breaking) and [bo-rob-i] (quality of breaker).

The **event** in Class 3 / 4 and manner of event in Class 3 / 4 as: [mo-ses-o] (swimming) and [mo-ses-o] (way of swimming). These features do not appear in experiencer verbs.

Other **semantic** features (not very productive)

Place: [bots-o] (place of coming, exit); [bokgutl-o] (terminus); [boy-o] (destination) both in Class 14.

Instrument : [petl-o] (instrument of carving) in Class 9
[patl-o] (endze for scraping skins) in Class 9, and

Natural phenomenon : lehadima (lightening) in Class 5.

5.4 INDIVIDUAL- LEVEL AND STAGE- LEVEL NOMINALS.

In this section, diagnostic tests from Busa (1996) are applied to establish whether Class 1 or Class 7 nominal is an ILN or SLN.

5.4.1 Intransitive verbs

5.4.1.1 State verbs

5.4.1.1.1 Animate subjects

Hlahafala > mohlahafadi / sehlahafadi (wild person)

(a) Engagement in an activity at time of reference

(i) Ha re kopana le Mohlahafadi / sehlahafadi nokeng,
(when we met the wild person in the river)

1. O ne a tola (She was swimming)
2. O ne a tjheile ditlhapi (She was fishing)

(ii) Ha ke bona sehlahafadi / mohlahafadi nokeng,
(when I saw wild person in the river)

1. Se ne se lwana (She was fighting)
2. Se ne se tjheile ditlhapi (she was fishing)

Both (i) and (ii) above are SLN as they both need a reference of being wild.

(b) The use of frequency adjectives (kgafetsa)

(i) Thabang ke mohlahafadi kgafetsa. (frequent wild person)

(ii) Thabang ke sehlahafadi kgafetsa (frequent much wild person)

In both (i) and (ii) above the examples show that both **mohlahafadi** and **sehlahafadi** are SLN's that show the element of persistent and situated property.

(c) Different predicative expressions

(i) Thabang ke mohlahafadi / sehlahafadi (Thabang is a wild person)

(ii) Ha a le bolong, Thabang ke mohlahafadi/sehlahafadi.
(When in the soccer match, Thabang is a wild person)

Both (i) and (ii) have the interpretations of SLN's (i.e. they behave as SLN's)

(d) The use of 'usually' (tlwaela)

(i) Thabang o tlwaetse ho ba mohlahafadi.
(Thabang is usually a wild person)

(ii) Thabang o tlwaetse ho ba sehlahafadi.
(Thabang is usually a much wild person)

The behaviour of mohlahafadi and sehlahafadi with 'usually' is the same and the interpretation is that of SLN.

(e) The use of 'always' (hlola)

(i) Thabang o hlola a ba mohlahafadi.
(Thabang is always a wild person)

(ii) Thabang o hlola a ba sehlahafadi.
(Thabang is always a much wild person)

The behaviour of mohlahafadi and sehlahafadi in (e) above is that of SLN.

(f) The use of 'often' (atisa)

(i) Thabang o atisa ho ba mohlahafadi.
(Thabang is often a wild person)

(ii) Thabang o atisa ho ba sehlahafadi.
(Thabang is often a much wild person)

Both (i) and (ii) behave as SLN's.

(g) Quantificational information (the quantified event):

(i) Thabang ke mohlahafadi ka tlwaelo.
(Thabang is a wild person usually)

(ii) Thabang ke sehlahafadi ka tlwaelo.
(Thabang is a much wild person usually)

(h) Temporal or locative modifier with the emphasis

(i) Thabang e ne e le mohlahafadi maobane / kerekeng.
(Thabang was a wild person yesterday / in the church)

(ii) Thabang e ne e le sehlahafadi maobane / kerekeng.
(Thabang was a much wild person yesterday / in the church)

Both in (i) and (ii) above, behave in the same way. The only difference is the intensive element with **sehlahafadi.**

5.4.1.1.2 Inanimate subjects are not applicable with these tests.

5.4.1.1.3 Animate or inanimate subject

With **moloki** and **seloki** the tests show that they are ILN's.

From **test 1** (activity at time of reference), both **moloki and seloki** fail the test.

From **test 2** (use of kgafetsa), both **seloki** and **moloki** are incorrect with the adjective. They are therefore ILN's.

From **test 3** (predicative expression), both **moloki** and **seloki** fail the test, showing the behaviour of an ILN.

In **test 4** (usually), the sentences become incorrect eg.

*Thabang o tlwaetse ho ba moloki / seloki. (Thabang is usually a righteous person). This is a sign of an ILN.

Test 5 (often) also proves that **moloki** and **seloki** are ILN.

Test 6 (always) also show that **moloki** and **seloki** make the sentences to be incorrect and thus proving the behaviour of an ILN.

In **test 7** (quantificational information) shows that **moloki** and **seloki** are ILN's.

In **test 8** (temporal or locative modifier), also confirm the grammatrical incorrectness of the sentence with temporal or locative modifier. The behaviour is that of ILN.

5.4.1.2 Motion verbs: motsamai / setsamai (walker / traveler)

From all the **8 tests**, both motsamai and setsamai are typical SLN's.

In **test 1** (activity at time of reference), shows that **motsamai** and **setsamai** depend on the reference of the activity of walking or traveling.

From **test 2** (frequent), both **motsamai** and s**etsamai** are comfortable with the adjective '**kgafetsa**'. This is the sign of SLN.

Then **test 3** (predicative expression) also proves vital in establishing that **motsamai** and **setsamai** are SLN's. Then from test 4 – 8 also shows that these are SLN's.

5.4.1.3 Weather verbs are not applicable with these tests.

5.4.1.4 Verbs relating to the body

5.4.1.4.1 Bodily process: Mokgohledi / sekgohledi (one who coughs)

The 8 tests prove that **mokgohledi** and **sekgohledi** are SLN's. The only difference between **mokgohledi** and **sekgohledi** is that sekgohledi is the intensive of the one who coughs.

5.4.1.4.2 Bodily damage : mofokodi/sefokodi (weak person)

In this category, the 8 tests show that **mofokodi and sefokodi** are SLN's. In the sentences these nominals can be used as substitutes provided the context in which they are supposed to be used is clear. The only difference is in the issue of intensive in **sefokod**i.

5.4.1.4.3 Experience verbs: mothabi/sethabi (rejoicing one)

All the 8 tests proved **mothabi** and **sethabi** are SLN's**.**

5.4.2 Verbs with a locative argument

5.4.2.1 The locative referring to a location: modudi/sedudi (person who sits)

Again the 8 tests that are applied here proved beyond reasonable doubt that these nominals are SLN's. The only difference is the element of intensive on the part of sedudi.

5.4.2.2 The locative referring to source: mokgutli / sekgutli (one who returns)

The 8 tests show that these nominals are SLN's. The only difference is the intensive element in **sekgutli.**

5.4.2.3 The locative referring to direction: moyi / seyi (goer)

Again the 8 tests proved relevant with these nominals **moyi** and **seyi.** They are SLN's.

5.4.3 Transitive

5.4.3.1 Verbs of change of state: morobi /serobi (breaker)

Both **morobi and serobi** appear to be SLN's according to the 8 tests that have been tested on them. They can be used alternatively except the intensive element that is found in **serobi** which makes a distinction between the two.

5.4.3.2 Verbs of change of possession: moutswi / seutswi (one who steals)

In both cases, the 8 tests shows that **moutswi and seutswi** can be used interchangeably as they both behave as SLN's.

5.4.3.3 Verbs of creation: moahi / seahi (builder)

In this category, according to the 8 tests, these nominals are SLN's. But there are some instances where the interpretation of ILNs is found in 'seahi', more especially in test 3 (different predicative expressions). But other tests bring about an argument of SLN on top.

5.4.3.4 Verbs of perception: mmoni / seboni (one who see)

As with the creation verbs above, these pair is a SLN according to the 8 tests. But there are some instances where the meaning and the behaviour resemble that of ILNs, more especially with tests no 5,6 and 7. But other testes bring about a stronger argument in favour of SLN.

5.4.3.5 Experience verbs: motshabi/setshabi (one who fear)

In both cases, the 8 tests show that **motshabi and setshabi** can be used interchangeably as they both behave as SLNs.

5.4.3.6 Communication verbs: mmui / sebui (speaker)

In this category, the 8 tests proved that **mmui and sebui** are SLNs.

5.4.4. Transitive with locative argument

5.4.4.1. Verbs of putting: mmei / sebei (one who places things)

In this category, the 8 tests shows that both mmei and sebei are SLNs.

5.4.4.2 Verbs of removing: moamohi / seamohi (one who take away)

According to the 8 tests with these nominals, the SLNs is the only behaviour that is presented. Both **moamoh**i and **seamohi** may be used alternatively.

5.4.5 Ditransitive

5.4.5.1 Verbs of change of possession: monei / senei (one who gives)

The 8 tests in this category show that the pair is a SLN.

5.4.5.2 Communication verbs: mmotsi /sebotsi (inquirer)

The 8 tests show that the pair is a SLN. They can be used interchangeably.

According to Busa (1996:86-92) a telic role has to be specified for ILNs to express the purpose of the person or object. Thus, **moloki** (righteous/person) will have two qualia roles:

$$\begin{bmatrix} \text{FORMAL} = x \text{ (human)} \\ \text{TELIC} = \text{loka } (e_1, x) \end{bmatrix}$$

According to these qualia roles, **moloki** is a human (x) who is in a state (e_1) of righteousness (**loka**), i.e. its purpose.

5.5 CONTROL OF ARGUMENTS AND THE POSSESSIVE WITH DERIVATIONS.

In intransitive verbs, the control of argument and the possessive with these derivations shows that the meaning is descriptive as there is no direct possessive. The direct possessive is noticed in **verbs relating to the body**, **intransitive with a locative argument** (specifically **the locative refers to a location**). This is so because of the suffixal use of [-o] e.g. [sedulo sa monna] se- a hlokahala. (The seat of a man is needed). With the intransitive verbs all the sentences are correct which shows that their arguments are controlled (i.e. external and internal).

With the **transitive verbs**, the direct possessive is found with **verbs of creation** and **communication** in Classes 3,5 and 9 with suffixal use of [-o]. In this category, the incorrectness of these sentences can be attributed to the lack of possessive marker. But the transitive verbs with a locative argument; the possessive marker does not count,

hence the correctness of the sentences. The other correct sentences show an interpretation of description (i.e descriptive possessive).

In the category of ditransitive verbs, there are direct possessives in Class 9 with the suffixal use of [-o] (e. Neo, Mpho, Potso); they are found with **verbs of change of possession** and **communication.** The ungrammaticality of some of the sentences resulted from the omission of a possessive marker. Then the meaning will be that of description.

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