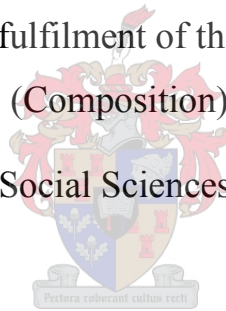# Notating Extreme Metal: A Practice-Led Approach

By

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Thesis presented in partial fulfilment of the degree of Master of Music (Composition)

In the Faculty of Arts and Social Sciences at Stellenbosch University

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March 2021

## Declaration

By submitting this thesis electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the sole author thereof (save to the extent explicitly otherwise stated), that reproduction and publication thereof by Stellenbosch University will not infringe any third party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

Marco Nachenius

March 2021

# Abstract

This dissertation will discuss the composition of *Argo*, a large-scale musical work in the extreme metal genre that is written primarily for extreme metal performers. *Argo* is written in a notational framework that is commonplace in 21$^{st}$ century Western Art Music, but very uncommon in extreme metal. This research will show how and why notation is very rarely used in extreme metal for the creation and performance of musical works. *Argo* is theoretically positioned in the stylistic and idiomatic framework of extreme metal and in the notational framework Western Art Music. This will include a dissemination of the specific elements of *Argo* that allows for its placement within the extreme metal genre. With regards to notation, this research will show that *Argo* shares stylistic similarities with twentieth-century indeterminate music, while still primarily relying on standardised notational symbolism from the nineteenth and early twentieth century. It will also be shown how the methodological framework of artistic research can be used as an answer for assimilating my own creative practice in an academic setting for the generation of new knowledge. Through the use of artistic research methodologies, this dissertation critiques the notion of notation, the musical work and the performer/composer roles within popular music broadly, and extreme metal specifically.

## Opsomming

Hierdie verhandeling sal die komposisie van *Argo*, 'n grootskaalse musikale werk binne die *extreme metal*-genre, wat vernaamlik vir opvoerders van *extreme metal* geskryf is, besprrek. *Argo* is binne 'n raamwerk van notasie wat baie algemeen in die 21ste Eeu se Westelike Kunsmusiek, maar baie ongewoon binne *extreme metal* is, geskryf. Hierdie navorsing sal aantoon hoedat en hoekom notasie baie selde in *extreme metal* vir die skepping en opvoering van musikale werke aangewend word. *Argo* sal teoreties in die stylistiese en idiomatiese raamwerk van *extreme metal* en binne die raamwerk van notasie van Westelike Kunsmusiek geplaas word. Hierdie sal 'n uiteensetting van die spesifieke elemente van *Argo* wat die plasing daarvan binne die *extreme metal* genre toelaat, insluit. Wat notasie betref, sal hierdie navorsing aantoon dat *Argo* stilistiese ooreenstemmings met onbepaalbare musiek vanuit die 20ste eeu deel, terwyl dit primêr op gestandiseerde notasiële simboliek vanuit die 18de en 19de eeu steun. Daar sal ook aangetoon word hoedat die metodiese raamwerk van kunsnavorsing as 'n antwoord vir die insluiting van my eie kreatiewe uitvoering in 'n akademiese omgewing vir die skepping van nuwe kennis aangewend kan word. Hierdie verhandeling beskou krities, by wyse van die gebruik van kunsnavorsings-metodes, die begrip van notasie, die musikale werk en die opvoerder / komponis se rolle binne vermaaklikheidsmusiek in die breë sin, en meer spesifiek *extreme metal*.

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# Acknowledgements

I would like to give special thanks to my supervisors Marc Röntsch and Reza Khota. Without your guidance there would have been no way I would be able to produce this research and composition.

I would also like to extend my undying gratitude to the moral, intellectual and artistic support I have received from the members of Africa Open, including Stephanus Muller, Willemien Froneman, Lizabé Lamberchts, Marietjie Pauw and Hilde Roos.

I would be remis if I did not include a special mention of the importance of my parents, Hans Nachenius and Ilze Dijkstra. Without your financial and moral guidance, as well as your patient, unyielding and loving care that you provided me, eight years in university would have been unfathomable. When I started studying music formally for the first time, it was at university after Matric. I entered the certificate program with no discernible work ethic and absolutely no in interest or knowledge of Western Art Music. Despite a very reasonable scepticism and my record of deplorable academic commitment, my parents lovingly supported my studies and never wavered in their confidence in my abilities, even when I had absolutely none.

## Dedication

Lovingly dedicated to Johann Lombard (5 June 1989 – 14 August 2014)

You were my best and most loyal friend, the first person to tell me to seriously consider a career in music, and the first to expose me to most of the forms of extreme metal that I would fall in love with and later use in this research. You were there for me during the worst times of crisis in my life since we met to selflessly support me without a moment of hesitation. You continue to support me to this day, and I would like to dedicate this research and my composition to you as a small way to show this.

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# Introduction

Before my formal education in music, my interests lay almost exclusively in the composition and performance of metal. Since then, metal has never ceased to be the most pervasive genre to retain my musical interests.

Metal music is a broad and over-arching term with many sub-genres, and within this overlay of aesthetics my primary musical engagement lies within the sub-genre of extreme metal. In *Extreme Metal: Music and Culture on the Edge* (2006), author Keith Kahn-Harris provides historical context that made the emergence of the modern extreme metal scene possible as it relates to the fragmentation of heavy metal into various sub-genres. He states:

> Although metal has fragmented and does not generally attract the notoriety and controversy that it once did, metal remains an important and recognizable form of popular music. Yet on the edge of metal culture, forms of metal that are much more obscure and that attract much less attention are thriving. These forms of metal represent the most diverse, the most artistically vibrant, the most dynamic and also the most problematic aspects of metal culture. Collectively they are known as extreme metal.
> (Kahn-Harris, 2006: 2).

The main elements that drew me to extreme metal were virtuosic performance and extended instrumentation. Guitarists such as Jeff Loomis, Tosin Abasi and Chris Broderick[1], and drummers such as Derek Roddy, George Kollias and Thomas Haake, were all part of groups that fall within the extreme metal genre at some stage of their careers. A lot of their mainstream popularity came from a wide spectrum of popular music instrumentalists outside of metal who sought to emulate their technique and method of practicing (Walser, 1993: 90).

My decision to pursue tertiary music qualifications at Stellenbosch University meant that the focus of my attention was shifted to Western Classical Music, as this was the primary genre of instruction at said institution. This meant I would have had to adopt the classical guitar as my instrument of specialisation, rather than the electric guitar, and learn the notational systems of Western Classical Music. By the conclusion of my undergraduate qualifications, it became my principal mode of communicating my compositional ideas. Beyond the notational traditions of Western Art Music, I was also attracted to the philosophical notion that the composer and performer within a Western Art Music paradigm, are seldom the same person. This is largely

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[1] All three of these guitarists appeared in popular publications like instructional DVD's, booklets and articles in *Guitar World*.

not the case within extreme metal – or popular music broadly – where music is written by the performers.

In the final year of my undergraduate degree I began seriously exploring the possibility of reintegrating metal into my technique of composition. This prompted me to start thinking about presenting a methodical approach to reintegrating specific techniques prevalent in 21st century styles of metal into my current stylistic framework of composition that is almost entirely modelled on practices from 20th-century Western Art Music. This compositional approach also relied on the abstract study of instrumentation by engaging primarily with written texts, thereby contributing to the distancing between composer and performer. The style of metal that I was interested in remained significantly unchanged during my undergraduate studies and the instrumentation of the ensemble is largely the same as it was when I wrote for it in my pre-undergraduate years.[2] The biggest ideological obstacle for me was not generating musical content as a potential performer, but rather as a composer through a written set of instructions to performers.

The ubiquitous use of notation in Western Art Music is predicated on the separation of labour between composer and performer (Cole 1974: 17-18). From the 18th century, the distancing between composer and performers started to increase even further (Goehr, 1992: 224). The establishment of the study of instrumentation and orchestration in the nineteenth century was arguably the result of an increasing distancing between composers and performers, when the presence of the composers at the performances of their work became an exception rather than an expectation. Goehr (1992) states:

> When composers began to produce music at a distance, they began also to consider musical instruments in abstraction, as separable from place and functional context. All these developments made it possible to assess the worth and contribution of an instrument to a given work of music on its own ideal and independent terms. Thus, in the early nineteenth century, composers like Czerny and Berlioz produced meticulously worked out manuals on instrumentation, written from a standpoint at which they were able to consider the complexities of instrumentation in abstraction from the demands and practical difficulties of actual performance. The same sort of distance was revealed also in the new treatises on orchestration. (Goehr, 1992: 226-227)

As with most forms of popular music, extreme metal does not have the similar common separation of labour between composer and performer (Warner, 2009: 140). The composition of songs within heavy metal – and much of popular music from the latter half of the 20th century

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[2] See theoretical framework for an explanation of how this form of instrumentation falls under extreme metal

– has been the work of the musicians who would perform the music live. That is to say: in heavy metal the composer(s) and performer(s) are most often the same people.

This thesis thus aims to explore the notion of integrating the Western Classical notational systems and philosophical understandings of the separate role of performers and composer, within an extreme metal music aesthetic. At the core of this research is the interrogation of the role of notation, and its uses in broader musical contexts. While I acknowledge that there exist multiple mechanisms to express my compositional ideas[3], this research project critiques the freedoms and limitations of using a largely 19th Century notational approach within the conception and communication of an extreme metal composition.

The function of musical notation differs between Western Art Music and metal. From the 19th century until the first half of the 20th century, composers of Western Art Music primarily used standardised models of staff notation to translate their compositions to performers in a way that was expected to be a complete set of instructions that could fully exclude the presence of the composer in the performance of their work (Goehr, 1992: 224-225). Such an approach worked on the assumption of both composer and performer being able to read staff notation but did not require the listener to have this knowledge. This contributed to the establishment of a written tradition within Western Art Music. The primary point of exposure for the composition and performance of a musical work became a written text that functioned under a paradigm of standardised symbolism.

Metal, like most forms of popular music, does not show an equivalent reliance on notation in its musical practice. The increasingly widespread use of audio recording in the 20th century led to the opportunity for composers to preserve their music in a medium that did not fall under the written tradition of Western Art Music (Warner, 2009: 139). This ubiquity in use of audio recording, in turn, did not only lead to the score taking a position of secondary importance in popular music, but contributed to the larger establishment of popular music as an aural tradition. This meant that the primary point of exposure for a musical work was its performance or a recording thereof, rather than a written text. Warner states:

> Until the invention of audio recording, music, like speech, was preserved in memory through a system of symbols: the musical score. The influential role that this notation system has played in Western art music is profound. Yet by representing the fleeting flow of a particular set of sounds organized in time as fixed signs on pages of paper, standard notation not only preserves musical invention, but also transposes it from the auditory to the visual sphere. As a set of

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[3] Which will in turn be discussed in the Theoretical Framework

reasonably precise instructions, the score enables musicians to re-create a piece of classical music as sound in time; it also allows analysts to see and ponder upon the individual elements that collectively make up that piece of classical music. However, while most classical music analysts focus on the score as the primary text, scores of popular music tend to be both rare and largely redundant, since the recording represents a far more complete and accurate 'record' of musical intention. Indeed, standard notation rarely figures as an important part of the popular music record production process, and when popular music is rendered as a score, usually in piano reduction, as is the case with sheet music, the results do not satisfactorily capture the musical and sonic subtleties of the recording.
(2009: 139).

A logical consequence of notation rarely being used as a medium for creating musical works in metal would be that performers of metal rarely have to rely on reading notation to perform musical work. They also do not require an understanding of communicating written musical instructions in order to compose in metal.

Through the philosophical underpinning of artistic research that the creative act is itself knowledge-generative, this thesis uses my composition *Argo*, for two electric guitars, electric bass guitar and drumkit, as the site for experimenting with notational concepts and challenging the role of composer/performer within extreme metal. This research will aim to approach the composition of extreme metal within the framework of Western Art Music by focussing on the *how* of a musical work. My background as a metal guitarist, who transitioned to Western Classical composition, informs and shapes this research. Rather than seeking new knowledge regarding the interaction between the *what* of Western Art Music and the *what* of metal, this research will attempt to generate new knowledge as it relates to the interaction between the *how* of Western Art Music and the *what* of metal.

The core function of this research is to present the artistic practice of composing a musical work that is thoroughly rooted in extreme metal, using methods of 'standardised' notation that are taken from Western Art Music. Its aim is to add substance to the body of knowledge about the practice of creating a musical work within this specific style and medium. The purpose of this written component is to present the composed work in a framework that would generate new knowledge in an academic setting. The goal of this research is therefore not to establish a theoretical model that will undergo subsequent experimentation, but to document and critically engage with the knowledge held within the act of creating the work.

This research will culminate in the submission of the written component as well as the score (Appendix A) and a recording of *Argo* (Appendix B). Appendix A is the composition portfolio of the master's degree. *Argo* also functions as the creative artefact on which the written

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component is based. *Argo* is a single-movement work in the extreme metal sub-genre for two 7-string electric guitars, a 5-string bass guitar and a metal drumkit, using primarily staff notation models of standardised notation so as to integrate certain 20th Century compositional styles to allow for an aleatoric approach to certain sections of the work.[4] The two main elements in the composition that are used to solidify the musical work thoroughly in the stylistic framework of extreme metal will be the choice of the ensemble's instrumentation and the idiomatic use of the instruments.

The written component centres on the artistic act of creation that made the composition of *Argo* possible, and how its contextualisation within artistic practice can be understood as research. In this sense, the written component should be regarded as the culmination of artistic practice. Linda Candy writes that artistic research methodologies such as these constitute: "original investigation undertaken in order to gain new knowledge partly by means of practice and the outcomes of that practice" (Candy, 2006). The written component works under the presumption of a creative artefact, not the other way around. It is entirely a construct of the fulfilment of my own aesthetic preferences and the achievement of specific artistic goals for creating a single-movement work of this length. Therefore, without the creative artefact there can be no written component in this proposed framework of research methodology.[5]

Appendix B is a digitally sampled recording of *Argo*, with the purpose of this recording being to aid the reader in engaging with the creative artefact. The burden of realising the majority of the score in some way to get an impression of how all of the instruments can be simultaneously heard is not necessary on the part of the reader. As such, Appendix B should be considered a supplementary text that aids the reader in fully engaging with the research, especially when studying the score of *Argo*.

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[4] See *Indeterminate notation* subsection in Theoretical framework for a definition of indeterminate notation and aleatoricism, and Chapter 6 for a presentation of how indeterminate notation is used in *Argo*
[5] See *Artistic Research* subsection in the Theoretical Framework for a full explanation of how artistic research is implemented as a research method for this written component

# Chapter 1: Theoretical and Methodological Frameworks

This research requires certain specific theoretical considerations. It firstly requires a discussion of the function of notation, with regards to the creation, performance, and distribution of musical works within Western Art Music, and how this differs in extreme metal. Secondly, this chapter will consider the creation of the written musical text in Western Art Music, and the technological advancements that allowed extreme metal to be constructed through recording rather than written texts and scores. Finally, because this work relies on artistic research to allow the composition and written component to function dialogically, an explanation of the type of artistic research and how the methodological framework of that specific form of artistic research will be used in this dissertation is required to generate new knowledge.

## 1.1 Notation

Stone (1980: xv) asserts that there has only been three times in the history of Western music where epochal changes in musical aesthetics and philosophies have led to changes in the notational system. Stone describes the first two changes in the context of new emerging textures. The first major change started roughly in the 900's, as monody transitioned to polyphony (ibid.). This change gradually prompted the use of pitched staff notation and indications of duration that would become known as mensural notation (Stone, 1980: xv). Cole (1974: 57) states: "It was the spread of polyphony in the fourteenth and fifteenth centuries that made necessary both the strict, note-by-note synchronisation of parts and the unambiguous time notation in which the more stringent timetable could be written out".

The second big transition came with the development of functional harmony and chordal textures in the start of the seventeenth century (Stone, 1980: xv). This prompted the use of greater alignment between vertical and horizontal proportions of the score. Composers gradually notated all of the parts together on a single score, such that the reader could better follow the vertical (melodic) and horizontal (harmonic) aspects of the music simultaneously (Stone, 1980: xv).

Stone traces the third stylistic upheaval to the second half of the twentieth century (Stone, 1980: xv - xvi). Stone also identifies a distinct dichotomy in approaches to notation from the 1950's:

In the 1950s the third stylistic upheaval began to erupt, an upheaval which developed in two sharply contrasting directions. One of these was characterized by an unprecedented increase in precision of every conceivable component of a musical texture, with particular emphasis on formerly subsidiary elements such as dynamics, timbre, pitch inflections (microtones), location of sound sources, and so forth…The other stylistic trend rejected precision. Instead, it introduced deliberate ambiguity, varying degrees of indeterminacy, choices between alternatives, improvisation, and the utilization of extraneous, unpredictable sounds and circumstances.
(Stone, 1980: xv - xvi)

This research will heretofore refer to the two sides of this third stylistic upheaval as determinate notation and indeterminate notation. It will be argued later that *Argo* can be classified as an indeterminate work that attempts to avoid, as much as possible, the need for the performer to have any prior knowledge of indeterminate notation. The following section will explain what is meant by these terms and how *Argo* may be placed within that proposed framework of meaning.

Cole states that "The appropriateness of a notational system has nothing to do with the completeness, incompleteness or the amount of detail shown. It can only be determined in terms of the performer's ability to interpret it. "(Cole, 1974: 16). This section will attempt to show that determinate, indeterminate and standardised notation are notational systems that provide different scopes of interpretation to performers, and that the use of these systems are usually constructs of larger artistic ideologies and musical styles.

### 1.1.1 Determinate notation

Determinate notation arose primarily from twentieth-century post-Second Viennese School serialist composers like Pierre Boulez (1925-2016) and Karlheinz Stockhausen(1928-2007) (Cole, 1974: 128). An increasing specificity in notation came from attempts to quantify musical parameters like timbre and dynamics more accurately to a degree of specificity similar to pitch and duration (Kokoschka, 1980: 9). The increased specifications that had begun to appear in scores during the first half of the twentieth century reduced the interpretive burden of the performer. The musical aesthetic had begun to arose where performers functioned as passive readers of a score, rather than subjective interpreters (Cole, 1974: 127).

Determinate notation necessitated change in symbology and performance practice. An implicit change was the role of the performer. This change in reflected in the aesthetic preferences of

composers like Stravinsky, who stated: "I have often said my music is to be 'read', to be 'executed', but not to be 'interpreted'" (quoted in Cole,1974: 127).

This section will discuss determinate notation of pitch only as it applies to twelve chromatic steps between an octave, as it is the tonal basis for *Argo*. Developments in microtonal notation will therefore not be discussed. Also absent in this discussion will be newer, less frequently used systems (Cole, 1974: 137) like Equitone.

Stylistic developments in the latter half of the twentieth century necessitated a change in the method in which pitch was traditionally represented on a 5-line stave. Following the start of free atonality and twelve-tone serialism, the notion of a sharp or flat was no longer indicative of an 'accidental' note in a diatonic context. Especially in the case of twelve-tone music, expressing a tone row in the existing framework of sharps and flats is at odds with what accidentals were originally designed for (Karkoschka 1972: 1-2).

Traditional staff notation was designed to express music in 7-note diatonic major, minor and modal (church mode) scales (Karkoschka, 1972: 9). This led to the establishment of an octave repetition after a note moves seven steps up or down the stave (Cole, 1974: 47). An accidental does not only refer to a specific pitch of a note, but also to its tonal function within a key (Karkoschka, 1972: 9). This can result in a performer slightly sharpening or flattening the pitch of a note with an accidental to heighten its expressive qualities within its supposed tonal framework (Karkoschka, 1974: 9-10).

The most common suggestion for reform in designing a notational system that better expresses twelve equally distanced semitones in an octave without a tonal function has been to add staff lines (Karkoschka, 1974: 11).[6] This addition would remove the need for accidentals by providing a line or space between lines for all twelve notes that divide the octave. The feasibility of such an approach has been questioned, given that a greater number of staff lines and wider range in lines for an octave to be formed would likely only make it more difficult to read (Karkoschka, 1974: 11).

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[6] See Cole,1974: 48 for an illustration of other approaches that involve changing the note heads instead of adding extra lines.

Various bizarre alternatives have been suggested to meet these difficulties:[24]
   1)  Increasing the number of niches so that one can be allotted to each note:

   2)  Avoiding double symbols by using new symbols for non-diatonic tones:

   3)  Refining the spacing, while retaining the stave:

*Figure 1: Approaches to notating pitch, taken from Cole, 1974: 48*
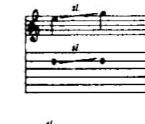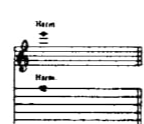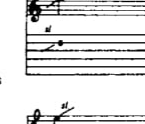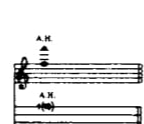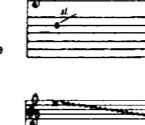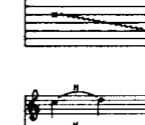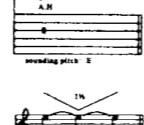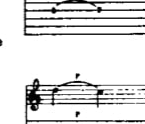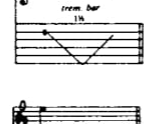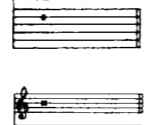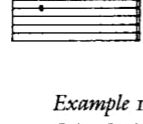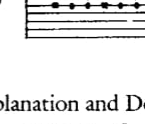
The decision to remain within the established 5-line staff notation in *Argo* is twofold. Firstly, the guitar being a fretted instrument means that a finger may be placed anywhere between two frets and produce the same pitch. With the exception of bending the string (a technique which is specified in *Argo*, albeit rarely), this eliminates the possibility of a player slightly sharpening or flattening a note instinctively by way of interpreting an accidental. Secondly the instinctive alteration of pitch that may arise from the use of accidentals presupposes tonal Western Art Music performance practice (Cole: 1974: 20). As has been stated earlier, *Argo* is composed as a work that is primarily written for performers of extreme metal.

*Argo* varies in terms of tonal frameworks. There are sections where the use of accidentals is done in order to imply a certain tonality or scale. At other times, *Argo* features harmonic and melodic procedures that are not based on any tonal framework, and the use of accidentals may become misleading. Given that an extended transition from more tonal elements to more atonal ones is used to create a musical narrative, it is not possible to comfortably say at what point accidentals are indicative of tonal implications and at when they are not.

In Western Art Music, exact specification of timbre to the same extent as pitch and duration has proven to be somewhat illusive. This may be due to the role that the notation of timbre has commonly fulfilled in Western Art Music. Cole states that "'Meaning' in Western music is a matter of pitch, time, and, occasionally, of dynamics. Timbre, as far as it is notated at all, is relegated to the 'manner of performance' category" (Cole, 1947: 78).

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The aspects of timbral specificity that changed in the latter half of the 20th century was marked by an expansion of the vocabulary of standardised symbols and written instructions that specify timbre (Cole, 1974: 79). The expansion of this vocabulary was an outgrowth of avant-garde composers seeking new methods of performing instruments (ibid.). The need to notate the extended uses of instruments resulted in the formulation of signs (ibid.).



**Definitions for Special Guitar Notation** (For both traditional and tablature guitar lines)

*Example 11.* "Tablature Explanation and Definitions for Special Guitar Notation" (From *Guitar for the Practicing Musician*, August 1990, p. 33. Copyright © 1992 Cherry Lane Music Co., Inc. International Copyright Secured. All Rights Reserved. Reprinted by Permission of Cherry Lane Music Co. Inc.).

*Figure 2: Catalogue of common extended techniques for electric guitar, taken from Walser,1993: 91*

The use of what may be termed 'extended techniques' for the electric guitar has been used in popular guitar publications with a fairly consistent symbology from the twentieth century (See Figure 2). Karkoschka (1980: 40-41) provides additional symbols for extended techniques that are applicable to the electric guitar, despite being catalogued from classical guitar music.

Cole lists one of the main reasons that the notation of what may be termed 'complete' timbral specificity is unattainable, is that timbral variations cannot be objectively described in a way that would be meaningful to the performer (Cole, 1974: 78). With regards to the aforementioned extended techniques for guitar, there is certainly some truth to Cole's assertion. However, in the case of amplification and distortion, Cole's assertion carries less weight.

Amplification and distortion provides a great dealer spectrum of timbral change for the guitar in comparison to its acoustic counterparts. Despite its wide scope of possibilities, the exact specification of timbre for the electric guitar in the framework of determinate notation is certainly possible. Unlike action notations like *sul tasto*, equalisation settings on audio equipment such as Bass, Middle, High and Gain can be measured and expressed on a score. Many of the aforementioned settings appear on the amplifier on a numbered range from 0-10, making it easy to express numerically on a score and followed as an instruction by the performer.

The growing number of standardised symbols for electric guitar extended techniques means that composers have more options available for specifying timbre. However, they are subject to the pitfalls of their predecessors as subservient elements of notation that describes *how* something is to be played, alongside a primary element that specifies *what* is to be played (Cole, 1974: 78-79).

Dynamic specificity has made gradual advancement before the 20th century. Beethoven's symphonies generally have a single dynamic markings for all instruments at a time, implying that the performers or conductor should make use of their own aesthetic judgement to equally balance all of the instruments that are playing at once (Cole, 1974:74). By comparison, later works like Tchaikovsky's sixth symphony show more nuanced instructions regarding dynamic balance (Cole, 19: 74-75); woodwinds and strings are given a dynamic marking of *fff*, while brass is given a marking of *ff* and an instruction not to overpower the rest of the orchestra (Cole, 1974: 74-75).

Boulez and Stockhausen's works show a greater reliance on dynamic specificity in comparison to the nineteenth and early twentieth century counterparts. There are cases in which every note in their composition features a dynamic marking of its own (Cole, 1974: 75). One such example is Stockhausen's *Kreuzspiel* (1951). In this work, dynamic range is divided (*ppp, pp, mp, p, mf,*

*f, ff*, etc.) into a series of elements that undergo permutation along with pitch and duration (Johnson, 2013: 5). A successful performance of this work requires performers to interpret dynamic levels to the same degree of consistency as they would pitch and duration. Dynamic markings have to be played at a consistent level of loudness upon every iteration, while differing enough from other in loudness from other markings to an extent where they are audible different from each other.



*Figure 3: Bar 170-173 from Kreutzspiel*

*Keutzspiel* is representative of an ideological shift in the notation of dynamics. While the dynamic indications themselves are not new, the placement of a dynamic indicator at every written note may be indicative of an ideological shift in how dynamics are approached in determinate notation. The dynamic intensity is as much a part of the character of a note as its pitch and duration. This would seem to indicate a departure from the pre-twentieth century uses of notating dynamics, where it was not indicated or performed to a degree of consistency as pitch and duration (Cole,1974: 74). Below are some more examples from Cole(1974: 77) of other approaches to notating dynamics.

Kupkovic: Für Bassklarinette allein

Upper line represents pitch, dynamic below

Bartolozzi: New Sounds for Woodwind[36]

Dynamic indicated by thickening of beam

Cage: Changes

Numbers indicate dynamic levels

Stockhausen: Zyklus

Arrow indicates ritenuto
Loudness shown by size of notehead
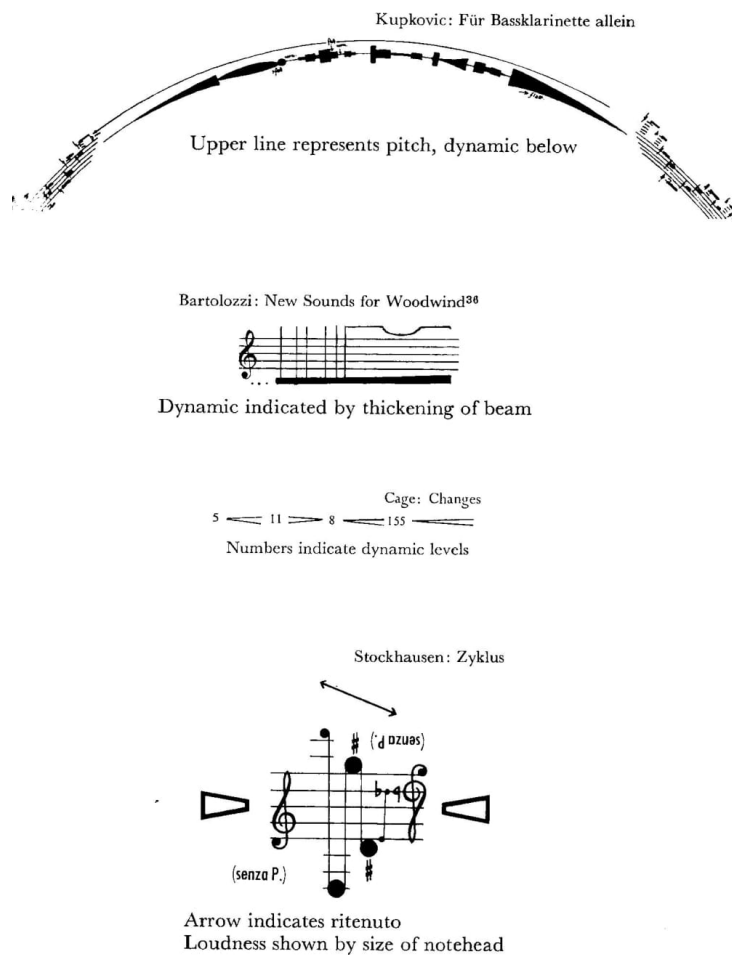
*Figure 4: Approaches to notating dynamics, taken from Coke,1974: 77*

An underlying critique of determinate notation's specificity of dynamic indications concerns the human element. Composers have shown in the second half of the twentieth century that a greater degree of dynamic specificity and range is certainly possible to notate and for the performer to comprehend. However specific and wide-ranging these indications may be, the limits of perception and technique of the performer is the ultimate deciding factor in the successful execution of such instructions (Cole, 1974: 76).

Electric guitars present viable possibilities for the exact notation of dynamic levels. The loudness of a distorted guitar in a performance with a band is not only contingent on the physical movement of the player (eg. how hard a string is plucked), but also on the amplifier. It can therefore be conceivable that a composer may be able to specify dynamic level to a unit of measurement like decibels, and that it is within the realm of possibility for the performer to follow. *Argo* avoids such exact specification. Dynamic indicators are few, and only refer to

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dynamic levels in a very broad sense. This is part of the attempt to leave the more nuanced decisions regarding aspects of dynamics to the performer.

*Figure 5: Dynamic indications in Argo (Bar 239-250)*

The idea of a fully determinate score, written for human performers, seems to exist more as a theoretical concept than a practical possibility. In one of the concluding chapters (entitled *Towards a Determinate Notation*) of his book, Cole provides the following summarised critique of attempts by composers to create fully determinate scores to performers:

> Since the 1950s, the ideal of a totally determinate notation has become somewhat tarnished. It has grown increasingly clear that absolute control, mechanistic response, can never be attained while the human relationship is involved. Advocates of total determinacy failed to take account of four main factors:
> 1) The limits of the human performer.
> 2) The incompleteness of the notational specification.
> 3) The extent to which unconscious deviation from the directive contributes to satisfactory realisation.

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4)The inappropriateness of an authoritarian directive in contexts where creative collaboration is called for.
(Cole, 1974: 128)

### 1.1.2 Indeterminate notation

It has been argued that the concept of indeterminate notation began as an artistic reaction to determinate notation earlier in the twentieth century (Karkoschka1972: 2). This argument is further strengthened, considering that composers like Stockhausen and Boulez, who were known as the first practitioners of determinate notation, later turned their attention to the development and use of indeterminate notation. Composers became critical of the subjective side-lining of the performers, and had begun to find a new way of emancipating the performer as a 'cold', objective and quasi-mechanical executioner of instructions. Indeterminate notation arose as an answer to placing the subjective input of the performer on the forefront in a way that surpassed the subjective input from pre-determinate notated works from the 19th century (ibid).

As stated earlier, standardised notation takes the form of an open system of communication akin to language. As an open system of symbology, the meaning of symbols can undergo change, as well as the manner in which older established symbols are interpreted in a more recent setting. This means that the definition of what may be termed as 'standardised' has as much to do with the time and musical aesthetic framework in which signs are interpreted as the signs themselves. The underlying assumption that precedes the creation of *Argo*, is that its interpretation takes place in the stylistic idiom of extreme metal, by performers of extreme metal.

### 1.1.3 Standardised notation

*Argo* is constructed in the aforementioned creative mould of 19th-century standardised notation, and as such, the use of the term 'standardised notation' should be interpreted through this understanding. There are elements that are characteristic of pre-20th century standardised notation that go beyond the use of specific symbols. There are different musical parameters that are communicated (pitch, duration, tempo, articulation, expressive markings, etc.), however they are followed with varying degrees of accuracy and importance. The hierarchy of 'literalness' and emphasis in which different musical parameters are interpreted is a

distinguishing factor of standardised notation from the late 18th century until the early 20th century.

At the top of this hierarchy of literal interpretation are pitch and duration (Cole 1974: 78). Pitch and duration being primary elements of a score is by no means a unique characteristic of standardised notation from the abovementioned time period. Karkoschka argues that pitch and duration are the "basis of our musical perception" (Karkoschka, 1980: 9), and that compositions where they do not appear as the central focus are a rare occurrence. The unique characteristic of standardised notation comes from the rest of the musical parameters playing a less important role in an undiscernible hierarchy of importance (Karkoschka, 1980: 9; Cole, 1974: 78).

Decisions like how long a fermata is to be held and cut off, the exact beats per minute in which *presto* is to be played, how *espressivo* is to be translated to performance or the difference in loudness between *f* and *fff*, tend to vary more widely between different performances and performers than pitch and duration (Cole, 1974: 14,17,18,74,78; Read, 1969: 267).

Following a growing catalogue of indeterminate scores in Europe and the United States, several attempts have been made to create greater consensus between composers and performers on how to interpret newly created symbols that appear in these scores. A good example of such an attempt is Erhard Karkoschka's *Notation in New Music* (1972). *Notation in New Music* is a text by a composer of indeterminate music, extensively cataloguing new emerging notations by himself and other composers, written for composers, performers and educators of indeterminate music in a professional setting. As will be discussed later in this thesis, there are a few sections in *Argo* that more easily resemble 20th -century systems of indeterminate notation than traditional standardised notation. It will be argued later in this thesis that these sections are designed in a way that they only necessitate knowledge of standardised systems of notation, primarily from the 19th century.

While there are a few sections that arguably fall more comfortably within 20th century models of indeterminate notation. At any given time in the score of *Argo*, whether indeterminate or not, the vast majority of (and often only) musical instructions are expressed in parameters of pitch and duration. Very little instruction is given regarding timbre throughout the work, with

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the understanding that the performer will have to rely on his/her own creative and artistic decisions to fill in the void of information (see Figure 6).



*Figure 6: Bar 814-825 from Argo*

The process of filling this directive void is relevant to *Argo* on a theoretical level concerning the nature of notation. *Argo* was primarily written with the understanding that performers who are well-versed in extreme metal, not 19th and 20th century Western Art Music, will be performing the work. Regardless of how rigidly and precisely a musical symbol may be defined, the fact that it is read by a performer in a complex mixture of physical ability, passive musical instincts, training and focus on specific styles and aesthetic philosophies, means that there will invariably be some degree of subjective interpretation. Determinate, indeterminate and standardised notation have shown that the degree to which subjective interpretation is practiced in a piece of music can be controlled by the composer and exploited as a creative tool. Sound recording in extreme metal, as a closed system of communication, offers no such creative freedom to the composer.

### 1.1.4. Twentieth century developments in technology

The score has fulfilled an historic dual purpose as a creative artefact. It has functioned simultaneously as a set of instructions for performance and as a medium for preservation. However, twentieth-century technologies in sound recording have increasingly rendered notation obsolete as the ideal medium for preserving sound (Cole, 1974: 17). Cole lists four primary uses for notation:

1) To allow the writer to invent new music, and to calculate effects in advance and at leisure.
2) To provide an exact timetable, so that independent parts may be closely co-ordinated.
3) To provide the performer with an artificial memory.
4) To describe the sounds of performed music for purposes of analysis or study (as, for instance in the notations of folk-music collectors)."
   (Cole, 1974: 9)

While it may be implied in the first point, point 3 is also applicable to the composer, as it allows the composer to sketch ideas or sections of music that may be worked on further at a later stage. Sound recording and digital audio workstations provide viable, arguably superior, alternatives to some of these uses. From its stages of relative infancy in the early 20th century, sound recording was already hailed by composers and ethnomusicologists like Béla Bartók (1881-1945) as a superior substitute for transcribing a musical performance in all of its sonic nuance for purposes of preserving and documenting works from an aural musical tradition (Cole,1974: 17).

Multi-track recording, sampling and midi sound synthesis provide possible substitutes for points 1 and 2, albeit in a different context (the open system of notation is not in play). Insofar as point 3 refers to the score being used as an aid for memory during performance, sound recording and digital audio workstations do not provide a viable alternative use. However, if point 3 is also interpreted with the inclusion of composer, as mentioned earlier, the digital storage of recorded, sampled or artificially synthesised sound can aid in providing the composer with an artificial memory.

If one is to regard an album from an extreme metal band and a score from a Western Art Music composer as musical works, their difference may be explained through Cole's theorisation of notation in *Sounds and Signs*: *Aspects of Musical Notation*(1974). Cole views notation as an open system of communication akin to that of language(Cole, 1974: 15). Symbols in an open system (for example, letters of the alphabet or note names) may share a certain amount of

consistency in meaning amongst different interpreters, but the symbols do not have a singular pre-defined meaning that is true by definition. A consensus regarding what the symbols in an open system mean can change over time, meaning that the rules that govern the context in which these symbols are used may also change over time. This leads to Cole's explanation of the score as a medium of preservation that takes place in an open system.

Continuing Cole's theory of notation as an open system of communication, a recorded musical work like an album from an Extreme metal band would fall under the category of a closed system. The information sounded from an album upon its playing: harmony, melody, rhythm, lyrics etc. are not able to be altered by external forces as the recording is an audio simulacrum of a fixed moment. Thus, unlike a score, where the symbols can be reinterpreted over time, the recording is, in a sense, static.

### 1.1.5 Tablature

The term 'tablature' is used in this research to refer to guitar tablature, unless otherwise qualified. Tablature originated in the fifteenth century, most popularly for the lute and keyboard instruments, when instrumental music had become more commonplace (Stone, 1980: 330). Tablature notation shares some visual similarities with staff notation. Tablature notation makes use of lines akin to those of staff notation, only the lines are used as literal representation of the amount of strings/keys on the instrument (Read, 1969: 21). Instead of note heads, tablature notation makes use of numbers, letters of the alphabet, or a combination of both to indicate which strings/keys are to be used and, in the case of guitar tablature, on which fret the left hand finger(s) should be placed (Read: 1969 21). Another variation of this approach in guitar tablature is with the use of a 'chord box' which visually represents the number of strings vertically and the frets horizontally, with black dots (or clear circles in the case of open strings) representing where on the neck and on what strings fingers have to be pressed (Cole, 1974: 39).

The decision to abandon tablature as the preferred method for notating Lute and guitar music likely originated from the need to present the music in a universal 5-line stave layout that would be shared by most instruments (Read, 1969: 22). The standardised use of 5-line staff notation for guitar music took place during the seventeenth century (Read, 1969: 22). Tablature for guitar and keyboard instruments were viewed unfavourably over time as adequate systems of notation because of their inability to communicate information regarding pitch like intervals

and note names (Read, 1969: 21; Cole, 1974: 38). Carl Dalhaus provides the following critique that may be considered applicable to guitar tablature:

> Fingering notation seems to make concessions to the player. Yet he is not a machine reacting to signals, but a thinking reader working within a context. And insofar as an interpreter's work begins with thinking about the structure of the music, fingering notation, that prescribes as it does nothing but actions, is an inadequate notation
> (Carl Dalhaus, as quoted in Karkoscka, 1980: 6)

In the 20th century, tablature can be categorised under action notation. Action notation broadly refers to a system of notation that instructs performance by indicating physical movement rather than any explicitly musical instructions regarding pitch (Karkoschka, 1972: 3, Cole 1974: 38). Tablature can fall under this definition of action notation, given that its purpose is to instruct the performer on the string and position of the neck that the hands must occupy (Cole, 1974: 39). Any knowledge of interval size or note name is therefore not required.

There has been a resurgence of tablature for guitar and keyboard instruments in the 20th century. As discussed earlier, guitar tablature has reappeared in non-academic publications like guitar magazines in transcriptions of popular music, of which extreme metal is a part. In Western Art Music, Klavarscribo (a derivative of earlier keyboard tablature) has been proposed in the twentieth century as a possible replacement for standardised notation for keyboard instruments, and has become one of the new proposed systems of notation with the largest following (Karkoschka, 1980: 11-12).

Deciding against the use of tablature simply to follow convention is problematic for composers seeking to write for extreme metal performers. A good argument can be made for the use of tablature because it is the one form of notation with which extreme metal performers (specifically guitarists and bassists) are most likely to be familiar.

An argument for or against the use of guitar tablature in the notation of extreme metal might be better suited for a case-by-case basis. Tablature can, as an example, function as a method for notating timbral specificity. If a composer feels that very specific strings need to be used for bringing out specific timbral characteristics that arise from playing a note on a specific string, it is possible to do so using tablature. Notating specific choice of string for a note in staff notation involves writing the desired note and adding an additional symbol which indicates the string number. Tablature is arguably more effective in this regard, as it only needs one symbol to communicate the same instruction.

*Argo* was composed with the intent that, wherever possible, any creative decisions regarding the use of timbre is left to the performer. One of the main deciding factors that influence timbre on the guitar is choice of string. Staff notation makes it possible to instruct a guitarist to play a specific note without specifying on which string it should be played. By omitting the string number under a note, the guitarist is required to choose a string on which the note should be played. The implication is that one of the main deciding factors that affects the timbral quality of a note on the guitar is left to the performer. Guitarists are therefore required to use their judgements in almost all facets of timbre production on the electric guitar (string choice, position of the right hand, choice of pickup activation, choice of amplification, choice of distortion, equalisation and addition of other effects pedals etc.).

## 1.2 The Musical Work

The definition of a musical work in metal and Western Art Music will be structured to provide an argument for separating the medium from the musical style. The assertion that I will combine the *how* of Western Art Music with the *what* of Metal further implies that the *how* of Metal and the *how* of Western Art Music differ to such an extent that it is significant. I argue that this can be demonstrated by comparing how they relate historically to a set of needs and technological capabilities that dictated the use of a specific medium for the majority of musical works in extreme metal and Western Art Music. While these musical entities have operated in different historical and social contexts, the compositional conceptualisation of *Argo* is embedded in a tertiary-trained 19th Century musical notational and philosophical structure, and therefore understanding how and to what extent these genres do or do not intersect is of importance in the critical discussion of this work's creation. *Argo* therefore is a composition stylistically linked to extreme metal, but still rests ideologically on the 19th -century phenomenon of the score as an autonomous musical work.

The musical work can be understood through its particular attributes that gained prominence at a specific historical period to such an extent that they became standardised methods of artistic practice. This leads to the musical work being defined as a historic phenomenon rather than a philosophical concept. This duality in representation is present in *The Imaginary Museum of Musical Works* (1992). This text is particularly relevant to this research in this regard because an historical approach to defining the musical work is favoured by Goehr over an analytic approach (Goehr, 1992: 4).

Goehr shows that the idea of a score being an autonomous object after its creation reached special prominence in the 19th century. The score became known as a musical work that is capable of potentially endless reproduction and preservation without the inclusion of the composer. The final step that ensured the autonomy of the score was semiotic in nature. Composers would have to adopt a symbolic representation of their music under a consistent framework of consensus between them and the performers. Goehr shows that the need for a standardised system of notation arose from a multitude of artistic and ideological factors that are a product of their time. Goehr states:

> In the last half of the eighteenth century, composers were increasingly allowed to produce completed scores to reflect the very best version of their music, conceived independently from any particular performance. The need for a fully specifying notation really became urgent, however, when it became the norm for music to travel independently of the composer, when one and the same composition began to be repeated in numerous performances, when compositional styles became more personal, and when, finally, musicians who had no personal contact with composers fully realized their need for some intelligible and accurate means of access to their music. Consequent developments in notation included increased specificity of structural elements, standardized symbolism, and improved copying. Such developments were designed to demonstrate the ways in which music could now be preserved in a manner suitable for a fine art
> (Goehr, 1992: 224-225).

The use of aleatoric composition in sections of *Argo* does not disqualify it automatically from this 19th-century ideology of the musical work. It is still carried out in the spirit of distancing the composer from the performer. Any resulting similarities or differences between different performances are a construct of the extent to which I specify indeterminacy and improvisation. The aleatoric nature of the work stems from my modified use of standardised notation through the omission of certain parameters like pitch, rhythm and duration, rather than creating new models of representing music through notation.

*Figure 7: Opening Section of Argo*

Goehr shows that there is an establishment of a single, idealized version of how a musical work is to be created that underpins the establishment of a canon or mainstream. In the case of Western Art Music, the establishment of standardised symbolism for the creation of musical works contributed to the definition of a musical work, and thus the formation of its canon. As Goehr shows, this standardised symbolism was exploited by composers to specify instructions for the performance of their works with both greater nuance to and consensus amongst performers.

This research therefore interrogates the position of a musical work within metal music that is constructed through a method of notation that is more common to nineteenth and early twentieth-century Western Art Music. That is to ask, if the method of composition contributes to the definition of a musical work within Western Art Music, does this apply equally to extreme metal? If metal music is defined by the praxis of its construction, what changes occur when this praxis is altered?

While the musical work, as argued by Goehr, is a confluence of historical practices which form to create a canon communicated through written texts (namely musical scores), I argue that within the concept of heavy metal, the audio recording performs this same function. The main way in which musical works are accessed and consumed by listeners and created by composers in popular music, is often a by-product of audio recording (Warner, 2009: 132). As a subcategory of popular music, metal (and extreme metal by extension) falls within a framework of artistic practice that centres on the use of audio recording to create musical works (Kahn-Harris, 2007: 2;  Walser, 1993: 7).

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The use of audio recording for the creation of works shares some similarities with the use of notation. Audio recording and notation provide composers with an opportunity to externalise the creation of a musical work through a medium that is replicable and capable of being expressed as sound without the inclusion of the composer. This section will argue that the change from notation to audio recording was driven by technological innovation far more than a change in artistic ideology. Jones (as quoted in Warner) argues that "It is the technology of popular music production, specifically the technology of sound recording, that organizes our experience of popular music … popular music is, at every critical juncture of its history, determined by the technology musicians use to realize their ideas" (Warner,2009: 132).

The purpose of audio recording is not to describe or instruct the performance of a musical work, but to be the culmination or by-product of it (Kittler, 1999: 12). This meant that the use of audio recording for the creation of musical works emphasised performance over notation. To a microphone or amplifier, it is of no importance how a sound is produced, its function is simply to record or reproduce the produced sound within its mechanised framework. This emphasis in performance was interlinked with an emerging trend in the popular music of bands where they are themselves the primary composers and performers of most of the music in their repertoire.

The emergence of the composer/performer is understandable, considering that the artistic practice that leads to the creation of a work using audio recording is performance, not its description. Kittler states:

> In contrast to the arts, media do not have to make do with the grid of the symbolic. That is to say, they reconstruct bodies not only in a system of words or colors or sound intervals. Media and media only fulfill [sic] the ''high standards'' that (according to Rudolf Arnheim) we expect from ''reproductions'' since the invention of photography: ''They are not only supposed to resemble the object, but rather guarantee this resemblance by being, as it were, a product of the object in question, that is, by being mechanically produced by it- just as the illuminated objects of reality imprint their image on the photographic layer,'' or the frequency curves of noises inscribe their wavelike shapes onto the phonographic plate
> (Kittler,1999: 11-12).

Kittler indirectly shows in his first chapter (*Gramaphone*), how the use of audio recording as a medium that breaks the monopolisation of the written word had implications in terms of how autonomy would be defined in a musical work. He states: "Whereas (according to Derrida) it is characteristic of so-called Man and his consciousness to hear himself speak and see himself write, media dissolve such feedback loops'' (Kittler, 1999: 22-33). Replacing

'speak' with 'play' or 'perform' is equally applicable to this statement within the context of 19th century Western Art Music performance and composition.

Kittlers' notion of media would imply that the purpose of audio recording is to capture performance in a 'neutral' way where only the object in question seeks to be represented, yet Warner (2009, 135) argues that within the realm of recording popular music, this is not the case:

> The view that audio technology simply seeks to literally 'record' the acoustic reality of traditional musical activity as transparently as possible is not only untenable, but also was hardly the case at the dawn of recorded music. The levels of sonic manipulation of modern popular music recordings are not only very high, but also completely fly in the face of traditional musical activity … all popular music recordings could be analysed as technologically determined artefacts, even though some might initially appear to be more the result of technological intervention and manipulation than others. For several genres of popular music, the level of intervention is explicit and immediately audible (as in the case of disco and most later forms of dance music, for example), for other genres (country and western, say) the levels of technological manipulation are often seemingly less apparent but in fact no less real
> (Warner, 2009: 135).

Extreme metal's level of technological intervention falls somewhere between the spectrum of sonic manipulation in the genres that Warner mentions. In extreme metal, and metal in general, sonic manipulation is not only present in the recording of sound, but also plays a key role in the production of sound that is interlinked with instrumental performance.[7]

The musical practice that involves the creation of a musical work through audio recording is, more often than not, a multifaceted approach that presupposes several different points of creative input that fall beyond composers and performers (Warner, 2009: 145). Warner argues that a recorded musical work like an album should not be understood as a creative artefact that stems from a single creative voice, as it is in the Western Art Music canon. Rather, it should be defined as an object that is the product of several simultaneous and interactive creative practices by multiple individuals, some of whom are not the composers or performers of the musical work (Warner, 2009: 142).

> …it is evident that a single audio recording may be approached from many different angles: … for many musicians and music-lovers it is an aesthetic object; it is the result of a series of musically and technologically-based processes; it is the product of a unique set of working practices from a number of creative individuals

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[7] See 4.3.3 Distortion for a full account of how technological interventions like distortion shape the musical practice of timbre and instrumental technique that is specific to extreme metal.

(Warner, 2009: 145).

Warner divides these practices into four basic categories of interactive activities: conception, realization, perception, and contextualization (Warner, 2009: 142). Warner makes clear that these are "not to be seen as separate elements in a linear production process but rather as activities that occur concurrently, each informing, and often bringing about, modifications in the others''(Warner, 2009: 142).

The underlying technology that made the distanced reproduction and performance of musical works possible on a wide scale in the 19th century was the invention of mechanised printing (Kittler,1999: 199). Its development and widespread use as the primary point of access for performers and listeners through publishers in the 19th century was one of the primary mechanisms of distribution that placed composers in a position to become increasingly distanced from performances of their works (Goehr,1992: 224).

The establishment of popular music as an aural tradition was made possible, not only by the use of new technologies in the recording of sound, but also by new technologies in the transmission of sound. The invention of radio transmission for sound, along with the gramophone and phonographic plate, was one of the most significant technologies that ensured the collapse of the monopolisation of writing in Western Art Music, and its almost complete absence in popular music (Kittler 1999: 49).

As stated in the opening of this subsection, the difference between mediums of creation in Western Art Music and extreme metal is not necessarily a construct of different artistic needs. The absence of notation in the composition of works in extreme metal does not mean that there is not a similar need amongst composers to produce a single, complete, idealised version of their work. There is also the same capacity for composers to distance themselves from a musical work by creating it using a medium that can be replicated and performed or played without the composer. Rather, they found a different and arguably more effective method of doing so, namely audio recording.

The use of audio recording resulted in the musical work no longer being regarded as a set of written musical instructions to performers. It had become a recorded and sonically altered performance(s) that represented the single, idealised version of the musical work (Warner,

2009: 137). This meant that the line that separated the composition of a musical work from its performance could no longer be drawn as easily as it could within the Western Art Music canon. Audio recording provided the opportunity for performance to function simultaneously as an act that contributes to the creation of a musical work and a method of representing it as sound (Warner, 2009: 137).

As previously discussed, the widespread use of standardised notation in Western Art Music came from factors that were entrenched in the composition and performance of works. The increasing performance of their works without their inclusion and an increasing individualisation of musical style were factors that led to the use of standardised notation within Western Art Music. Although metal has made significant stylistic developments since its origins in the 1980's, the evolution of metal did not prompt a contingent need for a change in recording technologies to create a musical work. Metal's solidification in the use of recording technology to create musical works falls under a form of musical practice that can be placed more broadly in the realm of popular music. A study in the role of the recorded work in popular music can therefore also be regarded as relevant to metal.

It is understandable that a new form of music like extreme metal, which was born within such a media landscape, would turn to artistic practices of creation and preservation that allow the musical work to thrive within the established mode of accessing music. Extreme metal may have achieved a general form of standardised practice through the use of audio recording but it has certainly undergone significant changes in the use from analogue to digital media (see Kahn-Harris, 2009: 78-95). The 21st -century model of artistic practice in extreme metal increasingly revolves around a digital medium of creating and distributing musical works. This paradigm is governed by the use of digital recording technology and storage for creating and preserving musical works, and the internet for distributing them (Kahn-Harris, 2009: 91).

In the case of *Argo*, it is my goal to depart from this tradition of creation and dissemination within extreme metal music, I contend that the score of *Argo* is an autonomous musical object that does not require my direct involvement in order to be performed, and in that sense is linked more to a construction of the Western Classical musical work. Thus, *Argo* is sonically linked to extreme metal and rooted to Western Art Music ideology and artistic practice.

As the extensions of technology continue to open new approaches not only to the archiving and disseminating of music, but in its very creation, this research argues that in the case of extreme metal, a recording takes on the properties of the score. Yet with regards to *Argo* I would argue that it be seen, in a sense, as a musical work in the sense in which Goehr utilises the term. It is a work that is informed by a canon of traditions and practises, and conceptualised by a composer who – unlike in most extreme metal contexts – does not intend to perform the work himself, but rather have the work be performed by others. Additionally, it is a musical work in the form of a written text, a score.

## 1.4 Artistic Research Methodology

This research places the musical work in a framework where it is the primary object from which knowledge is generated. The written component will function as a mechanism for presenting specific aspects of the musical work in a discourse that will facilitate the production of knowledge. This will be achieved by investigating how two specific claims interact: (1) the claim that the construction of the work is primarily founded on the stylistic musical discourse of extreme metal (as viewed through my own aesthetic preferences and points of focus), and (2) that the medium on which this work is created is an outgrowth of the Western Art Music tradition within the ideologies and technological capabilities of a specific historic milieu. The specific system of notation that will be examined in this practical framework is based on the 19th-century representation of pitch and rhythm through standardised symbolism and musical autonomy through preservation. The synthesis of these two claims can be understood as the central focus of this research; it implies that their interaction is both significant and substantial.

Artistic research offers possible solutions for presenting such a form of research in an academic setting. Busch (2009) provides the following definition of artistic research (amongst many others) that may qualify this research within its usage as a term:

> Another form of artistic research is art that understands itself as research, in that scientific processes or conclusions become the instrument of art and are used in the artworks. This refers to a particular phenomenon in contemporary art, in particular in institutional-critique, whereby research is considered a part of the artistic process and is carried out by the artist herself. In this case, art is in fact a form of knowledge. It becomes the site of knowledge production and does not restrict itself to integrating previously known concepts…Here,

> artistic research and its product are one and the same. These might not claim to be scientific methods, but rather to be an enlightening and critical production of knowledge (Busch, 2009: 3).

Busch's argument here is not that the embodied knowledge (to use Henk Borgdorff's phrase) is to be seen as absolute. By its definition, artistic research functions within the academic concepts of critical engagement and review, but provides knowledge and perspectives from within the creative act. This dissertation is led by the view that composition is a form of artistic practice that can be understood as research. The created musical work will function as the main generator of knowledge concerning a very specific form of artistic practice, as expressed within a specific combination of musical style and medium. Using Busch's abovementioned definition, it may be possible to place this dissertation within the category of artistic research. Busch (2009) makes it clear that artistic research is not a monolithic term. It refers to a broad array of research methodologies.

Placing this dissertation within a specific form of artistic research is necessary for understanding its use, methodology and objectives within this theoretical framework. The following presentation of terminology will place this research within the methodological framework of artistic research by defining specific key concepts in one of its subsections: practice-led research. The extent to which artistic research and practice-led research will be defined should not be regarded as an attempt to provide a complete definition of those terms, but what elements of those terms should be clarified and mentioned in order for this research to be understood.

Dallow (2003: 51) divides studies from the 1990's that focus on the research of artistic practice into three categories: research into arts practice, research through arts practice and research for arts practice. In the same order, Dallow adjusts these three terms to give them a more concise meaning in their scope of inquiry and execution. He proposes the following terms: practice-led research, practice-based research and practice-oriented research (Dallow, 2003: 52). Borgdorff divides research that focuses on creative practice into a similar trichotomy, naming them: research on the arts, research for the arts and research in the arts (Borgdorff, 2012: 37). These trichotomous categorisations have been subsequently joined under the umbrella term 'artistic research'.

Dallow derives the definition of practice-based research from what he deems as "research *through* arts practice" (Dallow, 2003: 52). He derives its definition thusly: "Margolin describes the approach of research through art and design, centred as it is upon the 'studio project', as representing a new 'practice-led' approach to research which is not bound by traditional methodologies, but seeks to 'facilitate the relation of reflection to practice'" (Dallow 2003:52).

Practice-based research is sometimes used as an 'umbrella-term' for research that may include practice-led research (Shepherd, 2018: 11). The abovementioned definition of practice-based research by Dallow would seem to complicate matters rather than clarify them. There are, however, some notable distinctions between practice-based and practice-led research that are relevant to this dissertation. Candy divides what she refers to as "practice related research" into practice-led and practice-based research (Candy 2006: 1). She provides the following definition of the terms that may clarify their distinction in a way that is easier than dissecting the semantic intricacies of Dallows terminology: "If a creative artefact is the *basis* of the contribution to knowledge, the research is practice-based…. If the research *leads* primarily to new understandings about practice, it is practice-led." (Candy 2006: 1).

Bennet, Wright & Blom define practice-based research as "research that tests pre-formulated questions and/or hypotheses derived from artistic practice" (Bennet, Wright & Blom, 2009: 8). Practice-led research, on the other hand, makes no such inherent commitments to initial hypotheses or questions. It is defined as: "Research using practice to research practice. Often without an initial clearly defined question or hypothesis, the research may lead to a formal question of hypothesis" (Bennet, Wright & Blom, 2009:8).

The way in which Hans Huyssen (2015) describes how his research can be seen as practicebased through the interaction between the theoretical written section of his research and the practical composition-based section, is a good example of how the function of practice-based research in composition can be understood. He states:

> I believe that this kind of constitutive mutualism between practical and theoretical work should be considered as ultimate legitimization of the PBR approach. The point is not merely to juxtapose two different sets of findings; it is rather to acknowledge that different findings do not relate linearly, that they cannot simply be added up, but that they interact,

inform, change (constrain and enrich) each other, whence an emergent knowledge not to be gained in any other way arises
(Huyssen, 2015: xxiii).

Huyssen's description of practice-based research indicates why I have chosen to classify my research as practice-led rather than practice-based, while keeping his underlying expectations of artistic research's ability to produce knowledge within unconventional methodological frameworks. The "mutualism" between the written component and musical work that Huyssen describes does not exist in the same way in this research. Rather, the written component is led by the composition of the musical work.

Mareli Stolp's 2012 thesis may concern itself more with performance than composition in practice-based research, but it has arguably functioned as a text that furthered the possibility of artistic research within the realm of music. Kyle Sheperd's master's thesis *Interrogating the Own: A Practice-based, Auto-ethnographic Reflection on Musical Creation with Reference to the Work of Abdullah Ibrahim, Zim Ngqawana and Kyle Sheperd* (2018) makes extensive use of Stolp's thesis in forming the conceptual framework for practice-based research in Jazz composition and performance (see Sheperd, 2018: 11-12). Sheperd's research can be used as an example for conceptualising the study of composition in a scope that looks beyond the boundaries of Western Art Music in an academic setting. These are the core principles on which the legitimacy of this research relies.

The construction of the theoretical framework of this thesis is practice-led in and of itself. What makes this section of the thesis possible is the fact that there are repercussions in the practice of composing the creative artefact that span beyond its content. The primary origin of these questions that span beyond the content of the created work lies in its intended use: to be performed. The synthesis of the two claims of musical content and medium is what this research aims to address.

## 1.5 Conclusion

This research is a practice-led attempt at generating new knowledge by focussing on the artistic practice that led to the formation of the creative artefact (heretofore known as *Argo*). Through examining the creative freedoms and obstacles of realising said creative artefact through a praxis philosophically and methodologically founded externally to its standard approach, this thesis probes an understanding not only of the role of composer versus

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performer in extreme metal, but also how we consider the position of the musical work within this context.

Thus far, an account has been given of how artistic practice may lead to the generation of new knowledge and how I plan to use it within my research. The next section will document, examine and analyse the artistic practice in order to generate new knowledge. The next half of this research will be dedicated to showing how I have used the two proposed forms of musical practice. I will demonstrate how I have made use of notation through specific forms of alteration that deviate from 19th – century models of standardisation. This demonstration will almost always be closely interlinked in the demonstration of the second form of musical practice that I explore, namely what elements of extreme metal I make use of and how I make use of them with my own aesthetic preferences and artistic goals.

# Chapter 2. Guitars: Notation and timbral freedom

## 2.1 Introduction

In this chapter, the approaches used to conceptualise and notate pitch and timbre will be discussed. This discussion will focus primarily on the approaches to electric guitar writing, and the approaches to notating electric guitar techniques and tonalities that could be considered stylistic within an extreme metal context.

The first section of this chapter will contextualise the use of tablature, a form of standardised notation that is in wider use amongst metal guitarists. A greater reliance on tablature rather than staff notation by metal guitarists (even if it is just for didactic purposes) would justify an attempt by the composer to rather make use of tablature as it is more widely used by performers in a style of music that shows little reliance on written texts for the performance of musical works to begin with. Thus within this chapter I will consider why I felt that tablature was an ineffective method for communicating my ideas, and to my mind did not provide performers with sufficient interpretive freedom.

The second part of this chapter will explore the scope of interpretation that I leave to guitarists in *Argo* by design, and how notation allows for a greater scope for making individual preferences and unique choices for the performer. Specifically, I will show how the strategic omission of instructions requires performers to make use of their own aesthetic preferences in terms of tone production on the instrument and tone production as a by-product of electronic sonic manipulation, with a specific emphasis on distortion. The sound of a distorted electric guitar is a musical cornerstone of extreme metal sonic aesthetic. Kahn-Harris writes describes the sound of a distorted electric guitar as "the key signifier of metal" (Kahn-Harris, 2007: 31) There are two main components that inform my musical practice, as it relates to writing for the guitars in *Argo,* namely notation and timbral freedom. These two components are not entirely separable, as I make use of the former to ensure the latter. I will show in this section how I have made use of staff

notation[8] for guitars to specify note and pitch in exact parameters, but have left out key instructions regarding string choice and distortion, thus relying on the performers to make use of their own preferences in deciding the timbre of their parts. It is for this reason that the term 'timbral freedom' should be defined and understood in this section.

The use of the term 'timbral freedom' suggests an element of indeterminacy, as it is a structural element of *Argo* that ensures that no two performances can or should sound the same. As stated in the introduction, Chapter 4 will discuss forms of indeterminacy in *Argo*. Why then, is the notion of timbral freedom for guitars not discussed in that chapter?

I have chosen to place the notion of timbral freedom under the guitar section for two main reasons. Firstly, I view it as specific to the guitarists in *Argo*, as they make use of pitched staff notation. I am aware that this decision precludes many guitarists from performing my work. However I have felt it necessary to use notation rather than tablature not only because it provides mechanisms for communicating ideas that I consider superior to tablature, but also because there are sufficient guitarists who are able to read both staff notation and tablature, so finding performers would not be an insurmountable task.

Secondly, the type of indeterminacy that stems from the use of staff notation is achieved through the *omission* of important instructions (primarily, string choice and the amount of gain). The fourth chapter will show how I achieve indeterminacy in *Argo* through *alterations* of staff notation that affect the ensemble as a whole. It is worth noting before this discussion that a further motivation for the use of staff notation rather than tablature is that the abovementioned alterations are reliant on the music being presented in parameters of note and pitch that are not evident in tablature.

As such, the alterations of standardised notation that I discuss in Chapter 4 should be regarded as a further motivation for me to abandon the use of tablature in *Argo*. It should also be regarded as a further indication that my use of standardised notation is not

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[8] 'Staff notation' should be understood in this research as a system of notation with a consistent 5-line structure with interchangeable 'clefs' indicating note, pitch, rhythm (or component of the drumkit) and duration

contingent on any single, easily extractible factor. In essence, my argument for the use of staff notation should be regarded as a convergent line of argumentation from a multitude of factors rather than a single sequential line of reasoning.

## 2.2 Tablature

The advent of recording technologies within popular music broadly meant that the creation and preservation of musical works in extreme metal had to make no inherent commitment to any form of graphic representation on a written text in order to survive apart from their creators, as they existed as audio recordings. These systems of notation are not used as a basis for the recording of the work but are rather transcriptions of *existing* recordings of a composition (Warner, 2009: 139). Warner's argument here states that, the use of tablature within extreme metal is less of a mechanism to disseminate new or unrecorded compositions, but to show prospective performers how to play already existing compositions which have been recorded.

Metal as a whole has been visually transmitted via tablature, a system which, rather than using noteheads on a 5-line stave, commonly utilises a 6-line grid for guitars and a 4-line grid for bass guitars, with the number of lines representing the number of strings on the guitar[9]. Numbers are placed on the lines to indicate on which fret and string a note should be played (See Figure 8). These numbered symbols can be beamed to denote rhythmic values akin to staff notation, or be displayed alongside staff notation to facilitate the reading of duration and rhythm (See Figure 9).

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[9] If an extended range instrument, such as a 7 or 8 string guitar, or 5 or 6 string bass is used, the number of lines on the grid will correspond to the number of strings on the instrument.

*Figure 8: Taken from Walser, 1993: 91*

*Figure 9: Taken from Walser, 1993: 87*

## 2.3 Timbral freedom

Despite the use of very similar forms of tablature for fretted instruments in both Western Art Music repertoire and extreme metal, neither styles of music show its use as an idealised or standardised medium for the creation or preservation of musical works. Schuiling writes: "Compare guitar-music notation in tablature with that in staff notation: the former represents the instrument's interface and the actions performed on it, while the latter translates these into the more abstract tonal language of Western music" (Schuiling, 2019: 445).

As Schuiling's quote shows, tablature has functioned as a didactic tool to aid the reader in translating musical symbols on a written text to positions on the fretboard as quickly and efficiently as possible. The complexities of octave division, note names, pitched notes and where they appear on the fretboard are not required for the reading of tablature. Western Art Music practitioners are able to determine the sounding pitches of any instrument that makes use of staff notation without requiring any knowledge of how to play the instrument, provided they understand how the notes must be lowered or raised altogether if it is written for a transposing instrument.

Numbers on ledger lines in tablature do not represent values of pitches measured by frequencies. Rather, they represent values of distances that are measured visually by dividing the length of the string on the neck of the guitar, using the number of frets as markers for number of units. This means that the guitarist is able to associate an object on a line directly to a specific string and position on the neck of the guitar (with 0 representing an open string). The tuning and number of strings permits the guitarist to be able to produce the majority of notes at a specific written pitch within its range on more than one string. Figure 10 shows the range of plucked notes on an electric guitar in standard tuning with 24 frets. All of the notes that can be played on open strings or stopped frets are indicated. [10]

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[10] For instance, parts for guitars and bass guitars are usually written an octave higher than the sounding pitch. This is usually indicated with treble clef with '8' underneath it, although there are cases in which publishers omit this and it is expected that the guitarist is aware that the part will sound an octave lower than written.

The bottom staff shows the different positions on strings, as indicated on tablature, that can play the same note and pitch that is indicated on the top staff.
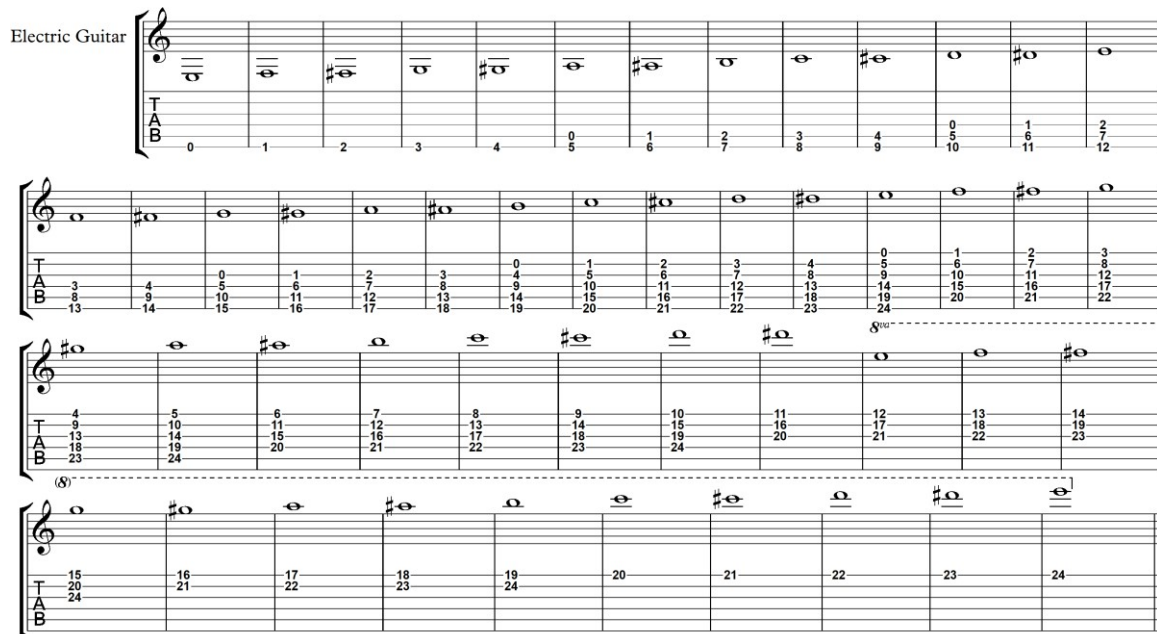


*Figure 10: Range of a 6-string guitar in standard tuning with 24 frets. The top staff indicates note and pitch, bottom staff indicates all the positions on the neck on which these notes can be played through tablature.*

As Figure 10 shows, only the bottom- and upper five notes that are playable on the open strings and frets of the electric guitar have notes that correspond to a specific string and position on the neck of the guitar. Specific notes at specific pitches do not always represent fixed positions on the fretboard. A note at a specific pitch can often be played on more than one position on the neck of the guitar, using different strings. The detuning of strings, as is common in extreme metal, also means that the position of a fretboard will no longer be indicative of the same note and pitch as it is when using standard tuning (Kahn-Harris, 2007: 31). The result is that the amount of options that are available to an electric guitarist for the same sequence of notes, especially in the middle range of the instrument, often has a multitude of different string choices, of which every permutation will produce a distinct timbral character.

What can be seen in the figure above, is that the same pitch can be played in multiple positions on the instrument, each with its own subtle timbral difference. Because staff notation expresses only the pitch (and in some editions optional or recommended

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fingering), the performer has an option of where on the instrument they wish to play any given note/phrase, and therefore allow for a relatively individualistic timbral expression. However this freedom is not provided in tablature, where the performer is not given pitches but rather dictated exact fretboard positions, effectively denying them the opportunity to make these individual timbral choices.

As an example, Figure 11 shows the different positions on the fretboard (indicated in the bottom staff) for an E Major arpeggio (sounding E4 G#4 B4, written E5 G#5 B5) if the string numbers are not indicated:
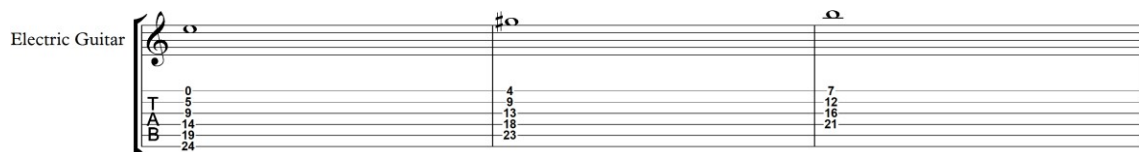


Figure 11: possible string choices for notes at specific pitch

The electric guitarist has a choice of 120 (6x5x4) unique permutations of string choices for playing these three notes in succession. Although the numbers on the bottom staff all imply the same note and pitch (indicated in the top staff), the construction of the guitar causes every note of the same written pitch to have unique timbral characteristics for every string on which it can be played.

Notes at the same written pitch, played on different positions on different strings have slight differences in sounding pitch that arise from the use of straight and/or parallel frets. The far more noticeable change in timbral character that functions with the intonation of the guitar is the difference in the width and tension of the strings that can produce a note at the same written pitch.[11]

This means that every one of these 120 permutations of string choices for three notes in succession are unique in terms of timbre as a result of intonation and width of string. *Argo*'s frequent lack of string designation is a mechanism in which all of the through composed sections can undergo a multitude of timbral possibilities that are dependent on choices by the performer, not the composer.

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[11] See Röntsch, 2011, p. 62

For a guitarist performing *Argo*, this includes the ability to find recognisable patterns that make the passage physically possible to play and determine which one of those patterns is most suitable for the musical requirements of that passage or the musical work as a whole .

## 2.3.1 Staff notation as a preferred method of providing guidelines to guitarists in *Argo*

In notated classical guitar music, composers and editors will often indicate suggested left- and right-hand fingering, as well as notate which string they intend the performer to play a note on. This approach is one that I prefer because it allows for greater preservation of the melodic and harmonic contour of the sounding pitches, regardless of where they may be played on the guitar. In *Argo* there are key textural, harmonic and contrapuntal procedures that are far more easily recognisable when expressed through staff notation (See Figure 9).

In standard notation the difference in pitch from one note to another on a different position on or between the ledger lines is represented vertically. As discussed earlier, numbers on lines in tablature do not designate notes at specific pitches. This means that the vertical distance between different numbers or lines is not visually analogous to an intervallic difference in pitch (compare Figure 12 to Figure 13).
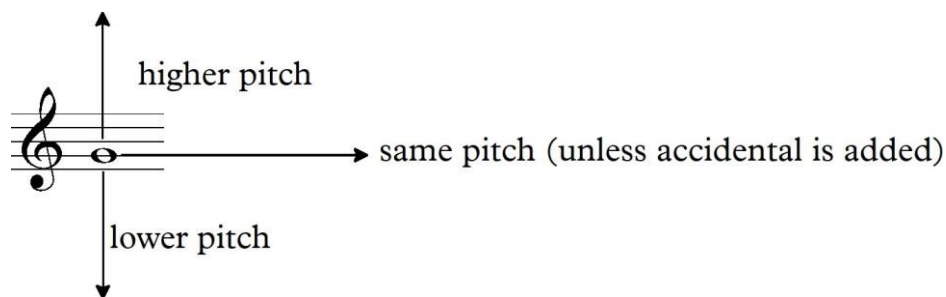


*Figure 12: Vertical representation of pitch in staff notation*
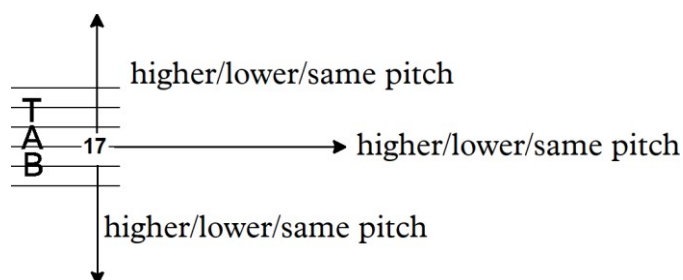


*Figure 13: Vertical representation of pitch in guitar tablature*

Applying the same E major arpeggio from Figure 5 as an example, Figure 14 illustrates different ways of playing it on the fretboard in the bottom staff through tablature. The upper staff indicates how the same string choices would be notated from the tablature of the bottom staff. The arrows on the lower staff indicate the contour of movement for the exact same succession of notes and written pitches.



Figure 14: Different contours of movement between the same succession of notes and pitches



*Figure 15: Argo bar 441-446. A particular interactive texture and timbre is created by having the first guitar and bass guitar play consistently in contrary motion, while frequently overlapping*

## 2.3.2 Distortion

Distortion in an electric guitar signal is a vital part of creating an idiomatic extreme metal guitar timbre. Walser writes that:

> The most important aural sign of heavy metal is the sound of an extremely distorted electric guitar. Anytime this sound is musically dominant, the song is arguably either metal or hard rock; any performance that lacks it cannot be included in the genre … Heavy metal distortion is linked semiotically with other experiences of distortion, but it is only at a particular historical moment that distortion begins to be perceived in terms of power rather than failure, intentional transgression rather than accidental overload - as music rather than noise.
> (Walser, 1993: 41-42).

As can be seen throughout heavy metal scholarship, the timbral characteristics of a distorted electric guitar are fundamental to the heavy metal sound, and thus how this effect is utilised should be considered and critiqued by the composer of heavy metal music.

Within the context of *Argo* virtually no indication or precise instructions are given regarding this timbral consideration. The purpose of this section is to show that this omission was planned and is important information for extreme metal guitarists, which include performers of *Argo*. The ultimate purpose for this omission is to place the guitarists in a position to play their instruments and use their equipment in a way that best suits them and in which they are in full control of how their instruments produce sound within their own framework of artistic practice.

In metal the amplification of guitars is a highly complex and diverse pallet of instrumental colour that the guitarist must navigate through in order to play the instrument. As such it has come to be one of the most identifiable qualities of guitarists in extreme metal.

One prominent element that defines the 'sound' of a metal guitarist in conjunction with other important parts like technique and style, is timbre. The electroacoustic nature of distorted electric guitars presents potentially endless, highly diverse options for timbral expression. A cornerstone of the metal guitar sound, and a defining feature of the genre in general, is distortion (Lilja, 2009: 101). For the purposes of this research, it is only important to know that this is achieved through the manipulation of sound after it is played by the guitarist and before it is amplified. The sound produced through distortion and amplification is therefore much more contingent on the equipment that is used by the guitarist than any physical methods of playing the instrument.

The omission of information in *Argo*, as it relates to guitar tone, is primarily done as a concession to cater to the needs of the individual metal guitarist or band. The two most fundamental subjective decisions that are required to play a distorted electric guitar (as it relates to amplification and mechanic manipulation of sound) is equalisation of the amplifier, commonly quantitatively expressed as the degree of adjustable prominence of Bass (Low), Middle (Mid) and Treble (High) frequencies and the amount of distortion (commonly expressed quantitatively as the amount of 'gain'). There is also an entire omission of what Walser would consider one of the key shapers of distortion, namely the

pickups of the guitar (Walser, 1993: 44). These three elements can account for significant distinguishing qualities that define the unique individuality of famous metal guitarists' sound (see Kahn-Harris's quote below). Kahn-Harris gives an example of specific trends in distortion amongst different styles of extreme metal:

> Different extreme metal sounds are put together in different ways. Some may be based on extremely 'clear', compressed but still heavily distorted sounds, such as the famous 'Florida sound' of death metal, developed in the late 1980s at Morrissound Studios, Tampa, by the producer Scott Burns with bands such as Deicide and Obituary. During the same period Thomas Skogsberg of Sunlight Studios, Stockholm, pioneered a totally different death metal guitar sound with bands such as Entombed and Dismember. The 'Sunlight sound' utilized extremely downtuned guitars with a far 'fuzzier' form of distortion. This sound was characterized by its lack of clarity even to the extent that it can be difficult to hear chord changes. Black metal guitars are generally not downtuned and are often played at a higher register and produced with considerable treble (Kahn-Harris, 2007: 32).

Thus to view distortion as a universally or homogenously understood concept is a mistake. It is a timbre with a considerable amount of subtlety, and acts as the site for individual expression for metal guitarists. As Kahn-Harris' statement makes clear, the amount of distortion (gain) is often style specific in extreme metal.



*Figure 16: Bar 431-433 in Argo. The constant use of an overlapping contrapuntal texture with low strings of the guitars without palm muting presents challenges in audibility when performed with high levels of distortion*

As stated earlier, the tone of a metal guitarist does not become uniquely recognisable by the type of amplifier equalisation, distortion, use of pickup, type of instrument or technique, but in the combination of all these elements and often other additional ones as well. The omission of information like this is perhaps the most important tool for ensuring that all of these highly personal and unique preferences that result from established Metal guitarists' sound can be retained during the performance of *Argo*, should one of those guitarists ever decide to perform it.

The most relevant point from Walser's and Kahn-Harris' quotes about the distorted guitar in extreme metal and metal in general, is that none of them mention a specific tonal, harmonic or rhythmic framework in which it is practiced. The timbre, as a result of external sonic manipulation and string choice (albeit to a lesser extent), is as integral a part of unique stylistic features of an extreme metal band or performer as rhythmic structuring and tonality. If *Argo* is reduced to parameters of pitch, rhythm and timbre, a third of the required instructions in the score are left out of the composed sections. My hope is that the 'signature sounds' of extreme metal bands or performers may somehow be kept, even when they are performing the through composed parts of *Argo*. This section should have shown that I take special precautions in the omission of information regarding timbre. This is not a rule in *Argo*, but a guideline. If, for instance, a section is written under the assumption that only one specific fingering or string would make it possible to play a written part, it would be advisable to communicate it to a performer (See Figure 17, bass guitar in bar 96). There are also sections in *Argo* that presume the use of distortion in the way that they are commonly performed (see Figure 18, first guitar bar 495).



*Figure 17: Bar 95-97 in Argo*

*Figure 18: Bar 491-496 in Argo*

My use of standardised staff notation for the creation of *Argo* is not reducible to any single factor. As chapter 4 will show, there are several sections in *Argo* where pitch, note, rhythm, tempo and duration must be decided on by the guitarists, thus ensuring the likelihood that no two performances can sound the same. The use of staff notation to express elements of indeterminacy are further dependant on the guitar's use of this system rather than tablature. A further benefit of making use of staff notation for guitars is that I can express the music in the aforementioned terms in a precise way and still leave space for subjective additions to the interpretations by deciding on timbre.

The fact that I can leave such timbral spaces open is a significant factor for performers of extreme metal. The possibility of performing the same part on multiple different positions on the fretboard means that there are several timbral differences that can arise from the same sequence of the 'through composed' parts after the introduction of *Argo*, along with the use of different pickups.

However, the most important driver of subjective input that is required by guitarists in *Argo* (especially the electric guitars) is the use of distortion. Detuning the guitar will require compensation with thicker gauge strings; the lowered range and more resonant low register of the guitar requires further compensation in the use of less gain (Kahn-Harris, 2007: 32). Extreme metal bands that are known for using seven-or eight -string guitars, such as Meshuggah, have shown different preferences with balancing the amount of gain and other effects with a growing lower range of the distorted electric guitar. The unique guitar tone (as a construct of a specific combination of technique, instrument, amplifier

and method of generating distortion) of every popular extreme metal guitarist and band shows that timbre can be thought of as an element of their music that equally represents the style of a band along with tonal and rhythmic procedures.

In conceptualising a composition based in the Western Art Music tradition of separation of composer and performer, the approach to the fluid and highly individual use of distortion was a key intellectual interrogation for me. As has been shown throughout this chapter, distortion is a key element to creating a recognisably heavy metal timbre, and therefore a guitarist performing *Argo* would be expected to use it throughout the work, but this is the extent to which I feel comfortable being prescriptive to the performer. By leaving these timbral instructions out, I allow for each guitarist who would perform this work to provide a degree of their own individuality, allowing for different and perhaps interlocking or contradictory approaches to the realisation of this work.

# Chapter 3. Drums: hypermetric rhythmic organisation in *Argo*

## 3.1 Introduction

As with guitars and distortion, there exist rhythmic signifiers played by drummers that position a work within the heavy metal genre. In discussing the rhythmic approach within extreme metal, Kahn-Harris writes:

> Most forms of extreme metal appear to stick to basic 4–4 time, but some forms employ greater rhythmic complexity. Some forms of death metal and grindcore have incorporated unusual time signatures and jazz influences. Whatever the time signature, extreme metal drumming is often exceedingly complex, with drummers often playing intricate patterns using double-bass drums and generally making more use of the whole kit than heavy metal drummers do. Tempo is one of the most transgressive elements of extreme metal. Songs often range between 150 and 250 beats per minute (BPM). Extreme metal bands also pioneered the 'blast beat', drumming at 300–400 BPM and above.
> (Kahn-Harris, 2007: 32-33).

Kahn-Harris identifies 'blast beats' – a drumming technique where the performer uses two pedals on the bass drum to achieve fast 16$^{th}$ note rhythmic patterns – as a stylistic marker of extreme metal musical aesthetic. While some extreme metal bands utilise this technique to create a constant 16$^{th}$ note layer underneath the music (see Figure 19), other bands use this technique to create complex rhythmic patterns which interweave throughout the music.

*Figure 19 example of blast beats in Argo (bar 669-674)*

## 3.2 Identifying a method for representing hypermeter in Meshuggah

My method of rhythmic organisation in *Argo* is primarily influenced by Meshuggah, a Swedish extreme metal band. From the 1990's, Meshuggah started to develop a distinct rhythmic style, mainly characterised by their use of "large-scale odd time signatures, mixed meter, and metric superimposition" (Pieslak, 2007: 220). This rhythmic aesthetic was achieved through the use of simultaneously repeating rhythms of varying lengths that usually overlap on a larger number of bars in a quadruple meter (ibid.).

Meshuggah's specific style of rhythmic and metric organisation is present in a somewhat consistent tonal framework. Pieslak states:

> For the most part, the pitch structure of their music has remained consistent. Based on a single tonal center and framed by the Locrian mode, Meshuggah's music demonstrates a preference for chromaticism or motion by half step with respect to the interval of a minor third above the tonal center. Almost every song from *Chaosphere* and *Nothing* reveals a chromatic filling-in of the first three scale degrees

(Pieslak, 2007: 220).

I view the majority of my rhythmic principles used in *Argo* as direct evolutionary descendants of Meshuggah's. This chapter will show how this is evident in specific sections of *Argo* through a comparison to the music of Meshuggah. The purpose of this comparative analysis is not only to provide examples of similarities in musical surface structures. I am interested in how attempts of notating their music though standardised models of notation can aid in my development of a visual framework in which I can compose stylistically similar music.

The purpose of analysing Pieslak's (2007) transcriptions will be done to identify possible approaches to representing this type of rhythmic organisation through standardised notation. Pieslak's (2007) transcriptions can be viewed as visual distillations of his findings that are at the core of his research's hypothesis regarding hypermeter (see figures 20, 23 and 24). Pieslak defines hypermeter, as it appears in William Rothstein's 1989 *Phrase Rhythm in Tonal Music,* namely: 'the combination of measures on a metrical basis … including both the recurrence of equal-sized measure groups and a definite pattern of alternation between strong and weak measures' (p.12).

Below (Figure 20) is Pieslak's transcription of the first thirty seconds of *Rational Gaze*. Pieslak shows how hypermeter is used by Meshuggah through presenting of the music in a 4/4 time signature, and how it often results in the possibility of using those bars in turn as slower beats that also create larger groupings of 4.

EXAMPLE 2. *"Rational Gaze," Nothing (2002), (0:00–0:29), phrase rhythm.*
*Figure 20: Pieslak's transcription of the first thirty seconds of Rational Gaze, taken from Pieslak (2007:222)*

Pieslak's annotated transcription (Figure 20) shows a common phenomenon in the music of Meshuggah: two rhythmic ostinati of varying lengths are played simultaneously and repeated cyclically to a point where they overlap and start together again. The points where these two rhythmic ostinati overlap are in turn used as a combined ostinato whose repetition affirms a smaller number of bars in a time signature on a larger scale, commonly using bars of unchanging lengths as beats of equal length. The effect this may have to a listener is that the music momentarily suggests compound or combined time signatures, but the more these sections get repeated, the more it becomes clear that the music is in 4/4.

Meshuggah's use of hypermeter, as expressed by Pieslak, is a core principle that I use and expand on in *Argo*. Pieslak's transcriptions, (see Figure 20,23 and 24) highlight a central problem that I encountered throughout my composition of *Argo*, namely the notation of simultaneous ostinati of different lengths, often implying unrelated time signatures or meters.

Pieslak's transcriptions (see Figure 20,23 and 24) fulfil their intended function of visually displaying the varying lengths of the rhythmic ostinati, when they converge and how they are collectively grouped on a hypermetric scale. What they do not show is the most viable method of visually displaying the music as instructions to performers. Semiquavers are

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consistently unequally grouped to suggest a slower beat that can be shared by all of the members of the band.

It is for this reason that his research will only be used as a starting point for explaining the challenges I face when I notated rhythms like this in *Argo*. The aim of this research, after all, is to provide a possible framework for using standardised notation as a tool for the creation of a musical work in extreme metal, rather than a tool for its transcription from a recording.

## 3.3 Altering Pieslak's method as a method for notating hypermeter in *Argo*

The next section will show how I have made alterations to Pieslak's method of rhythmic grouping, using his transcription of the opening of *Rational Gaze* (Figure 20) as a leading example. Pieslak's transcriptions provide interesting possible solutions for the notation of competing asymmetrical rhythmic ostinati that are commonly used by Meshuggah. Providing Pieslak's transcription of *Rational Gaze* (Figure 20) as a set of musical instructions to performers may be problematic, especially during the initial reading of the work. Barlines dividing the different ostinati do not frequently overlap with each other under a shared constant beat.

Assuming the use of two asymmetrically divided barlines is not an option and it is decided that a single time signature is more appropriate, what possibilities are available to the composer/arranger? And what are the consequences as it relates to their performance? These are the questions that this section aims to extend in this light.

It is far more prevalent (especially within the $19^{th}$ – and early $20^{th}$ – century framework of standardised notation) to see a single time signature (or a time signature of the same length) being used as a measurement of units that is possible to quantify all of the other ostinato with different time signatures in some way. "Procession of the Sage: The Sage" from Stravinsky's *Rite of Spring* (1912) is a prototypical example of such an approach to this form of rhythmic organisation (see figures 21 and 22).

The majority of the ostinati in this section of Stravinsky's work do not imply lengths or common metric groupings of 6/4. However, the use of four bars of this time signature allows the presentation of overlapping groupings of ostinati of unequal lengths to be divided into smaller groupings of the same rhythmic units (minims, crotchets, quaver etc.), where 2 and 3 or 3 and 4 are the lowest common denominators, all of which are highly prevalent in this section.

*Figure 21: Section 70, Page 71 from "Procession of the Sage: The Sage" from Rite of Spring*

*Figure 22: Section 70, Page 72 from "Procession of the Sage: The Sage" from Rite of Spring*

Pieslak´s representation of hypermeter can be used as a method for deriving possible time signatures that are capable of containing and representing rhythmic ostinati of varying lengths in a way that is not detached from the musical content of the work. His transcription of *Rational Gaze* (Figure 20) shows two viable options for time signatures,

each one designed to present the rhythmic organisation of one of the ostinati in the clearest way possible.

The bar lines clearly define the rhythmic organisation of the guitars. The ostinato is 25 semiquavers in length, hence the choice of 25/16, that repeats exactly four times. On the fifth repetition another two-note motiv (3 semiquavers in length) is added at the end of the ostinato, hence the appearance of 28/16 at every fifth bar of the guitar and bass parts.

The exact same case can be made for the drums with the use of 4/4. Cymbals play constantly repeating crotchets while the snare drum is played on the third crotchet of every group of four crotchets, clearly implying a simple quadruple meter.

Pieslak's method of notating hypermeter in the context of Meshuggah's musical works can provide a possible solution for deciding which one of the two equally viable time signatures should be used. As mentioned earlier, large-scale repetition of overlapping asymmetrical rhythms will usually affirm the length of one of the time signatures on a larger scale. In the case of Meshuggah's music (see figures 20, 23 and 24), the repetition of these overlapping asymmetrical ostinati usually affirm a simple quadruple hypermeter (Pieslak, 2007: 223).

As with Pieslak's transcriptions of songs like *Rational Gaze* (Figure 20), *Stengah* (Figure 23) and *New Millenium Cyanide Christ* (Figure 24) shows, a key feature for establishing a musical narrative through rhythm in Meshuggah's later albums involves juxtaposing a repeated group of motifs, akin to a 'riff', that briefly varies in length through the addition or subtraction of notes during one instance of its repetition, against a constant pulse or unchanging rhythmic motiv, usually played by another instrument. In the case of Meshuggah's music, this constant pulse almost always revolves around some variation of quadruple meter. The fact that there is only one rhythmic ostinato that remains constant in length means that the hypermetric structure will invariably conform to the length of that ostinato at stages where the rhythmic ostinati overlap.

EXAMPLE 3. *"Stengah," Nothing (2002), (0:16–0:48), phrase rhythm.*

*Figure 23: Pieslak's transcription of ''Stengah'', taken from Pieslak(2007: 223)*



*(b) "New Millenium Cyanide Christ," Chaosphere (1999), (0:00–0:25), phrase rhythm.*

*Figure 24: Pieslak's transcription of ''New Millenium Cyanide Christ'', taken from Pieslak(2007: 224)*

Take Pieslak's transcription of *Rational Gaze* (Figure 20) as an example. Framing the music in the context of 4/4 reveals the resulting quadruple hypermeter that follows its constant and unchanging repetition: 4 groups of 4 bars in length with 4 beats to a bar. The asymmetrical length of the ostinato that is played by the guitars and bass is lengthened by three semiquavers upon every fifth repetition ensures that the emergence of hypermeter will likely be in the context of 4/4.

The reason for this method of rhythmic grouping is, at least in in part, a matter of mathematical logic. Points where the same combination of different ostinati overlap and begin the same cyclical interaction are equal in length. This means that the emergence of hypermeter, constructed by using these overlapping points as hypermeasures, will always consist of hyperbeats that are equal in length (See figures 20, 23 and 24).

The first four repetitions of the rhythmic ostinato can be divided into equal pulses in the following way; by grouping the 25/16 time signature into 5 beats that are 5 semiquavers in length.



*Figure 25: Groupings of 5 semiquavers for "Rational Gaze"*

The fifth repetition of this ostinato is only three semiquavers longer, which eliminates the possibility of dividing the music into consistent groupings of five semiquavers. This is why the emergence of quadruple hypermeter in the repeating ostinati from *Rational Gaze* becomes the logical option because the number of repetitions of the different ostinati can never result in equal groupings of hyperbeats that are nondenominational to 4, even if they are counted in larger or smaller rhythmic groupings than crotchets. This ensures the eventual emergence of quadruple hypermeter and its further establishment or negation in the music that follows it.

The arrows in Figure 26 indicate points whhere it is particularly difficult to estimate where the kick drum lies in relation to the cymbals and snare with the groupings of semiquavers that are used in Pieslak's transcription of *Rational Gaze*. The accurate performance of the passage below relies on the drummer's ability to relate the different ostinati to a shared rhythmic value.
This is usually done by dividing the different rhythms into their smallest shared common denomination of observable rhythmic units, semiquavers in this case.



*Figure 26: Different rhythmic groupings between cymbals and snare, and bass drum in Pieslak' transcription*

My solution to this problem will be to space the duration and beams of notes in accordance with the time signature that is implied by the hypermeter (see Figure 27). The fact that the highly syncopated ostinato of the guitar parts starts at different beats of the 4/4 bar upon

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every cycle of repetition means that the grouping of the same ostinato will likely change every time as well.



*Figure 27: Using dotted phrasing lines to preserve length of guitar and bass guitar parts*

As Figure 27 shows, the constant changing of groupings for the exact same sequence of notes, constantly starting on different positions in an unchanging 4/4-time signature, makes the identification of the rhythmic ostinato on the score a lot more difficult. Knowing this, it is imperative that an additional indication should be added to preserve the visual representation of this rhythmic ostinato. The abovementioned example shows how I would indicate this using dotted brackets so as to avoid confusion with slurred notes.

Pieslak's division of the drumkit into two voices has the advantage of showing the drummer that the cymbals and snare, played with the hands, work in conjunction to create a simple quadruple meter against a highly syncopated rhythm by the guitars and bass that is doubled by the bass drum. The proposed grouping shown in the example gives the opportunity for the drummer to relate the rhythmic ostinato of the guitars and bass to the cymbals and snare in relation to a consistent division of four semiquavers. The tied notes in Pieslak's transcription of the bass drum makes it easy to see that it is doubling the guitar and bass, but the use of tied notes over bar lines can be ambiguous and confusing to the drummer.

A tied note over a bar implies uninterrupted duration that is not applicable to kick drums. As the example below shows, by grouping the cymbals, snare and kick drum into a single voice, the use of tied notes in the kick drums can be eliminated without the inclusion of

rests in the next bar, whilst preserving the exact same rhythmic groupings of semiquavers as the guitar and bass part.



*Figure 28: Grouping drum part into one voice*

I similarly followed this approach in the composition of *Argo* during the moments where the cymbals play constantly on the beats of the stated time signature. In the case of Meshuggah's music, this solution for the use of a single time signature is usually made easy by design. Because one of the ostinati briefly vary in length upon a certain amount of repetitions, the constant groupings of four beats over it becomes the only hypermetric structure that is reflective of the length of one of the possible time signatures.

*Argo* often features prominent repeating rhythmic ideas that the music is constructed around and which reappear throughout the piece in different contexts, akin to a an *Idee Fixe* in the works of Hector Berlioz (1803-1869). The following rhythmic pattern is one of the most prominent recurring ideas that I use as a rhythmic ostinato in the section from my composition that I will be discussing.



*Figure 29: Recurring rhythmic idea in Argo*

Similar to Meshuggah, the guitars play this rhythmic ostinato that is doubled by the kick drum while the cymbals and snare combine in a way that creates a rhythmic ostinato of a different length.

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*Figure 30: Bars 130-135 from Argo*

In *Argo* I frequently divide pentuple and septuple time signatures symmetrically into two equally long beats. I communicate this division visually by not grouping the notes in the bar in a way that implies common asymmetrical metric groupings of quavers (3+4 or 4+3) in 7/8. It could be argued, in light of this, that it would be better to write the same passage in 7/16 because it would present the performer with rhythmic groupings of 4 and 3 semiquavers that are common to the meter as follows:



*Figure 31 :Different time signature for same section*

Choosing between these two options is not simply a matter of efficient display. In Western Art Music meter is derived from time signatures through dividing them into multiple beats with varying hierarchal values of emphasis. This means that the choice between 7/8 and 7/16 will communicate different instructions for metric emphasis to the performer that can have noticeable effects in the articulation of the bass' solo in this part.



*Figure 32: Different metric emphasis betweeen strong and weak beats*

As the example above shows, designating a time signature of 7/16 to present the rhythms in more recognizable groupings of 4 and 3 semiquavers will have a significantly different effect in its implied metric emphasis between strong and weak beats.

Similar to the case of *Rational Gaze*, the drums imply a quadruple meter (compound quadruple meter in this case) by playing dotted quavers consistently on the cymbals in groups of four beats with the snare falling on every third beat. This means that the music can be similarly expressed in a quadruple meter to show this ostinato created by the combination of cymbals and snare drum as follows:



*Figure 33: Same section in a compound quadruple meter*

The three options that I have presented for framing the music in different time signatures indicate where the usefulness of deciding on a single time signature that displays the hypermetric structure of the overlapping rhythmic ostinati becomes more complicated when all of them remain constant in length. Taking the section from *Argo* (bars 130-135) as an example, Pieslak's method of rhythmic arrangement can apply to all 4 of the time signatures in the table below. These four different time signatures create hypermeters with unique proportions between hypermeasures, hyperbeats (calculated by using the number of bars as a measurement for the number of beats), and beats in a bar that are simultaneously implied in the same span of time.

| Hypermeasures in same span of time | Hyperbeats | Beats | Time signature |
|---|---|---|---|
|  |  |  |  |

| 1 | 7 | 4 | 12/16 (compound quadruple meter) |
|---|---|---|---|
| 2 | 3 | 7 | 7/8 |
| 3 | 2 | 7 | 7/4 |
| 4 | 4 | 7 | 21/16 (compound septuple meter) |

*Table 1: Hypermeter in bars 130-135 in Argo*

All of these options are valid because none of the time signatures ever vary in length. This means that all of them can be used as reference points for constant, unchanging pulses. All four of these time signatures will also imply hyperbeats at different tempi that are not relatable through half and double tempo because the proportional relationship between hypermeasures, hyperbeats and beats are both unique and nondenominational. This is why the only possible hypermeasure in the first 30 seconds of *Rational Gaze* is some denomination of simple quadruple meter.

| Hypermeasures in same span of time | Hyperbeats | Beats | Time signature |
|---|---|---|---|
| 2 | 2 | 2 | 4/2 |
| 8 | 8 | 8 | 2/4 |
| 4 | 4 | 4 | 4/4 |

*Table 2: Hypermeter in opening of 'Rational Gaze'*

Although none of the rhythmic ostinati in the example from my composition imply a triple hypermeter, consisting of hypermetric units of 2 bars in 7/4, I take this into account when constructing hypermeter because I know that I have a new option for presenting the same rhythmic ostinati at a later stage under a different implied hypermeter, provided I introduce another rhythmic ostinato that implies 7/4 over the exact same material. I prepare the listener for this earlier by introducing this rhythmic idea for the first time with crotchets

that are constantly played on the cymbals and that overlap with the first beat of 7/8 after every 2 bars, thus also implying 7/4.



*Figure 34: Drum part from same section in 7/4*

Another form of preparation I take is doubling of the most important rhythmic ostinato with the guitars, in this case one of the main recurring ideas (Figure 34). The doubled guitars playing this rhythm on the lowest open string creates a texture that is common to Djent with uncommon hypermetric structures in the background. This provides me with the opportunity to use one of the guitars to include a rhythmic ostinato that implies 7/4 at a later stage that can easily take up the most prominence if it is played at a significantly higher range than all of the other ostinato.

The same is true for an implied simple quadruple hypermeter using 21/16. The implication of the two possible compound time signatures is primarily achieved by the cymbals that play a constant beat in groupings of dotted quavers. These groups of dotted quavers can be used to imply a compound quadruple meter or compound septuple meter simply by changing at which time the snare is played together with the cymbals. This is particularly true if it falls consistently on the same weak beats that are common to the meter of the time signatures, as the examples show below.



*Figure 35: Same drum part with different implied rhythmic groupings*

The reintroduction of rhythmic themes at the exact same tempo in constantly new hypermetric structures is an important tool I use for the reintroduction of prominent rhythmic ideas in new contexts. The possibility of multiple hypermeters in the same span of time means that I can present the same rhythmic idea in a new time signature and metre that does not imply double- or half-tempo without having to change the tempo at any time or change the amount of beats in a bar through the use of tuplets.

## 3.4 Conclusion

Pieslak's notion of hypermeter, as represented in the abovementioned examples, is representative of how I think about rhythm in my music through the lens of Meshuggah's works. His article shows how graphically representing Meshuggah's use of quadruple hypermeter can be a useful tool for understanding the scope of their unique contribution to the rhythmic discourse of metal. However, the fact that there is such a central emphasis on quadruple hypermeter in the music of Meshuggah, and by extension Pieslak's transcriptions, is limiting as a model for expressing my use of hypermeter. Meshuggah's use of quadruple hypermeter was an ideological starting point for my composition of a musical work in the style of extreme metal. Similar to the earlier example from Stravinsky's *Rite of Spring*, my choice of notating the music in *Argo* in the context of a single time signature or bar length would be to resort to the time signature that affirms the hypermetric structure of the piece. This provides the composer with an option for the use of a single time signature that can quantify all of the ostinati under a constant pulse and show smaller, more readily accessible, points of rhythmic convergence on a larger formal scale.

# Chapter 4. Indeterminacy

## 4.1 Introduction

Indeterminacy is present in a multitude of different ways across almost all forms of music. The indeterminacy that this research will discuss relates to the use of notation in Western Art Music and how these techniques have been utilised within *Argo.* The use of indeterminate notation in the latter half of the 20th century was usually based in artistic ideologies that sought to close the distance between composer and performer.

> Indeterminacy arises when the composer makes a choice to relinquish control of one or more elements of the composition. These elements could include pitch, rhythm, form, instrumentation, volume, articulation and timbre. Indeterminacy can happen as part of the compositional process or during the performance. Indeterminacy during the compositional process often takes the form of chance operations, such as flipping coins or tossing dice (Cross, 2017: 12).

As Cross' abovementioned quote shows, indeterminacy is primarily governed by the omission of certain musical parameters. This speaks to a possible methodology, but not what composers would regard as the aesthetic ramifications of indeterminacy. Morton Feldman (1926 - 1987) describes some of the aesthetic and ideological underpinnings behind his use of indeterminacy in *Projection#2* (1951):

> My desire here was not to 'compose,' but to project sounds into time, free from a compositional rhetoric that had no place here. In order not to involve the performer (i.e. myself) in memory (relationships), and because the sounds no longer had an inherent symbolic shape, I allowed for indeterminacies in regard to pitch. In the Projections only register (high, middle or low), time values and dynamics (soft throughout) were designated (Morton Feldman, as quoted in De Bièvre, 2012: 25).

There was always a degree of change and inconsistency within the performance of works in the Western Art Music canon, but this change was usually measured in terms of musicianship by the performer (Behrman, 1965: 58). It was only in the latter half of the 20th century in Western Art Music that the extent of change became governed and exploited by composers through indeterminate notation in favour of standardised notation (Homiski, 2010: 3).

There were two primary schools of composition or groups of composers from the 20th century where the first widespread use of indeterminate notation began, namely the New York School, primarily drawing initial inspiration from Cage's works and the visual arts (De Bièvre, 2012: 13); and a group of composers from Darmstadt, originating from the musical aesthetics of serialism, mathematics, German philosophy and poetry (De Bièvre, 2012: 14).

> It is striking that there is such a huge difference between the music resulting from the experiments with indeterminacy of Boulez, Stockhausen or Pousseur (to name but the three main European Darmstadt protagonists) and those of the New York School. There is a strong aesthetic similarity between the works of the European composers. However mobile, their musical content is heavily indebted to serialism. And it takes but one look at the scores to get a fair idea of how the music will sound. The indeterminate works of Brown, Feldman, Cage and later Wolff on the other hand, are very different from one another, imbued with personal aesthetics rather than with musical heritage
> (De Bièvre, 2012: 25).

In relocating this discussion towards my own compositional approach, there is not any standard model of indeterminate notation that I make use of in *Argo* that would be fully attributable to the work of any particular composer or school of composition. There are, however, some historical roots on which my notational methodology is based. What should be clear from the use of specific examples of works and composers, is that my alterations of staff notation are nothing new; they are based in a tradition of 20th -century Western Art Music, and my approach to indeterminacy within this work is by no means as experimental as that utilised by composers such as John Cage or Morton Feldman. The larger ideals of a loss of ego or self in the process of composition, or the creation of 'open form' in a musical work do not apply to *Argo*.

A reading of *Argo* would indicate a use of indeterminacy that falls somewhere in a spectrum between these two groups of composers. The instructions are consistent and increasingly specified within the standard parameters of staff notation, making a reading of the instructions far less subjective than those of the New York School. However, the extent to which I instruct varying amounts of adherence to given parameters (see subsection below on improvisation) makes an estimation of what the ensemble might sound like when playing together near impossible.

*Argo*'s indeterminate sections follow a somewhat opposite approach, requiring at least one standard symbolisation of staff notation at a time. As Figures 36-32 show, there is the gradual addition of standardised symbols in the introduction of *Argo* until all of them are present as a combined unit shortly after the start of Section E[12].

The extent to which *Argo* incorporated indeterminacy is done in a way where the burden of nuanced understanding of $20^{th}$ and $21^{st}$ -century aleatoric composition and indeterminate notation is not required by extreme metal performers. The intention of the composer in this case was to avoid any further alienation by extreme metal performers, given that the ability to proficiently read and perform from a score through standard notation is already a rarity. The extent to which *Argo* makes use of indeterminacy is relatively structured, and does not fall into the general aesthetic of 'open form' composition of the New York school.

> ... the first truly "open form" work, titled "Twenty Five Pages" completed in June 1953, and decidedly "controlled aleatory" - in that the content was totally determined but the form left "open". (How do you define "'open' formal structures"? If they are "open", how are they "formal structures"?? - "open structures are not "formal structures". - "open-form" is not a "formal structure") - the structure is a result of the "open" structural potential. Your ("aleatoric" or "improvisatory passages", "within a larger predetermined formal structure") is the antithesis of "open formal structure". What you are referring to is not "open formal structure" but a traditional "safe" control of structure with "aleatoric" interior flexibility - sometimes/frequently defined as "Jazz" aesthetic, and not terribly, wildly "innovative" (Earle Brown, as quoted in De Bièvre, 2012: 11).

*Argo* most likely falls within Brown's notion of "a traditional "safe" control of structure with "aleatoric" interior flexibility"(De Bièvre, 2012: 11). The sections are to be performed concurrently and the extent to which improvisation can occur is communicated within a system of standardised symbolism. Performers are free to create a measure of change and inconsistency within a predetermined, linear and unchanging set of instructions.

## 4.2 Indeterminacy in *Argo*

As stated earlier in the theoretical framework, the majority of *Argo* is composed with standardised models of notation, with some alterations in the introduction (See Figures

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[12] It is important to note that none of these parameters include a specific instructions regarding timbre like distortion.

36-38) and smaller sections in the middle of the work (See figure 33) to allow for what could be described as an aleatoric approach. The type of aleatoric composition that I utilise can be summarised in Griffith's abovementioned definition of indeterminate notation, that is made in the Grove definition of aleatoric composition.

The through-composed sections of *Argo* are expressed through a combined paradigm of time signatures, beamed stems that represent duration and rhythm (with the exception of minims and rests), tempo indications, and the tonal representation of notes and pitch (see chapter 2).[13]

The way in which the indeterminate sections of *Argo* are created from standard models of staff notation is essentially a two-step process. The first step to creating indeterminacy in the aforementioned sections of *Argo* is to deprive the score of one or more of the previously mentioned parameters. The second step is the inclusion of additional information (primarily in the form of written text) to aid the performer in navigating the lack of commonly expected instructions in the framework of standardised notation.

The general approach that is taken to use indeterminate notation to create the form of the introduction, through the gradual addition of standardised symbology until all of the abovementioned parameters are finally present shortly after section E.

In sections A-C (see Figure 36 and 37) the only parameters that are given to performers are a set of notes akin to a scale. The duration of these sections is decided on by a single performer that is specified in the score (see next subsection for an explanation of how this is instructed in the score). Durations and rhythms are only implied with the use of solid or clear noteheads on a single line with symbols that are used for expressing articulation of notes (accents and tremolo). This furthers the implication that these solid or hollow dots should be interpreted in some rhythmic framework, along with their inconsistent proximity from each other.

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[13] I do not make use of key signatures in *Argo* because it rarely makes use of diatonic harmony or tonality that would be aided through a representation in a specific key.

Section D introduces parameters of rhythm and duration for the first time (See Figure 37). A time signature is also introduced for the first time, the tempo of which is determined by the drummer. Rhythmically beamed notes and rests are also provided for the first time.

The opening of section E introduces exact tempo indications for the first time (see metronome markings in Figure 38) and gradually instructs performers to play the sections exactly as they are written[14], thereby establishing a reading of the rest of the work in a framework of standardised notation. From section D the drummer is given a single line to perform a rhythm at a specified tempo anywhere on the drumkit, a procedure that will later be used for the guitars in section F (see Figure 39).

Section F produces a new variation of the omission of commonly expected parameters (see Figure 39). All of the tonal information regarding note and pitch is left out by the guitars, while remaining in a specific rhythmic and durational framework (time signature, beamed noteheads and rests).

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[14] Note that the introduction of the term 'play as written' is produced without any specified, or even implied, parameters of timbre. This omission is planned and highly significant. See *Timbral Freedom* from Chapter 2

*Figure 36: Section A and B from Argo*

*Figure 37: Section C and D from Argo*

*Figure 38: Opening of Section E from Argo*

*Figure 39: Opening of Section F from Argo*

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## 4.3 Improvisation

Text in a score can create both a more specific instruction, and a wider ambiguous interpretation of a musical work. The indeterminate sections of *Argo* feature a simultaneous usage of text in both forms. The use of graphic symbols for the notation of scores in Western Art Music is often not enough to provide the performer with adequate context to interpret the music according to the composer's vision. In this sense, text can be a highly important tool for potentially filling this void in meaning by providing a more comprehensive and detailed image of how the music should sound[15].

As stated earlier, text is used as a method for providing comprehensive instructions as a substitute to the omission of commonly expected parameters of staff notation in *Argo*. The use of text that ultimately ensures change and inconsistency between different performances is with the usage of the term 'improvise'.

The following quote is taken from the performance instructions that precede the score of *Argo*. It indicates how improvisation will ensure a measure of change in *Argo* and how it is achieved and contextualised.

**Improvisation and preparation (Sections A - F)**

*Other objects that always appear with the term 'improvisation' (**'Cue'**)*

It is important to note that objects in sections A-F do not contain elements that express exact duration. Objects in this work that instruct improvisation will always require a specific player to lead the ensemble and determine the duration of that object. All forms of instructions to improvise are accompanied with indications of which player is responsible for the duration of every object in these sections. These instructions are also accompanied by information about which player in the ensemble should be signalled to take over the role of determining the length of the next object with the '**Cue**' instruction, once the player who is responsible for the length of the current object decides to move to the next object.

*Definition and Interpretation*

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[15] See Mahler's written instructions in the scores of his symphonies. Also see Berlioz's *Symhonie Fantastique* (1830) and *Harold en Italie* (1832) for a different approach, whereby text is used to place the music in a descriptive extra-musical narrative that should inform the interpretation of the score.

Performers are encouraged to interpret the term 'Improvise' very liberally in their individual parts. Here are two possible examples of how the term may be used for the preparation, rehearsal and performance of sections A-F.

1.     'Improvisation' can be interpreted as a form of instantaneous composition that occurs simultaneously with the act of performance. Improvisation, especially in ensembles, is often based on some shared common framework. In the case of this composition, this common framework should be the material of every object that specifies musical parameters. Invariably, some form of preparation will be necessary for the material to be improvised in the given confines of note, pitch, rhythm and tempo of every object in these sections. I place the extent of this preparation solely in the hands of the performers.

2.     This means that objects that ask for improvisation may also be fully prepared before a performance to such an extent that there is no real improvisation per se. If players in the ensemble feel more comfortable creating, rehearsing and performing a through-composed version of sections A-F, they are encouraged to do so.

*Difference between 'improvise' and 'freely improvise'*

The term 'freely improvise' can be read as an allusion to the practice of free improvisation that may be familiar to performers who are well-versed in modern Jazz and experimental Western Art Music. However, this is not how the primary difference between these two terms should be viewed for the purposes of performing parts in this score. The term 'freely', as a description of improvisation, should primarily be read as an invitation to use the material that the performer is asked to improvise over (rhythm, notes and pitch) very liberally through the addition of musical content that is not directly specified in that object. As such, it should fundamentally be understood in terms of the extent to which a performer should adhere to the proposed framework of given rhythms, notes or pitches, and not as specific instructions of how organised/disorganised I want the music to sound.
(Argo, 2019: 2-3, written by Marco Nachenius)

The combination of specific written instructions to navigate the performers of *Argo* through the omission of certain elements, along with instructions to improvise those sections, should indicate that their performance is not a free-for-all approach. The freedom that is given for improvisation or creation of music is always done within a specific framework that was decided on by me.

## 4.4 Conclusion

The use of indeterminate notation in *Argo* clearly detracts from the usage of staff notation in the 19th century. The underlying set of expectations for the interpretation of *Argo* falls within

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the artistic practice of the 19th century. The only inherent requirement for the performance of this work, besides technical capabilities and possession of the instrument, is nothing more than the ability to read standardised notation. I contend that the reliance on a score for performers of extreme metal, or extreme metal groups for the performance of a large-scale work from a non-recorded source is a rarity. Providing a specified scope of interpretation of such parts in the score would create a further interpretational burden to performers of extreme metal that are not familiar with 20th century Western Art Music repertoire, or have not frequently performed it.

In this sense, it could be argued that *Argo* is a musical work that is based in the 19th century artistic practice of making use of notation as a medium for creating and performing a musical work. While the use of standardised symbolism differs in *Argo* from 19th century examples, a consensus-based understanding between the composer and performance regarding standardised notation is required in order to perform the work. Furthermore, there is the underlying assumption that *Argo*'s musical instructions are specified to such an extent that the inclusion of the composer is not necessary for the performance of a musical work. I sought to make use of a form of aleatoric composition that did not require performers of extreme knowledge to have this knowledge.

# Chapter 5. Conclusion

There is not a single section in *Argo* where creative decisions by the performers are not required in order to interpret the score. This means that, by design, there are no sections in a performance of *Argo* that can be said to be entirely the creative vision of the composer, with the performers acting as neutral interpreters. This stems from the use of standardised notation as an aesthetic tool for composition. With the use of indeterminate notation, performers are able to improvise or compose music of their own, within my specified framework, of which the length could be just as long, if not longer, than the through composed parts of *Argo*.

The individual creative voices of performers are required to permeate through the through composed parts. Ensuring the opening of such a space for performers is achieved through specifying all the tonal, rhythmic, harmonic and metric parameters of *Argo*'s parts through standardised staff notation, while leaving out the musical instructions regarding timbre. Drummers are only given instructions for the type of components. The specific size and type of the toms, snare kick drums and cymbals contribute largely (in their combination) to timbral elements that may be unique to specific extreme metal drummers. The inclusion of ghost notes is also welcomed in the through composed parts. Guitars frequently have the option to play their parts anywhere on the neck of the guitar, with any pickup configuration, amplifier and pedal.

The use of standardised staff notation or indeterminate notation shows that composers have not only the ability to compose what they want, but also compose what they do not want with an equal level of forethought, preparation and clarity. The ability to leave information out is one of the separating factors that distinguishes standardised notation from audio recording as a creative medium.

It is unlikely that the score will ever reassert its dominance as a creative medium in 21st century recording technology and communication technologies. The use of audio recording for the creation of autonomous musical works, combined with the various networks of online distribution, makes it one of the most effective and diverse methods of preserving and replicating musical works in the 21st century.

Standard notation in Western Art music during the 19th and early 20th century and audio recording in 21st -century extreme metal are representative of idealised mediums for composition at a specific historical period. The change from one to the other was not motivated by purely musical considerations. New technology was perhaps the single largest driver that broke the appearance of any written text in the creation of musical works in metal and Western Art Music from the second half of the 20th century.

It is the finding of this research that standardised notation has a specific set of aesthetic attributes that are not present in the same way in audio recording. As such, it can be regarded as a creative tool that may be used by a composer to govern the consistency or change between different performances of the same work.

The purpose of this research was to produce a practice-led approach to generating new knowledge about the use of standardised notation for the creation of a large-scale work in extreme metal. Even if the research has achieved this, there are even more questions that need to be answered to probe the validity of the claims in this research. These larger questions could be regarded as potential new avenues for this kind of artistic research. For instance, probing the use of standardised notation for the performance of a composed musical work like *Argo* by established extreme metal performers- or bands, could provide more definitive answers about the usefulness, effectivity and aesthetic merits of the practice-led approach of this dissertation.

Additionally, this thesis has highlighted intellectual and creative challenges posed to the composer of extreme metal. Questions concerning timbre, distortion, aleatoricism form part of the central considerations not only of this research, but of the would-be extreme metal composer. Of course the navigations of these questions will differ depending on the composer, but this does not negate from the fact that the composer must place these considerations into the creative nexus of composition for this genre. As the study of popular music continues to grow within academic institutions, it seems fitting within the landscape of popular music scholarship and heavy metal discourse that questions not only of research, but composition, are engaged with, and this dissertation aims to provide scope and frameworks for such interrogations.

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