Dynamic Hybridisation: Methods of Integration of Electroacoustic and Popular Music

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A thesis submitted in partial fulfilment of the requirements
for the degree of Doctor of Philosophy

University of Sheffield
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October 2024

Table of Contents

Word Count, excluding footnotes, appendix, references and discography lists: 39,971 words

List of Figures

List of Tables

List of Compositions

None of This is My Fault (2021)	Stereo	3 min 54 s
Bricks and Sticks (2021)	Stereo	6 min 10 s
Young Sirs (2022)	Stereo	7 min 1 s
I'll Wait (2022)	Stereo	6 min 47 s
Myself (2022)	Quadraphonic	7 min 1 s
As Heavy as a Man (2023)	Octophonic	10 min 48 s
Deception (2024)	Quadraphonic	7 min 15 s

Acknowledgements

I would like to thank my primary supervisor, Dr Adam Stanović, for his invaluable guidance and constant encouragement throughout the development of this doctoral project. I am also grateful to Professor Adrian Moore, my second supervisor, for his insights and thoughtful comments on both the written thesis and the portfolio of compositions. My appreciation extends to the academic and professional community of the Department of Music at the University of Sheffield for the technical and emotional support they provided throughout my PhD journey.

I extend my heartfelt thanks to my wife, Tanya, my mother, Carmen, and my sister, Carmen Gloria, for their unconditional love and support. I am forever grateful to have you in my life, and my love goes eternally to all of you. Special thanks also to our lovely cat, Adele, for bringing us joy and coping with us throughout this adventure. I am deeply thankful to my wonderful friends for always being there for me and providing extra motivation. My love goes to my friends in Chile and across the Americas (Felipe, Efraín, Sari, Camila, Andrés, Nicole, Ricardo, Pablo, Gustavo, Carolina, Gabriel, María Paz, Felipe, Constanza, and Tonchy, Marta, and Rafael) and to my friends in Europe (Claudia, Julia, Ciara, Carola and Nat, Marcia and Devon, Victoria, Nick, Sally, Tracy, Eladio and Roxana, Nathan, Lorenzo, and Ross).

Finally, I would like to thank the National Agency for Research and Development of Chile (ANID) and their Scholarship Program BECAS CHILE DE DOCTORADO EN EL EXTRANJERO/2020 - 72210153 for funding my PhD.

Abstract

In recent years, electroacoustic composers have become increasingly interested in the creative techniques, materials, and processes commonly employed by other traditions of music, including popular music. Conversely, popular music practitioners have incorporated technologies used in electroacoustic music into the creation and performance of their works since the 1960s. It could be argued, then, that with the widespread availability of technological developments, differentiating between pieces of electroacoustic and popular music has become increasingly difficult (Emmerson & Smalley, 2001). These trends raise important questions about genre definitions, the blurred lines that divide genres, and the creation of hybrid works.

The concept of hybridisation has recently gained prominence amongst practitioners and researchers alike (Bentall, 2016; Friar, 2017; Gagen, 2019; Martí, 2002; Mayall, 2016; Ratcliffe, 2011; Waters, 2000). However, the compositional methods behind hybrid works remain underexplored. Although some attempts have been made (Friar, 2017; Mayall, 2016), there is still a predominance of rigid approaches and a lack of acknowledgement of the interaction amongst the diverse musical parameters involved in the hybridisation process. Consequently, this research proposes a series of compositional methods for the creation of hybrid works, nestled under the broad term 'dynamic hybridisation'. Through a practice-led methodology combining theoretical inquiry and a portfolio of original compositions, this research investigates the challenges and opportunities arising from integrating these distinct musical practices. It focuses on four musical parameters—form, rhythm, voice, and space and performance—how these are approached in electroacoustic and popular traditions, and how they can be effectively hybridised.

Hence, the main contribution of this work is the proposal of a flexible approach to genre hybridisation. The dynamic hybridisation method, along with the accompanying portfolio, offers both a theoretical framework and practical examples for creating music that bridges the gap between electroacoustic and popular traditions, providing a foundation for further exploration in hybrid musical forms.

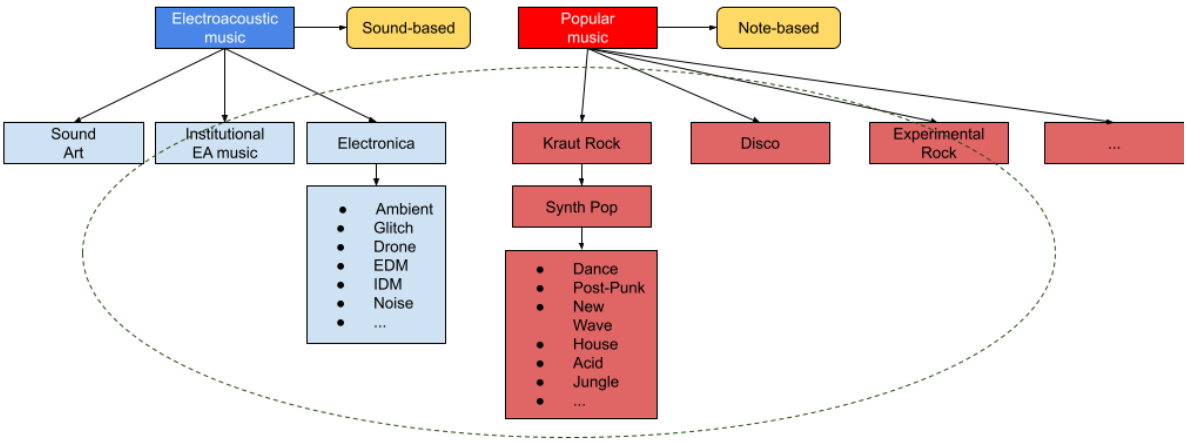
Introduction

In recent years, electroacoustic composers have increasingly explored creative techniques, materials, and processes from other musical traditions. Electroacoustic music is said to have moved from the blend between the traditions of musique concrète and elektronische Musik to a proliferation of different genres and styles (Hugill, 2016). This proliferation has often resulted from practitioners adopting approaches external to electroacoustic practices, enabling the fusion of elements from various musical traditions. These processes of integration, now inherent to the production of music, have also been described as part of the 'post-acousmatic practice' by Adkins et al. (2016). Moreover, several other composers and researchers (Bentall, 2016; Burke, 2006; Friar, 2017; Martí, 2002; Waters, 2000) have claimed that these approaches are enlightening because they provide new tools and methods for creation and expansion of compositional boundaries.

The trend of cross-fertilisation is not limited to electroacoustic music; popular music has also developed its own experimental approaches. Practitioners have shown different approaches to experimentalism, beginning with the use of shared technologies during the second half of the 1960s, the widespread adoption of said developments, and the quest of new sonorities during the next decades (Collins et al., 2013; Manning, 2013). This has made possible the emergence of several genres that present similar characteristics to categories of electroacoustic music, making the task of genre definitions and categorisation increasingly difficult. The diagram in Figure 1 attempts to describe this difficulty and to differentiate the genres associated with electroacoustic and popular music.

Figure 1

Categories and Commonalities between the Genres that Comprise Electroacoustic and Popular Music



As is apparent from the discussion and diagram above, there are clear commonalities between electroacoustic and popular forms of music. It would be quite incorrect, however, to suggest that there are no differences whatsoever between the two. One of the main differences is the historic distinction between the two practices: electroacoustic music has been described as 'sound-based'

(Landy, 2007) and popular music (as part of the instrumental tradition) as 'note-based'[1] (Smalley, 1997). Furthermore, the methods employed by composers working within these traditions/areas are often vastly different; while popular music practitioners mostly use predetermined structural plans, or ideas, and a reduced number of elements and specific functions for those elements (A. F. Moore, 2012), the methods used by electroacoustic musicians are characterised by 'extreme heterogeneity' (A. Moore et al., 2013). Besides this, there is a widespread use of the voice in popular music, most of the time as the central element of works, with associated lyrics and melodies. In the case of electroacoustic music, there are numerous works that include the voice but relatively few that utilise this element in the context of the melodic song.

This doctoral research shall then explore the complex terrain in which works of hybridisation exist, particularly between electroacoustic and popular music. It will reflect on how and where these forms of music differ, describe methods of hybridisation found in the existing literature, and, considering this central to the practicalities of creating hybridised works, the finished doctoral thesis shall address the following research questions:

Research Questions

- What are the key elements of electroacoustic and popular music that might be subjected to some form of hybridisation?
- How have other practitioners created hybrid works, and what may we learn from their approaches?
- What existing methods can be applied to the hybridisation of electroacoustic and popular music, and are they appropriate?
- How can bespoke methods be developed to create hybrid works that combine elements of these musical traditions?

[1] Smalley (1997) identifies the musical note as the base of instrumental music.

Methodology

This research follows a practice-led methodology, where the creative process of hybrid music composition serves both as the primary research method and the subject of investigation. The study combines theoretical inquiry, reflective practice, and artistic experimentation to explore new compositional approaches for creating hybrid works that integrate electroacoustic and popular music.

This project proposes a novel method of hybridisation, introduced theoretically in Chapter 3 and explored in practice through compositions in Chapters 4 to 7. Each of these four chapters will focus on a distinct musical parameter. While many parameters could be discussed, those selected reflect the author's compositional voice and practice.

By integrating literature review, creative practice, and critical analysis, this methodology allows for the production of new knowledge through the act of composition. The portfolio of works not only exemplifies the research findings but also serves as a primary site of inquiry, demonstrating the possibilities of hybrid forms that blend electroacoustic and popular music traditions. Consequently, the written thesis complements the portfolio, offering a structured reflection on the research process and positioning the creative works within the broader academic discourse.

Overview

In particular, this thesis is structured in the following manner:

Chapter 1 examines the characteristics of electroacoustic and popular music. It begins with a close examination of genre definitions to establish working definitions for both categories before moving on to addressing the categorisation and interpretation of music from aesthetic and semiological perspectives.

Subsequently, **Chapter 2** deals with the hybridisation of genres in music, highlighting notable examples of hybridisation, where electroacoustic musicians incorporate elements from popular music, and vice versa. Additionally, it presents an outline of methods of hybridisation found in the current research literature, illustrating the practical implications of integrating genres. These methods are analysed to assess their suitability for integrating electroacoustic and popular music.

Chapter 3 introduces a novel method for hybridising music genres called 'dynamic hybridisation'. This method—and focus of this research—is explained and further divided into two main categories: dynamic hybridisation by juxtaposition, and sequential dynamic hybridisation. These categories are expanded upon with examples from the portfolio of compositions.

Chapter 4 presents the first focus of dynamic hybridisation: form. This focus is defined and contextualised within both electroacoustic and popular traditions, and outlining its role in the context of the method of dynamic hybridisation. **Chapters 5**, **6**, and **7** follow a similar structure, focusing on rhythm, voice, and space and performance, respectively.

The final chapter offers a summary, draws conclusions, and provides a critical examination of the compositional methods explored throughout this doctoral project. It links the practical outcomes to relevant theoretical frameworks and suggests potential future developments. This section also demonstrates the contributions of both the compositions and theoretical research to the field.

1 Genre

1.1 Introduction

Discussions around the concept of genre in music bear difficulties that need to be addressed. It could even be argued that the concept has been somewhat overlooked in some scholarly circles due to the complexities associated with the task of defining musical genres (Fabbri, 1981). One of the reasons for this difficulty is that, in this field, genres are more challenging to theorise because of the nature of musical interpretations (Holt, 2007). Nevertheless, several authors have attempted to establish definitions around the concept of genre in music and have also expanded the vocabulary in order to create a better understanding around this topic.

In the case of electroacoustic and popular music, the line that divides both genres is a blurry one, and it could be argued that, with current technological developments and their wide availability, it has become increasingly difficult to differentiate between pieces of electroacoustic music and popular music (Emmerson & Smalley, 2001). Besides that, both music categories[2] can be considered metagenres[3] (Demers, 2010; Shuker, 2017) because they comprise several other genres. In particular, electroacoustic music has developed in such a way that the term currently refers to a wide array of diverse practices. Along these lines, Joanna Demers (2010) divides the metagenre of electroacoustic music into three other metagenres: institutional electroacoustic music, electronica, and sound art. These three categories are so extensive and convoluted that Demers claims that the only element that is ubiquitous amongst them is the "subscription to the ideal of experimentalism" (p. 139). Moreover, Demers states that in the case of Electronica, no "specific formal or stylistic parameters govern what counts as electronica; the one common factor seems to be a sense among artists and listeners that electronica is ideologically distinct from both mainstream culture and institutional electronic music" (p. 167–168). These two short descriptions point towards the question of genre definitions, the categorisation of music, and the blurring lines that divide genres in the modern practice of music. It seems that, for Demers, genre definitions are not particularly linked to a list of parameters, but to subjective readings, such as 'ideals' or 'senses'. In that regard, genres could be closely related to the concepts of meaning and interpretation.

1.2 Definitions of Genre

Franco Fabbri is a musician and musicologist that has devoted his research to the study of genre theory and popular music. Many other scholars (Marino, 2015; A. F. Moore, 2001; Shuker, 2017; Tagg, 2013) have referenced his work when it comes to establishing a definition of a musical genre. Understanding the difficulty of the task (and even arguing that the usage of specific genre terminology depends on the language used), Fabbri defines a musical genre as "a set of musical events, real or possible, whose course is regulated by a definite arrangement of socially accepted rules" (Fabbri, 1982, p. 136). In this sense, genres are context-specific and depend on the

[2] In this thesis, the terms genre, category, class, type and kind will be used interchangeably when referring to music practice. This is consistent with the usage given by Brackett (2002), Holt (2007), A. F. Moore (2001), and Walton (1970), amongst others.

[3] Metagenre is defined as a genre that contains multiple genres (Demers, 2010; Shuker 2017).

conventions used by a set of individuals. They are not static, but change according to the context and, as a consequence, they evolve over time. This idea was also the foundation of the definition of genre coined by Gabriele Marino (2015), that states that a musical genre is "a linguistic label (a name) assigned to a set of recognizable musical features (a musical form; or, in other words, a 'musical style', reflecting and proposing a musical aesthetics), carrying socio-cultural connotations (a 'socio-cultural style', reflecting and proposing a system of values)" (p. 244). Here, Marino makes a slight variation from Fabbri's 'set of musical events' and 'socially accepted rules' to his 'set of recognizable musical features' and 'socio-cultural connotations', but also adds the idea that a genre is a 'linguistic label' that, in turn, is linked to some kind of social agreement and to the pursuit of categorisation of works.

Fabian Holt (2007) defines a musical genre as "a type of category that refers to a particular kind of music within a distinctive cultural web of production, circulation, and signification" (p. 2). The author goes further stating that genres are present in the practices of groups that "share certain conventions … These conventions are created in relation to particular musical texts and artists and the contexts in which they are performed and experienced" (p. 2). In this sense, Holt also agrees with the idea of the dependance of genres to specific groups of people with shared conventions. This approach is also shared by David Brackett (2002) when he states that genres "do not consist of essential unvarying characteristics, but rather exist as a group of stylistic tendencies, codes, conventions, and expectations that become meaningful in relation to one another at a particular moment in time" (p. 67), and by Lena and Peterson (2008), who state that music genres are "systems of orientations, expectations, and conventions that bind together an industry, performers, critics, and fans in making what they identify as a distinctive sort of music" (p. 698)

These ideas around the definition of genre are also shared by John Frow (2010) when he states that a genre is "a set of conventional and highly organized constraints on the production and interpretation of meaning" (p. 10). Frow stresses that he does not mean 'constraints' in a negative manner, but as some useful and accepted guidelines, in a similar way as the usage that Fabbri gives to the phrase 'set of rules'. However, and more importantly, this definition highlights the subjectivity associated with the term and the necessity of a third receptive party: genres are meant to be interpreted by someone (by a listener or an audience in the case of music) and from that interpretation, a specific meaning is constructed. This idea is also reinforced by the author when—paraphrasing the work of E. D. Hirsch, Jr. regarding the interpretation of literary genres—he states that "genre is neither a collection of texts nor a set of lists of essential features of texts but an interpretive process" (Frow, 2010, p. 110). Moreover, when categorising textual events to specific genres, Frow believes that texts are not necessarily members of a sole class but can be associated to many genres. He argues that the relationship between genres and texts are of "productive elaboration rather than of derivation or determination" (p. 25). However, Frow also gives importance to the task of linking a work with a particular genre when he states that this assignment is a "step in deciding how to interpret it" (p. 133).

Considering the definitions reviewed, in this research the idea of genre in music will be linked to the concepts of meaning and interpretation, and to a set of conventions working in a specific context. In this way, the working definition of a music genre will be a set of conventions and labels used in a particular context in order to create meaning from a set of musical events. However, from all the definitions and concepts reviewed, two questions arise: since genres are subject to

interpretation, and since the meaning of a genre depends on the context of the analysis and the reader (or listener), how might one describe a particular piece of music by assigning it to a specific genre? And would it be possible to agree and categorise a work in one single category?

1.3 Categorising Music

When trying to determine the lines that separate the different genres, it is necessary to acknowledge that genre divisions are conventional and culturally specific (Frow, 2015), and they must be regarded as highly fluid because of the level of interaction they present between one another (Holt, 2007; Shuker, 2001). Moreover, the relationship between a work and a genre (or a set of genres) is not one of a vertical hierarchy where a work is only linked to one particular class to allow a proper characterisation or determination; instead, it is a relationship of "productive elaboration" (Frow, 2010, p. 25) where works influence genres and vice versa.

Allan F. Moore (2012) agrees with the views previously presented by arguing that genres (and styles) are subjective, consequently meaning that any classification around genres cannot be objective and cannot be shared by every listener or analyst. Moreover, Moore refrains from using the term 'objective', and prefers to talk about genres and styles as 'intersubjective' categories. Addressing the categorisation, and acknowledging that genre definitions are not rigid, Moore argues that it would only be a matter of "shared subjectivity" (p. 165) amongst the listeners to catalogue a work in one genre or the other.

The work of Kendall Walton (1970) also provides valuable insights in the task of classifying works of art. He argues that the non-aesthetic properties[4] of any work can be divided into three categories: standard, variable, and contra-standard. Depending on which properties a work presents, it can be assigned to a particular class (such as a genre). He argues that a property is standard when "the lack of that feature would disqualify, or tends to disqualify, a work from that category" (p. 339). Subsequently, variable properties do not relate to the works that are associated with a specific category, but their presence or absence are not relevant for the classification. Finally, contra-standard properties tend to disqualify a work from a category.

Moving further from the specificity of properties' analyses, Walton (1970) presents two additional ideas that agree with the subjectivity that surrounds genre definitions and works categorisation. Firstly, he states that it will not be perfectly clear for all the cases whether a property is standard, variable, or contra-standard. This categorisation will depend on the subject that experiences the work—such as a listener, reader, viewer, and others—their individual background, and the context or occasion of the experience. In that way, Walton argues that in some cases works could be classified in different categories by different people, and that, at times, it is likely that misinterpretations occurred because works are perceived in a different way: "it is correct to perceive a work in certain categories, and incorrect to perceive it in certain others" (Walton, 1970, p. 356). The author goes even further by presenting a list of considerations that help to assess if a work was perceived correctly. Amongst those considerations it is possible to mention that a) there is in a work a relatively large number of standard properties with respect

[4] Walton (1970) separates aesthetics properties from non-aesthetics ones in works of art. Amongst the aesthetic ones are balance, tension, mystery, coherence, and serenity, amongst others. Properties such as colours, shapes, timbres, pitches and rhythms are part of the non-aesthetic ones.

to a category; b) a work is better, or more interesting, or pleasing aesthetically, or more worth experiencing when perceived in a category than when it is perceived in others; c) the artist who produced a work intended or expected it to be perceived in a specific category; d) a category is well established in and recognised by the society in which a work was produced.

Additionally, Walton (1970) argues that to perceive a work in a specific category is to perceive the 'gestalt' of that category in the work; hence, the identification of a work with a particular category is more than a matter of inferring the presence or absence of several properties. We perceive the 'gestalt' in a work when it sounds (or looks) part of that category to us. This also agrees with the idea of 'productive elaboration' presented by Frow (2015) and the horizontal relationship between a text and a genre, and highlights, once again, the importance of the interpretation of works and the different meanings that can be extracted from them.

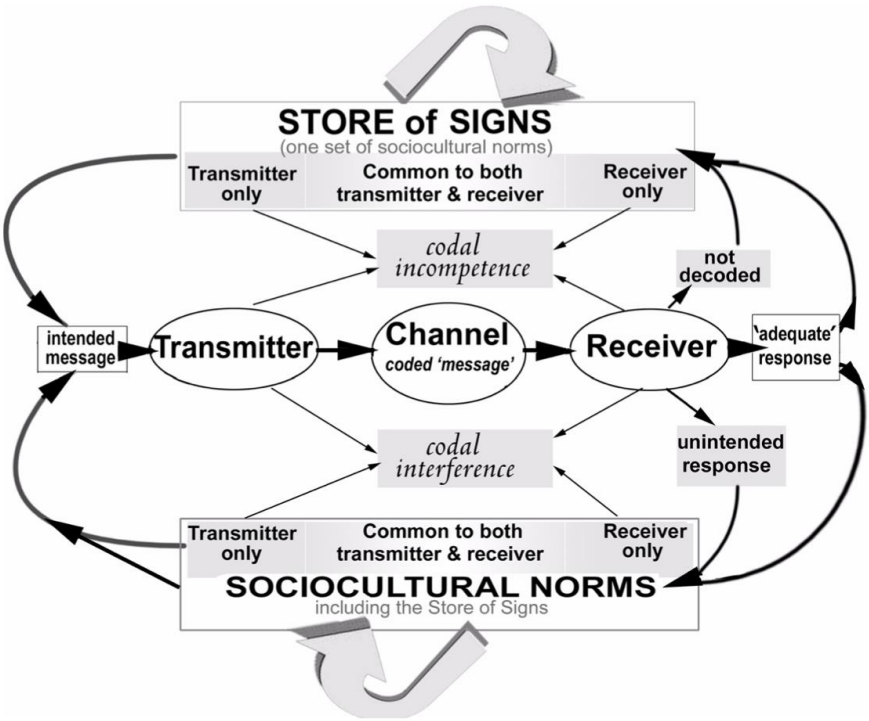
1.4 Interpretation of Music and Genres

The concepts of interpretation and meaning in music are related to the field of music semiotics, which has been defined as an area that "deals with relations between the sounds we call musical and what those sounds signify to those producing and hearing the sounds in specific sociocultural contexts" (Tagg, 2013, p. 145). This definition coined by Philip Tagg was drawn from the works of semioticians linked to the American tradition (particularly Charles S. Peirce) and the European tradition (particularly Ferdinand de Saussure). Their works, related to the idea of sign, were the foundation for semioticians associated with music to address the issues around the concept of meaning in this field. Regarding this, Tagg himself defined semiosis as "the process by which meaning is produced and understood. It includes the totality of, and the connections between, three elements that Peirce called *object*, *sign* and *interpretant*". (Tagg, 2013, p. 156). In that sense, the concept addressed as the 'object' is the work, the text, or the piece of music; the 'sign' is the representation of the object; and the 'interpretant' is the perceiver and interpreter of the sign.

Tagg also pursues an alternative way of understanding semiosis, which was based on the study of the phenomenon in terms of a message and its communication. He states that there are clear similarities between both approaches, as there are three aspects to this process as well: "[1] the thing or idea to be encoded (similar to Peirce's object), [2] the concrete form of that code - the sign - and [3] the decoded version or interpretation of that code (similar to Peirce's interpretant)" (Tagg, 2013, p. 157). The author develops even further this idea of musical message and its communication summarising his approach in the following model:

Figure 2

Tagg's Musical Communication Model



From *Music's meanings: a modern musicology for non-musos* (p. 174), by P. Tagg, 2013, Mass Media Music Scholars' Press. Copyright 2013 by Mass Media Music Scholars' Press.

In this model, the 'intended message' is analogous to Peirce's object, and it is defined as "what transmitters hope to express" (Tagg, 2013, p. 175). Subsequently, the 'channel' or 'coded message' represents the "the music as it sounds (an array of signs)" (p. 175), and the interpretant or the meaning is created when the 'receivers' develop a response to the coded message.

In the same manner that Walton (1970) speaks about the correct way of perceiving a work, Tagg coins two concepts associated with failures in the communication process in music, or when the receivers do not elaborate an 'adequate' response. They are named 'codal incompetence' and 'codal interference'. The first one refers to an error produced when the transmitter and receiver do not share a common store of signs. Codal incompetence at the receiving end means an "'inadequate response' in terms of the music's original cultural setting, functions and intentions" (Tagg, 2013, p. 179). By contrast, codal interference "arises when transmitter and receiver do share the same basic vocabulary of musical signs but differ in terms of sociocultural norms" (p. 182). In that way, transmitters and receivers do not translate the same store of signs and meanings into the same final interpretants. Tagg also remarks that "since music works to such an overwhelming extent as a culturally specific sign system, its ability to carry meaning relies on the existence of a shared store of signs common to transmitters and receivers in the relevant cultural context" (p. 192).

This view is also shared by Tarasti (2002) when he states that "in order for the sign to function, the two subjects must share common codes, i.e., possess a similar musical competence. Moreover,

it is futile to discuss music unless the speakers involved have sufficiently similar competence" (p. 18).

In conclusion, it could be argued that it is possible to transfer several of the ideas presented regarding the meaning and interpretation of musical works to genre studies. Even Fabbri (1982) declares that there is a semiotic nature of genres "which regulates the relationship between levels of expression and content" (p. 136). If we agree that the interpretation of musical works is highly changeable (Holt, 2007), and that they can be analysed as signs or through the communication model established by Tagg (2013), then it would be plausible to think that genres, composed by a number of different musical works, can also be studied as signs or, more specifically, as 'sign systems'. In that way, Fabbri's 'set of musical events' would be the 'intended message'; the 'coded message' would be the 'sign system', and its meaning could be extracted by a 'receiver'. Finally, the 'adequate response' (or the perception without codal interference nor codal incompetence) would be possible if both transmitters and receivers follow Fabbri's 'definite arrangement of socially accepted rules'. This would mean that, although genres are not objective in nature and are subject to different interpretations, said reading and the consequent categorisation of pieces of music would be similar amongst transmitters and receivers if they all agree to and share the same context of musical signs and sociocultural norms. If they do not, interpretations would differ and the expectations about musical works and their genres may not be fulfilled.

1.5 Socio-Cultural Aspects in the Interpretation of Genres

Although this research does not intend to be about cultural studies, there are some socio-cultural aspects related to the interpretation of music genres that are worth mentioning.

Holt (2007) states the relevance of paramusical aspects in the interpretation of genres, arguing that the code for the creation of meaning is not only in the music itself, but also "in the minds and bodies of particular groups of people who share certain conventions" (p. 2). These conventions are, on the one hand, related to specific musical works and artists, but, on the other hand, associated "to the contexts in which they are performed and experienced" (p. 2). In this way, meaning arises not from individual elements in isolation but through their integration and organisation within "symbolic contexts with certain regulatory procedures and overarching mechanisms" (p. 23).

Frow's (2015) work also highlights the integral role of socio-cultural aspects in shaping genre interpretation, emphasising that genres provide users with a framework of knowledge that they actively draw upon. Genres construct specific "worlds" (p. 31) characterised by unique effects of truth, authority, and plausibility, which contribute to the realisation and coherence of these worlds. According to Frow, this knowledge is not confined to theoretical contexts but is deeply embedded in everyday life, influencing social practices and shaping norms within "commercial and educational institutions" (p. 31). Moreover, Frow argues that genres establish a set of expectations that guide how audiences engage with works. These expectations operate as cues that frame works in particular ways and can arise from the work itself or be external to it. All these factors shape how audiences interact with a genre, providing guidance on its use and on what to expect at different stages of it.

For example, there are certain conventions in classical music that are expected to be followed by performers and audiences alike during a performance. In terms of the performers, they are required to wear formal attire or clothing that aligns with the story or context being represented on stage. Audiences are expected to sit quietly throughout the performance, refraining from making noise or engaging in any behaviour that might disrupt the focus and concentration required to appreciate the music. (Small, 1998). Even the concert hall—the building where a classical performance takes place most of the times—is created under the assumption that the performance is "a system of one-way communication, form composer to listener through the medium of the performers" (p. 26). The physical separation between the stage and the audience further underscores this hierarchical structure, with performers elevated as the focal point of the event. Additionally, audience members are typically discouraged—or even prohibited—from using portable devices for recording the performance to avoid distractions for other audience members or even the performers.

These characteristics contrast with the ones found, for instance, in popular music. Here, the conventions are much more informal, with the audience engaging with the performance by singing, shouting, jumping, or dancing. Performers in popular music often adopt casual or genre-specific clothing styles that reflect the culture of the music or their individual artistic identity. They frequently interact directly with the audience through gestures, movement, or verbal communication (Frith, 1998), fostering a sense of connection and participation that contrasts sharply with the formal and restrained atmosphere of classical performances.

Together, these insights highlight the role of socio-cultural conventions in structuring the contexts in which works are produced and received. These conventions influence not only the expectations of performers and audiences but also the spaces, practices, and behaviours that define how genres are experienced. By shaping norms and practices, genres establish boundaries that guide participants in their engagement with the art form, creating a shared framework of understanding.

Moreover, the regulatory mechanisms and symbolic contexts outlined by Holt (2007) and Frow (2015) emphasise that these conventions are not static; like musical conventions, they evolve over time, reflecting broader cultural transformations. Ultimately, the socio-cultural structures surrounding genres shape not only how works are produced and consumed but also how they acquire meaning within specific cultural and historical contexts, influencing both their importance and interpretation.

1.6 Working Definition of Popular Music and Popular Song

Although the study of popular music is recent amongst academic circles, several authors have gained notoriety for their efforts on building a deeper knowledge in the field of musicology of popular music and on creating a set of definitions of the most used terms in the area. Whilst they differ in some respects, it is interesting noting the similarities in their arguments and how it is possible to establish a consensus from their points of view in the discussion of the practice of popular music. For instance, subjects agreed amongst all the authors are the lack of formal analyses of popular music and the erroneous approach of examining this type of music with the same set of parameters utilised in the classical counterpart (Fabbri, 2010; Middleton, 1990; A. F. Moore, 2012; Tagg, 1982).

Besides that, it is possible to find that many questions arise when trying to coin a working definition of popular music. More specifically, there are risks associated with minimising some definitional issues around the concept (Fabbri, 2010), such as:

- The socio-conceptual issue: what is 'the people', and what is 'popular'?
- How does the expression 'popular music' translate into other languages?
- The ethnocentric vs. multicultural issue: is popular music just the Anglo-American pop-rock mainstream?
- The 'modern media' issue: is popular music just media-related music?
- The 'popularity' issue: is popular music just any kind of mainstream? Does 'unpopular music' really exist?

These points question the essence of the definitions around popular music and have proven to be valuable in finding a more inclusive definition or model for this research.
As previously mentioned in this chapter, popular music is considered to be a metagenre, i.e., a genre that comprises a number of other genres (Shuker, 2017). Deepening this definition, Shuker also characterises popular music as accessible, commercial-oriented, with memorable hooks or choruses, and with lyrical themes concerned with romantic love. Along similar lines, Frith (2001) states that some features of the genre include its relationship to the sentimental song, its accessibility to the general public and its aim to appeal to everyone. Besides that, Frith states that popular music is an enterprise linked to record companies, radio programmers and concert promoters, and that is not an art form, but a craft. These views are controversial, questionable, and fall into the reductionist approach highlighted by Fabbri (2010). They raise questions about the aesthetic value of popular music that are impossible (and unnecessary) to answer and that seem narrow and outdated. Stating that popular music is not an art form is to undervalue the genre, especially when comparing it to other genres that are considered part of the arts. Besides that, such a statement underestimates the great impact that popular music has had on modern societies for more than a century. Subsequently, identifying popular music merely as the 'sentimental song' is an anachronistic and simplistic approach that rules out a considerable amount of works in many music genres that are part of popular music. And considering its aim, would it be possible to 'appeal to everyone'? And who would this 'everyone' be?

Studying Popular Music (1990) by Richard Middleton is still considered one of the most comprehensive books on the analysis of popular music. In the text, the author focuses on popular music created "in the 'developed' societies of the industrialized West" (Middleton, 1990, p. vi), particularly in the sphere of the United Kingdom and the United States. He supports this choice by stating that the resonance of the term 'popular music' appeared when these societies underwent the "impact of 'modernization'" (Middleton, 1990, p. vi) and because the spread of Anglophone music has been wider than any other kind of music. In attempting to define the term 'popular music', Middleton firstly criticises rigid definitions, such as the one proposed by Frans Birrer who established four main categories of definitions that could exist individually or in combination: popular music is an inferior type of music; is music that is not something else; is associated with a particular social group; and is disseminated by mass media in a mass market (Birrer, 1985 as cited in Middleton, 1990). Middleton states that none of those categories is satisfactory and that it is necessary to accept that, due to the constant movement and evolution of the field of popular music, a definition should not be absolute. This is consistent with the genre

definitions reviewed earlier in this chapter: definitions are flexible and depend on conventions established in a specific context.

The scholar also suggests that definitions change depending on the period of study, and he recognises three main landmarks associated with the history of popular music. The first one was the bourgeois revolution from the late eighteenth century to the 1840s, followed by new methods of music creation and distribution from the 1890s to the 1920s, characterised by Tin Pan Alley songs, ragtime, jazz, new dance styles, and the spread of the gramophone and the radio. However, perhaps the biggest landmark was the one found from the 1950s with the advent of rock and roll, mainly because it coincided with changes in technology, production methods, and dissemination that allowed the inclusion of different musicians and wider audiences (Middleton, 1990).

This approach is also shared by Allan F. Moore (2019), who states that it is preferable to avoid a definition of popular music (in particular, of rock music) due to the dynamism of the genre. However, he argues that there seem to be "ways of articulating musical sounds that are *common to* many of those songs which listeners call 'rock'" (A. F. Moore, 2019, p. 3). In that way, Moore acknowledges that there are commonalities between the works belonging to a specific genre that make them *sound* like they are part of the same category, which also coincides with Walton's (1970) approach to the 'gestalt'.

The Anglophone view introduced by Middleton (1990) was also shared by Allan F. Moore (2012) when he established a method for analysing and interpreting popular music. The author states that "there is no single, linear history to that thing we call 'popular song'" (A. F. Moore, 2012, p. 144) due to a constant movement of artists and audiences between the dualism of mainstream/margin. Although he recognises that the meaning of 'popular song' is difficult, at times it resolves in either one of two definitions. The first one is purely definitional and underlines that it is possible to differentiate between a 'popular song' from other types of songs through a set of characteristics of various types, such as "its use of harmony and rhythm; its appearance in certain types of venues through particular processes of transmission; or the motivation of its musicians" (A. F. Moore, 2012, p. 122). The second one is ideological and suggests that the category of 'popular song' is inherently discursive and it depends on who is doing the categorisation and their motives. He also suggests (just like Birrer) that it is easier to state what is *not* the popular song, arguing that it can be distinguishable from the 'art song' or the 'folk song'.

Addressing the history, Allan F. Moore (2012) concurs with Middleton (1990) in the major landmarks that have been the context of the emergence of popular music. He states that current popular music comes directly from the tradition of leisured classes in the eighteenth century and that it became an industry in the 1880s through the work of Tin Pan Alley publishers. Furthermore, Moore highlights the emergence of gospel and blues as contributors to the growth of the popular song and points to the advent of rock and roll and the technological development in the 1950s and 1960s as the widespread growth of popular music. These events triggered the rise of styles that became the palette of popular music in the years to come, such as rock, progressive rock, soul, motown, funk, glam, synth pop, hip hop, dance, heavy metal, punk, amongst others. This view is also shared by Frith (2001), who argues that popular music includes all contemporary popular forms derived from the advent of rock and roll.

Allan F. Moore (2012) analyses popular songs following a large set of parameters, giving some light in the definition of popular music and popular songs due to the recurring themes in several features. For instance, he points out that most popular songs have four functional layers: the explicit beat layer; the functional bass layer; the melodic layer; and the harmonic filler layer. The author also addresses the question of form, harmony, time, and the spatial organisation of the elements in the mix (the 'soundbox'[5]), amongst others.

This methodology is similar to what Shave (2008) presents, with an analytic approach for popular music based on paradigms. Once a paradigm has been established, it is possible to assess if a song complies to said model or deviates from it to conclude if the piece is part of a particular subgenre, as the author states. Shave starts defining the song as "part of the music paradigm and opposed to instrumental music" (Shave, 2009, p. 43). Following that, he characterises the popular song paradigm with the following parameters:

> **Dominant presence:** Vocals (for the most part), lead instrument (occasionally). Singing in a style complementing the tonality, with a large amount of syncopation.
> **Length:** c.3 to 5 minutes.
> **Instrumentation:** Any Western instrument, particularly those associated with the development of rock and roll. Synthesizers, and jazz-associated brass instruments are also common.
> **Time signature:** 4/4
> **Speed:** Between c.75 bpm and c.125 bpm.
> **Harmony:** Rooted in equal-tempered major, minor and modal constructions. Little modulation.
> **Rhythm:**
> - **Non-harmonic iterative presence:** Drums (or synthesised drums).
> - **Harmonic iterative presence:** Rhythm guitar, bass guitar, rhythmic keyboard playing, rhythmic synthesizer, etc.
>
> **Structure:** A close variant of Intro-Verse-Chorus-Verse-Chorus-Bridge-Chorus-Chorus.
> **Production style, technology and its transparency:** Highly compressed with little dynamic variation. Vocals dominant in the mix. Often mimics an 'idealised' live sound. Though this is heavily processed, it is also 'transparent'; one notices the individual instruments and hears what they are playing without being conscious of the production technique. In contrast, there are instances where production technology is used stylistically and could be called 'opaque'.
> **Non-musical sounds:** There are many examples of non-musical sounds in pop works; often these are used to present narrative, working as a kind of prologue, epilogue or interlude. Their absence may be considered an intact paradigmatic axis, their inclusion can be described as development or substitution and will always recontextualise the listening experience.

Although this characterisation is at times narrow and the author does not provide the reference for the parameters and features used, it is an interesting and worthy method because—as A. F.

[5] The concept of 'soundbox' will be addressed in Chapter 7.

Moore's (2012) also does—it points towards particular characteristics of the music and not only to angles about reception, accessibility, or purpose.

1.6.1 Model for this Research

Since there is not a single definition for popular music and popular song, it will be necessary to establish a model to use as a reference for this research. Starting with popular music, only the period that began with the advent of rock and roll (c. 1950) until present days will be considered. Both Middleton (1990) and Allan F. Moore (2012) characterise this period as the most important in terms of the emergence of popular music, mainly because of the technological advances that allowed new means of creation and dissemination of the material. Because of that, popular music will be treated as a metagenre (Shuker, 2017) encompassing the different genres that were developed from that period, such as, rock, soul, motown, funk, reggae, glam, synth pop, rap, hip hop, dance, heavy metal, punk, amongst many others. This is also supported by Spicer (2004), who utilises 'pop-rock' as a catch-all term that includes "all the myriad styles and genres that have arisen since the 1960s within both 'pop' and 'rock' traditions" (p. 30). Finally, popular music will be differentiated from art music, folk music and jazz.

Undoubtedly, popular music is developed in many different countries and languages, but this research will only focus on Anglophone popular music, mostly created by artists in the United Kingdom and the United States of America due to the notorious worldwide impact in the practice of popular music and because their body of work covers all the referred genres.

The accessibility of the music, the alleged purpose of appeal to everyone, the issues of popularity and dissemination, and the discussions around value, authenticity and commercialism will not be regarded as relevant due to the subjective and evolving nature of the topics and terminology.

Following this working definition of popular music, it is necessary to establish a model for the popular song. Firstly, it will be considered that a popular song is a piece of music created in one of the genres that are part of the metagenre of popular music. Secondly, and in line with the characterisation presented by Allan F. Moore (2012), most elements found in a recorded popular song can be classified into one of four different textural layers: explicit beat layer, functional bass layer, harmonic filler layer, and melodic layer. For this research, this last category must include a vocal melodic line with associated lyrics to be considered a popular song. This coincides with what Jeremy Gilbert and Ewan Pearson (1999) explain when referring to dance music as a form of 'popular instrumental music' because it is "music which is not based on songs" (p. 38).

Addressing the form of popular songs, this research will take into account the work made by Ralf von Appen and Markus Frei-Hauenschild (2015), who summarise the numerous investigations that have focused on this area, stating that the majority of popular songs can be classified in one of three main form archetypes:

- Verse/chorus forms and its variations. Following the differentiation made by John Covach (2005), this category will be further divided into 'simple' and 'contrasting', and it will also include the Terminally Climactic Form (TCF) proposed by Brad Osborn (2013) because it is considered to be a variation of the verse/chorus form.

- AAA, 'strophic', or 'simple verse' form. This category includes the twelve-bar blues and its variations.
- AABA or the 'American Popular Song Form' and its variations.

However, the analysis of popular songs is complex and there are several examples of pieces where the form is ambiguous and may not fit into one of the aforementioned categories (de Clercq, 2017; Spicer, 2011); because of that, there might be additional variations to this classification that will be referenced and defined accordingly.

1.7 Working Definition of Electroacoustic Music

A number of scholars have recognised the challenges in establishing a definition for electroacoustic music and the issues associated with the attempts of describing the genre. For example, the term has been characterised as "elusive and esoteric, ill-defined and multiplicitous in nature" (Mooney, 2005, p. 5), with associated terminology that is "at best fluid and at worst in a fairly weak state", (Landy, 2006, p. 1) particularly in relation with categories and genres.

Amongst the difficulties in finding a plausible description for electroacoustic music it is possible to note that several researchers have used different terms to describe the same musical genre (Roads, 2015), and that it has had various definitions over the years because it has been used to describe similar practices in different contexts (Demers, 2010). Landy (2007) even points out that "there is no single significant term for which a universally accepted definition is known" (p. 10), stating that it has been called electroacoustic music, electronic music, electric music, elektronische Musik, musique concrète, sonic art, computer music, sound-based music, amongst others. The use can vary depending on the country, the language, or the school or trend followed.

Collins et al. (2013) agree that at times the terms electroacoustic and electronic music are used interchangeably, and argue that, in the broadest sense, electroacoustic music means "sound reproduced using electronic means, such as loudspeakers, but can be employed in a more constrained sense of highly designed electronic art music for close listening with an emphasis on space and timbre" (p. 1). In a similar manner, Emmerson and Smalley (2001) define electroacoustic music as "music in which electronic technology, now primarily computer-based, is used to access, generate, explore and configure sound materials, and in which loudspeakers are the prime medium of transmission" (p.1). The authors also separate the practice of electroacoustic music in two genres: acousmatic, described as tape music intended for loudspeaker listening; and live electronic music, where technology is used to generate, transform or trigger sounds in the performance. Both definitions of electroacoustic music emphasise the use of electronic technology and, specifically, the loudspeakers for the transmission and presentation of works.

Leigh Landy (2007) favours the use of the term 'sonic art' for the kind of music in discussion, which he defines as "the art form in which the sound is its basic unit" (p. 10). He argues that the label electroacoustic music was originally adopted as an "inclusive and umbrella-like term for the activities of musique concrète, tape music, and electronic music composers, activities that saw almost immediate cross-fertilization which continued through the 1960s and 1970s" (p. 12). Subsequently, he offers his definition of electroacoustic music stating that it refers to "any music in which electricity has had some involvement in sound registration and/or production other

than that of simple microphone recording or amplification" (p. 13). Despite this, Landy highlights his concerns about this definition and the historic confusion with his preferred term sonic art. He argues that the term electroacoustic music can be mistaken as "there are pieces made solely from acoustic sounds" (p. 16) that are pertinent to the genre. Furthermore, the author states that the word 'electroacoustic' has been extensively used in many different ways in music and the sciences, but, more importantly, he points out that "there are more than a few electroacoustic pieces that lean heavily on note-based composition, elegantly applying sound manipulation and timbre-based techniques to move a piece from the instrumental to the electroacoustic universe" (p. 16–17). In his view, these pieces would not fit in the category of electroacoustic music given the definition he presented; instead, they would be appropriate for the category of sonic art.

Although Landy's (2007) preference of the term sonic art is clear, he finds the name of the genre problematic since it does not include the word 'music'. Therefore, for this kind of practice Landy offers the use of the term 'sound-based music', which he defines as "the art form in which the sound, that is, not the musical note, is its basic unit" (p. 17). However, the downside of this definition is that any other musical or instrumental sound can fit into this category, as there are many sounds used in instrumental music that cannot be described as musical notes and the definition does not restrict them to recorded sounds. This characterisation is, therefore, insufficient.

Curtis Roads is an American researcher that favours the use of the term electronic music over electroacoustic music. Roads (2015) employs electronic music to refer to the "general category of analog and digital technologies, concrète and synthetic sound sources, and systematic and intuitive composition strategies" (p. x). Along similar lines, Demers (2010) offers a definition of the metagenre of electronic music where electroacoustic music is a subgenre of it:

> Electronic music is any type of music that makes primary, if not exclusive, use of electronic instruments or equipment. It encompasses electroacoustic music, which often enlists acoustic instruments along with electronics, as well as purely electronically produced sounds. Electronic music thus inhabits a large expanse of genres, styles, and practices. (p. 5)

In that sense, for Demers (2010) electroacoustic music implies electronic music with the involvement of acoustic instruments. She goes even further by stating that electroacoustic music also unites "musique concrète … and exclusively synthesized music (what the Germans called elektronische Musik)" (p. 167). Besides that, Demers adds the qualifier 'experimental' to the practice of electronic music, although she acknowledges that the term is not specific enough: on the one hand, experimental implies defying conventions, but, on the other hand, conventions change from time to time. Therefore, Demers (2010) argues that experimental is "anything that has departed significantly from the norms of the time, but with the understanding that something experimental in 1985 could have inspired what was conventional by 1990" (p. 7).

Furthermore, and as stated in previous sections, according to Demers (2010) experimental electronic music can be further divided into three distinct metagenres: institutional electroacoustic music, electronica, and sound art. From her perspective, all three metagenres constitutes high art, but all of them exist in alienation from the other two and from the mainstream culture. Additionally, Demers (2010) states that there is a common belief that

electronic music is "fundamentally different from anything that came before it" (p. 149), mainly because of its original sonorities and because it erases the frame constructed by conventional instrumental music, which consisted of predictable musical parameters such as rhythms, melody and harmony, and instrumental timbres, amongst others. Therefore, it can be inferred from Demers' statement that she adheres to the idea of electronic music being aligned with a sound-based approach rather than a note-based one.

Finally, Demers (2010) argues that electronic music encompasses a vast array of genres within the metagenres mentioned earlier, all of which qualify as some form of electronic music. However, Demers manages to identify a common feature amongst the numerous genres of electronic music: "[e]ach genre I consider has its own values and methods for approaching sound and for deciphering any meaning it might possess, but all strategies share one trait: a subscription to the ideal of experimentalism" (p. 139). This fundamental feature, the pursuit of some form of experimentalism, will hold significant relevance for this research.

Mooney (2005) starts exploring his definition of electroacoustic music by conducting a detailed etymological analysis. He states that the term connotes a practice that "utilises electrical and/or electronic ('electro-') equipment to create and present sounds ('-acoustic') that are in some way 'musical'" (p. 7). In this aspect, Mooney diverges from Demers (2010) with respect to the 'acoustic' element: Demers regards 'acoustic' as the inclusion of acoustic instruments in the practice, while Mooney employs the term to describe the propagation of sound[6]. Nonetheless, Mooney acknowledges the pivotal role of loudspeakers for the reproduction of electroacoustic music, stating that this attribute "precedes all aesthetic considerations and is arguably the most basic (but not necessarily the most important) defining characteristic of the idiom" (p. 8).

Formulating a definition of the term, Mooney (2005) states that electroacoustic music is "that which *directly* and *categorically* explores (or seeks to promote an exploration of) the artistic potentials of the particular creative frameworks engaged in its realisation" (p. 39). Mooney further suggests that most popular music genres "do not appropriate audio technologies as primary creative frameworks, as such but, rather, make more functional use of their affordances" (p. 39). Subsequently (and just like Demers), Mooney supports the experimental nature of this genre with the notion of 'exploratory'.

1.7.1 Model for this Research

The definitions of electroacoustic music that are constructed around a technological description of the creation and dissemination of works are considered to be outdated for this research. They proved to be helpful in the advent of elektronische Musik and musique concrète due to the dichotomy of classical instrumental music and electronic-based music. Since classical instrumental music is mostly created and disseminated with a score, performed by acoustic instruments and presented in a concert hall without—most of the times—the use of amplification or loudspeakers, it seems logical that a definition of electroacoustic music using opposed terms to the ones related with the instrumental tradition was plausible. However, and just like Landy (2007) pointed out, electroacoustic music saw almost immediately a cross-fertilisation with other

[6] This discrepancy also highlights the issues around the definition of electroacoustic music, when two researchers infer different things from the same terms.

activities and genres, and a definition that only relies on technological means to describe the wide range of music it encompasses cannot stand the test of time, especially if we consider today's practice.

Most popular music uses electronic and digital technologies for its production and distribution, and most of them also use loudspeakers for its presentation. In that sense, what would be the main difference between electroacoustic and popular music? As it was mentioned earlier, Mooney (2006) states that popular music uses technologies as functional tools instead of creative frameworks, but it seems that such a statement is difficult to prove with modern popular music practice and with the previously mentioned cross-fertilisation of genres.

However, there are two aspects of the definitions reviewed that emerge as relevant for this research. The first one is the idea of sound-based music presented by Landy, where "pitches (or 'notes') play a secondary role (if any) to sound qualities" (Emmerson & Landy, 2016, p. 19). Electroacoustic music tends to favour sound qualities and their manipulation over other instrumental music parameters, such as pitch hierarchies (with melody and harmony), rhythm, and instrumental timbres, to name a few. The second one, is the characteristic pursuit of experimentalism of electroacoustic music. Electroacoustic music seeks to explore sonic ideas that differ from the structured forms of popular music and the timbres and parameters of instrumental music. Therefore, the proposed definition of electroacoustic music for this research is the following: an art form that pursues experimentation through the recorded or manipulated sound.

1.8 Chapter Summary

This chapter explained the complexities of defining music genres, focusing specifically on electroacoustic and popular music. It addressed ways in which genre has been a challenging concept to define, primarily due to its subjective nature and the fluidity that exists between genres, especially with technological developments that blur the lines between musical categories. The discussion began by examining several perspectives on genre definitions; then, a consensus emerged that genres are not fixed entities but rather units that evolve over time, being shaped by the conventions of specific groups and contexts, and closely linked to concepts of meaning and interpretation.

Several perspectives were offered relating to the ways in which genre categorisation functions, particularly the idea that music genres are interpretative and not merely collections of static characteristics. It was shown that several authors (Frow, 2015; A. F. Moore, 2012) emphasise subjectivity when classifying music, assigning a pivotal role to interpretation, and addressing how musical works can span multiple genres.

The role of interpretation and meaning in music were also addressed from the perspective of music semiotics. This field explores the relationships between musical sounds and their significance within specific sociocultural contexts. Situating the discussion around Tagg's (2013) views, the chapter emphasised the ways in which adequate interpretation requires a shared musical competence between creators and listeners, underscoring the importance of cultural contexts in the understanding of genre.

The previous discussion led to establishing working definitions for the genres of electroacoustic and popular music. The chapter presented popular music as a metagenre encompassing various genres that have developed since the advent of rock and roll around 1950. It was stated that, in this research, the focus will be primarily on Anglophone popular music, particularly from the UK and the US. The chapter also outlined a working definition of the popular song within this context.

Turning to electroacoustic music, it was noted that challenges in defining this genre exist because of the varied terminology and evolving practices associated with the tradition. Key characteristics were identified, including the use of electronic technology and loudspeakers for transmission; however, there was an emphasis on sound-based composition (Landy, 2007) where notes often play a secondary role to sound qualities, and on a persistent pursuit of experimentalism (Demers, 2010).

This exploration of genre laid the foundation for understanding the complex interplay between the traditions of electroacoustic and popular music. However, the topics of genre, categorisation, semiotics, and interpretation are too broad to be fully addressed in a single chapter, especially given that this research focuses on compositional methods for creating hybrid works, rather than semiotics or music psychology. Accordingly, the chapter has offered a nuanced framework for analysing hybrid works that integrate elements from both electroacoustic and popular music, setting the stage for deeper investigation in the following sections of this thesis.

2 Hybridisation of Genres

2.1 Review of Recent Notable Works

In the past few years, it has been possible to find electroacoustic compositions with traces or clear staples of elements usually associated with popular music. Moreover, the integration of sonic manipulation into popular practices has led some artists to a continuous search of experimentation, bending the instrumentation and structural formulas of the genre and even establishing a link between popular music and electroacoustic practices (Manning, 2013). Several examples will be considered to demonstrate this:

Åke Parmerud is a Swedish electroacoustic composer that has integrated elements of popular music in his pieces. In *Growl!*, from 2014-15, he took elements found in metal music and used them as material for the piece. Amongst those elements, there are guttural vocals sung by four different 'growlers', short lyrics, and riffs played by metal guitars. Besides this, there is a constant sense of tempo throughout most of the piece, even with elements performing as if they were part of an electronic drum kit in some sections. Although there is experimentation in the piece in the form of long sections, textural and gestural development, granulation (particularly of the vocal material), and a wide array of effects, amongst others, the use of elements found in popular music separates the piece from a traditional acousmatic one. Moreover, according to Parmerud's programme notes, "Growl! came out as a mix between metal, electroacoustic, and electronica musical styles" (Parmerud, 2015).

Gantz Graf by Autechre (2002) is an instance of a blend of IDM and electroacoustic music. The piece starts with a noisy and glitchy beat with some harmonic material in the background. Shortly after, the tempo is raised to a very high value, producing a result similar to the insertion of a granulation process, which is varied until the end of the piece. According to Smethurst (2016), this is a great example of a hybrid of both genres, since it is impossible to categorise the work as either electroacoustic or IDM; Smethurst notes that the material is "constantly reconfigured by cutting, excision, and rearrangement. At the end of the work, it almost seems like all the recognisable features of the original material have been removed" (p. 288).

Holly Herndon is also an artist who integrates popular music elements into her compositional practice. In *Chorus*, from her record Platform, Herndon (2015) experimented with the addition of bass and rhythmic layers, vocal material, and a clear sense of key and harmony. The result of such a combination is a work that resembles beat-based dance electronica. Interestingly, Herndon inserted a section that explicitly functions as a 'chorus', appearing twice throughout the piece. In this sense, she started to explore the verse/chorus variation form of the popular song.

Radiohead is an alternative rock band that started to show glimpses of sonic experimentation in their album *OK Computer*, from 1997. The addition of ambient-like textures to the songs and the inclusion of the piece *Fitter Happier*, where the lyrics are spoken by a computerised voice and where, as spotted by Rose (2016), it is possible to hear a dialogue extracted from the movie *Three Days of the Condor*, directed by Sydney Pollack (1975), paved the way for the band's most adventurous experimentation: *Kid A*, from 2000. The opening piece of the album, *Everything in Its Right Place*, shows a sonic palette that permeates the entire LP. Vocal samples played at different

pitches, speeds, in reverse, and stretched, accompany the main vocals, which are only made up from four repeating sentences. This vocal material is used for creating both textures and gestures, and blended with the rest of the instrumentation, composed by two synthesisers and a bass drum setting out the 10/4 time signature.

Medúlla by Björk (2004) is an album created using almost entirely vocal material. The artist collaborated with several other singers, choirs and beatboxers to create most of the sonic layers of the work. From this album, one of the highlights in terms of experimentation is the piece *Ancestors*, which has no lyrics and does not follow any popular song form. It begins with a high-level background noise, a quiet piano, vocal sighs, and vocalisations. Halfway through the piece, the sighs begin to exaggerate their intensity, and vocal noises start to appear, in a similar fashion to the opening material of *Tongues of Fire* by Trevor Wishart (1992-94). These vocal samples are manipulated in pitch and speed, transforming them into the main focal point of the composition and building a climactic moment towards the end.

The Background World by Nine Inch Nails (2017) is the closing piece of the EP *Add Violence*. Besides the usual gnarly beats and haunting textures characteristic of the band, there are two elements that strike as experimental for a popular work. The first one is the form of the piece. The duration of the work is unusually long with 11 min 44 s, and the structure is uncommon as well. There are four sections, all different from each other in terms of lyrics, instrumentation and sonorities. Additionally, the closing section is purely instrumental and longer than all the other sections combined. This section is composed by a broken, uneven loop extracted from the previous section that is degraded by a process of distortion (possibly fuzz and bit depth reduction) until the end of the piece. It is repeated and disintegrated 52 times over a duration of 7 min 40 s. This process is similar to the one used in *The Disintegration Loops* by William Basinski (2002-2003), and it could also be argued that it was inspired by it due to the knowledge of the piece that Trent Reznor has (Weingarten, 2020).

These examples illustrate the diverse and innovative ways in which contemporary artists integrate electroacoustic and popular traditions. It is possible to observe a spectrum of hybridisation that challenges conventional genre boundaries, from the integration of popular music elements into electroacoustic compositions to the addition of experimentalism into popular music forms. These works not only showcase innovative compositional and production approaches but also reflect evolving cultural attitudes towards the integration of electroacoustic and popular music, becoming increasingly clear that the dialogue between these two genres is not just ongoing but intensifying. This fluidity in genre boundaries presents both challenges and opportunities for analysts, practitioners, and listeners, making everyone reconsider the general understanding of genre in the contemporary musical landscape and paving the way for new forms of musical expression.

2.2 Hybridisation

The most common way of referring to music that mixes two or more genres or traditions is through the term ‘hybrid’. Definitions of hybridisation often come from either literature or globalisation theory. Closely related to literature genres, David Duff (1999) defines hybridisation as “the process by which two or more genres combine to form a new genre or subgenre; or by which elements of two or more genres are combined in a single work” (p. xiv). Describing

hybridisation in the context of globalisation theory, George Ritzer and Michael Ryan (2002) express that "a hybrid would involve the combination of two or more elements from different cultures or parts of the world" (p. 61). Additionally, Justin Gagen (2019) defines genre hybridity as "the state where artists produce work under multiple genres, creating connections between those categories" (p. 21). Gagen also points out that the concept of hybridisation not only assumes a state of difference between the interacting parts, but also reveals similarities. Furthermore, Pachararit Wismol (2014) describes hybridisation as "the processes by which diverse actors utilize strategies to reconvert resources and practices (a professional skill, a set of techniques and knowledge) in order to generate new structures, objects, and practices" (p. 76). In all these cases, the authors suggest that to create hybrid forms it is necessary to integrate different genres or different genre elements coming from distinct approaches of practices.

In a direct application to music, Simon Waters (2000) defines hybrid forms as "the result of the collision of different musical worlds, different disciplines, different modes of thought and understanding" (p. 67). In addition, when addressing hybrid forms between IDM and electroacoustic music, Smethurst (2016) argues that a hybrid is created at a point where the result can be recognisable as *both* original genres. Furthermore, Martí (2002) defines hybridisation as "the adoption by one concrete musical stream of musical elements that come from other streams. These elements are merged in such a way as to become a constituent part of the stream that has assimilated them" (p. 2). Martí suggests that hybridisation processes appear in many cultural contexts but in music these processes have been reinforced by globalisation and technological developments involved in the production and dissemination of music creation. This is also supported by Peter Burke (2006), who claims that due to the emergence of new technologies, hybridisation processes have been "particularly obvious in the domain of music" (p. 99).

Along similar lines, Jeremy Mayall (2016) defines hybrid music as the one that is "created through the selection and systematically planned synthesis of multiple genre sources to create an equal balance between constituent blended parts" (p. 32). This is supported by Sean Friar (2017), who states that a 'true' hybridisation is possible when there is "cross-fertilization between genres on a deeper level" (p. 2). In such a way, the result can be "music that combines deep elements of more than one genre in non-superficial ways, creating a listening experience in which a listener cannot easily categorize what he is hearing as being in one genre over another" (p. 2–3). In his view, if the hybridisation is 'superficial', the musical outcome would be dominated by one of the genres utilised, and the secondary genre would act merely as a reference.

The similarities and differences between the definitions reviewed will constitute the basis for the discussion that follows. These definitions will be further contrasted using six foci presented by Brian Stross (1999) in the article *The Hybrid Metaphor: From Biology to Culture*. In this text, Stross draws parallels between the usage of hybridity-related terminology found in biology and cultural studies; although there are many coincidences and transferable terms, some of them need to be used with caution. Stross introduces six conceptual foci associated with distinct components of hybridisation: the hybrid itself, the parents, the relations between the hybrid and its parents, the relations between the hybrid and its environment, the mechanisms behind the production of the hybrid, and the hybridisation cycle.

All the authors referenced in the previous paragraphs seem to agree that hybridisation in music implies the interaction of differentiated genres, styles or streams and their elements, and that the outcome of such interactions will generate hybrid forms. In this sense, there seems to be some agreement along the lines of Stross' 'parent' focus; the definitions state that the original genres need to be distinct for a hybrid to emerge. There are certain issues that arise when contrasting three other foci, however: the hybrid focus, the relations between hybrids and parents, and the production of the hybrid. When defining hybridisation, some authors argue that the outcome must be a coherent balance, or blend, of the original genres, which means that a listener would not be able to differentiate between the original genres, or to point out if the outcome resembles one genre or another. This implies that the production of the hybrid must be made in such a way that the hybrid itself could be characterised as a perfect blend of both parents. Furthermore, once the hybrid is created, its relationship with its parents would be such that the output pertains to both original genres. If the process does not follow such guidelines, the outcome could not be described as a 'true hybrid' since the hybridisation would be merely superficial. These statements raise challenges that are necessary to address, such as the practicality around the measurement of the contribution of both parent genres to the hybrid: would it be possible to measure the degree to which a genre is involved in a hybridisation process and then to quantify a perfect blend between two music genres? Although the authors that favour this view (Friar, 2017; Mayall, 2016) describe some mechanisms for hybridisation that applied said principles, these mechanisms are not sufficiently quantifiable to be used in practicality. Consequently, the definitions coined around said mechanisms appear to be problematic since they are based on assumptions that cannot be verified. Thus, this research will favour a broader definition when dealing with music hybridisation to avoid terminology that implies features or concepts that are questionable or cannot be applicable. Hybridisation in music will be defined as the process by which a work is created by integrating two or more genres or genre elements.

2.3 Current Methods of Hybridisation

Regarding methods for creating hybrid works, current literature does not present many instances on this subject. There are, however, two main contributions that will be reviewed in the following sections.

2.3.1 'True' Hybrid

As Friar (2017) argues, the method behind the creation of a 'true hybrid' implies choosing the most relevant or characteristic elements of each genre and the integration of said components. Approached differently, the result would only be described as a superficial hybridisation. In addition, Mayall (2016) claims that a hybrid can only be conceived by creating an 'equal balance' from the blending of elements. This type of statement is also found in the views of Josep Martí (2002), where the author uses the descriptor "low level [sic] case of hybridisation" (p. 11) when referring to a particular practice of Catalan folk-dance groups, or "certain colouring" (p. 2) to differentiate practices such as borrowing, parodies or quotations from hybridisation. However, Martí does not mention what are the characteristics of a 'low-level hybridisation' nor what would have been a case of 'high-level hybridisation'; therefore, the meaning of this phrase is obscured and its practicality impossible to anticipate.

The issues that arise from these statements are multiple. Firstly, the authors argue that the hybrid needs to show features that position it as a perfect blend of the original genres. Following Stross' (1999) characterisation, this relates to the focus of the hybrid itself and, as he shows, such description is similar to the way the term is used in biology (due to the mating process that is behind hybridisation in this context). The heterogeneity of the 'parents' and their balanced contribution to the process is the "hypothetical norm for the ideal hybrid" (Stross, 1999, p. 256). Moreover, besides the fact that the hybrid is the direct result of the blending of two distinct 'parents', it could also be possible to quantify and to determine whether the outcome is effectively a 'true hybrid'. However, this is not easily transferable to music. If two different music genres are considered 'parents' in a hybridisation process, would it be possible to measure or to quantify whether the hybrid is a *perfect* blend of each genre? How would one go about doing such measurement? If it is not possible to establish that the hybrid shows equal amount of presence from each genre, would it also be possible to establish the degree of the mixture to find out if the hybridisation is merely superficial? Secondly, Friar (2017) suggests that it is necessary to select the most relevant elements of each genre to create a perfect balance, but Stross (1999) argues that it is here where there are clear distinctions between biology and cultural hybridity and that, in this case, it is not possible to accept "conclusions drawn in one arena that are based only on observations made in the other" (p. 264). The mechanisms behind biologic hybridisation are governed by mating or sexual reproduction; in this way, the 'parents' are well-defined, and the hybrid and method are unmistakable. However, musical processes are much more difficult to describe and almost impossible to quantify in practice. Would it be plausible to determine objectively what are the most relevant musical elements of a particular genre or subgenre? Since music practice is highly subjective, the idea that the 'parent' genres could be characterised by only selecting a set of discrete parameters and their corresponding features seems questionable. If the creation of such a list *were* feasible, how might one go about establishing a hierarchy between those elements to determine which one has more significance in the perception of a genre? And, more importantly, what would be the method for integrating those elements into a coherent balance? Besides the idea of selecting the most relevant elements for each genre, the method that Friar attempts to establish is not clear. If a practitioner chooses, for instance, rhythmic features of one genre and harmonic features of another one, would it only be the case of simply merging those two? Moreover, the selection of a handful of elements from each genre would imply disregarding the rest of the elements that might contribute to the broad characterisation of the genre.

In consequence, the problem stated by Stross (1999) when he compared biology and cultural studies is also observed in music practice with the idea of the 'true hybrid'. The discussions presented above suggest that there should not be a direct transference of hybridisation-related terminology between biology and music, as Friar (2017) intends. The use of these biological notions in the music domain is, at the very least, questionable and does not allow a practical description of a methodology for music hybridity. Within this research, notions about the 'true hybrid' shall be regarded as idealistic, and best reserved for biology, chemistry, zoology or other natural sciences, where measurements and processes can be objective.

2.3.2 Elements

Jeremy Mayall (2016) presents a systematic approach to genre hybridisation by introducing a method based on a 'hybridity table'. The table may be used to categorise and describe elements

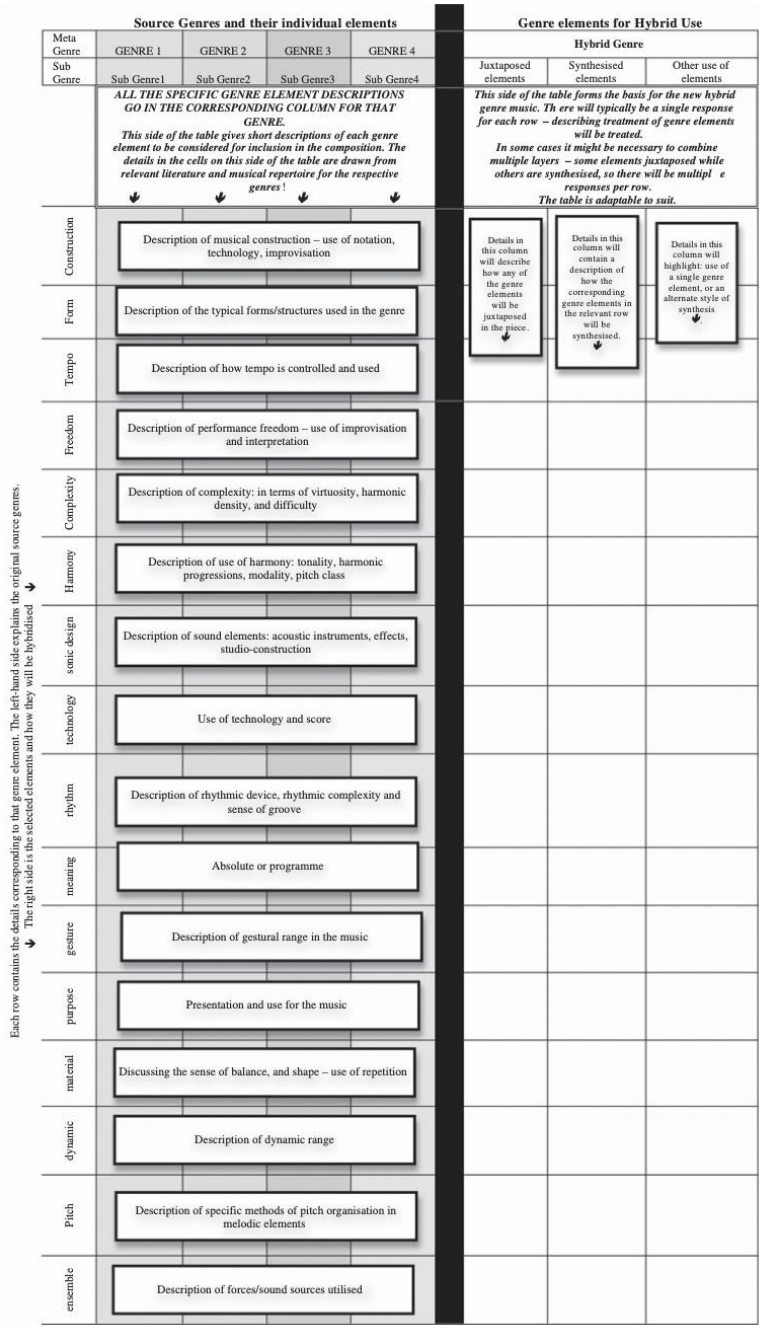
that one may wish to integrate during the process of creating hybrid music; its use implies a characterisation of "key genre elements, determined from relevant genre literature and critical listening to genre repertoire" (p. 32). In this way, a list of generic genre elements is provided, and the user/composer fills in the main features of each element for a specific genre. The list (presented in Figure 3) covers a wide range of elements, from tempo, rhythm, form, harmony, and dynamics, to freedom, complexity, meaning, and purpose, amongst others. Once each genre element has been described, the composer can select which elements are going to be mixed and determine the process behind the integration. Although Mayall's description of elements (for each genre and subgenre) was relatively thorough, the resulting hybridisation process is characterised, in Mayall's terminology, by one of just three categories: 'juxtaposition', 'synthesis' or a category called simply 'other'.

Mayall's approach to hybridisation is certainly interesting, but there are several points at which one might question its use. Firstly, listing the different elements characteristic to given genres make it sound as though one may treat those elements separately—as if they were discrete or autonomous units that may be simply extracted and inserted elsewhere. In practice, however, there is a constant, and often unbreakable, relationship between the elements that comprise a piece of music; if one element is modified, that change will invariably affect one or more other parameters in the work. For example, some might argue that it is difficult to change the melody of a piece without modifying—to some extent—its harmony. In the same way, changing the harmony and rhythm may affect the form of a piece, and so on. Furthermore, if a composer decides to focus mainly on one particular element, it may create an implicit hierarchy that will affect the behaviour of the remaining elements, which will then have to adapt to the most relevant ones, an outcome that highlights, again, the interrelationships that music elements have with one another. Besides this, the very idea of dissecting a genre only to a set of specific elements is, in itself, problematic. The task of selecting features that describe the behaviour of the majority of the works that comprise a particular genre or a subgenre may not be feasible. Objective attempts to discover the 'elements' within the whole of popular music seems unlikely and, for electroacoustic music[7], completely implausible.

[7] Along these lines, Smalley (1997) claims that, although it is possible to find structural levels in a piece, "there is no permanent type of hierarchical organisation for all electroacoustic music, or even within a single work" (p. 114).

Figure 3

Mayall's Hybridity Table



From "Cross-genre Hybridity in Composition: A systematic method", by J. Mayall, 2016. *Organised Sound, 21*(1), p. 33. Copyright 2016 by Cambridge University Press.

Secondly, the selection of a handful of elements may disregard the significance of creative compositional methods; the very thing that will determine the character of a work and the composer that created it (Hugill, 2016; Vaughan, 2016). For instance, the specific compositional method used in *Imago* by Trevor Wishart (2002-2004) gave the work a character that distinguishes it from *Harrison Variations* by Horacio Vaggione (2002), a piece that used the same source material. In the hybridity table, Mayall (2016) alludes to compositional methods when he states that—after listing the genre elements and selecting either juxtaposition, synthesis, or other

for the hybridity process—the composition continues drawing on “traditional compositional methods and allow[ing] for intuition and spontaneous invention” (p. 32). In this sense, although Mayall acknowledges the influence of compositional methods in the creation of the hybrid—as in any other work—composers should work within the remit of pre-determined/specified parameters.

In conclusion, Mayall's 'hybridity table' approach to genre hybridisation, while systematic, presents several limitations. This method assumes that musical elements can be treated as discrete units, ignoring their complex interrelationships. It also oversimplifies genres by reducing them to a set of specific elements, potentially disregarding the nuances and diversity within categories. Finally, this approach may undervalue the importance of creative compositional methods in shaping a work's character. While Mayall acknowledges the role of traditional compositional methods and intuition, the predefined parameters of the hybridity table may constrain the creative process, limiting the potential for an innovative hybrid work.

2.4 Chapter Summary

This chapter explored the hybridisation of electroacoustic and popular music, presenting an examination of current methods and notable works. It began by reviewing recent compositions that incorporate elements from both traditions, showcasing a spectrum of techniques and approaches that challenge conventional genre boundaries. The chapter discusses notable examples, such as works by Åke Parmerud, Autechre, Holly Herndon, Radiohead, Björk, and Nine Inch Nails, highlighting how each artist integrates or experiments with elements of multiple genres, whether through structure, instrumentation, or sound manipulation.

The concept of hybridisation was further explored, introducing various definitions from literature, globalisation theory, and musicology, and arriving at a broad definition: the integration of two or more genres, or genre elements, to create new musical works. This definition aimed to avoid problematic assumptions, such as quantifiable ‘true’ hybrids and perfect blends.

Current methods of hybridisation were critically analysed, focusing on two main approaches: the concept of a ‘true hybrid’ (Friar, 2017) and the ‘element-based’ method (Mayall, 2016). The chapter argued that the notion of a ‘true hybrid’ was problematic in music, as it relied on unquantifiable and subjective criteria. The ‘element-based’ method was also critiqued for its limitations in addressing the complex interrelationships between musical elements and potentially oversimplifying genre characteristics.

The analysis concluded by emphasising the need for a more suitable method for music hybridisation, acknowledging the complexities of genre interaction, the flexibility of creative compositional methods, and the subjective and fluid nature of genre interpretation. It was suggested that future approaches to hybridisation should not be static, allowing for diverse and innovative combinations of electroacoustic and popular music elements, without being constrained by rigid categorisations or methodologies. In the following sections, this research will introduce and develop a hybridisation method with these characteristics.

3 Dynamic Hybridisation: Setting out a Broad Method

3.1 Dynamic Hybridisation Overview

Researchers have argued that composers often produce hybridity in an intuitive, unintentional or subconscious manner, due to the wide array of music genres they compose in, the different styles that have influenced them, or the similarities of the technologies used (Bentall, 2016; Mayall, 2016; Vaughan, 2016). This compositional approach implies a flexibility that is not captured by the approaches to hybridity discussed above. Additionally, composers and compositional methods are not stationary; they change and evolve through time. Perhaps it is necessary, then, to embrace the idea that music composition is not static, but dynamic, and that that dynamism should also be considered and applied to the creation of hybrid pieces. Therefore, this research proposes the term 'dynamic hybridisation' as a more suitable method for creating hybrid music. This method will be regarded *as a reaction to rigid methods of genre integration*, taking into account the adaptability and flexibility that composers show when creating hybrid forms, and the variability of approaches employed by music practitioners. The term, dynamic hybridisation, will be defined as the adaptable process by which a work is created by integrating two or more genre or genre elements. The dynamism part of the term implies that practitioners can utilise methods that are flexible, and that they do not need to abide by ideas of a 'perfect blend' or the integration of only specific elements. Dynamic hybridisation will therefore acknowledge the relationship between the different elements involved in the composition process and their flow during the creation of the hybrid, assuming that a change in one of them will likely involve a reciprocal change in another.

This term, and the general idea, has been influenced by the work of Sarah Weiss (2014), who states that most definitions related to hybridity in music wrongly assume that two different fixed ideas or products are combined to make a (hybrid) third. Advocating an alternative notion which encompasses adaptability in music hybridisation, Weiss argues that music hybrids are aural expressions of "fluid processes and representative of the increasing communicativeness of the world in general" (p. 511). She bases her arguments on the ideas of the hybridity theorist Marwan Kraidy (2002), who proposed that "hybridity needs to be understood as a communicative practice" (p. 317), and as dynamic and complex processes, rather than static states. This approach acknowledges the dynamism behind the 'parent' genres and production mechanisms, and should be considered essential in music hybridisation.

With the above in mind, this research argues that the underlying variability and dynamism of hybridisation needs to be embraced in music practice. Thus, the following sections will elaborate on the method of dynamic hybridisation, the differences with the methods described in the previous sections, and the distinct categories that might emerge under this umbrella.

3.2 Dynamic Hybridisation Categories

Regarding the methods and the resulting hybrid work under the umbrella of dynamic hybridisation, it would be possible to find two subcategories: a hybrid work could be created as

a juxtaposition of materials and elements, or in a sequential manner. These categories emerge after a reflective process on the author's portfolio of compositions and will be used primarily for analytical purposes. They are not meant to constrain the flexible approach of the method of dynamic hybridisation, but only to describe it in greater detail. It will be possible to find any of these two subcategories as the founding method of an entire hybrid work, or it will also be likely to include an additional layer of dynamism and utilise these two categories in different moments of the same piece. These categories will be described in the following sections.

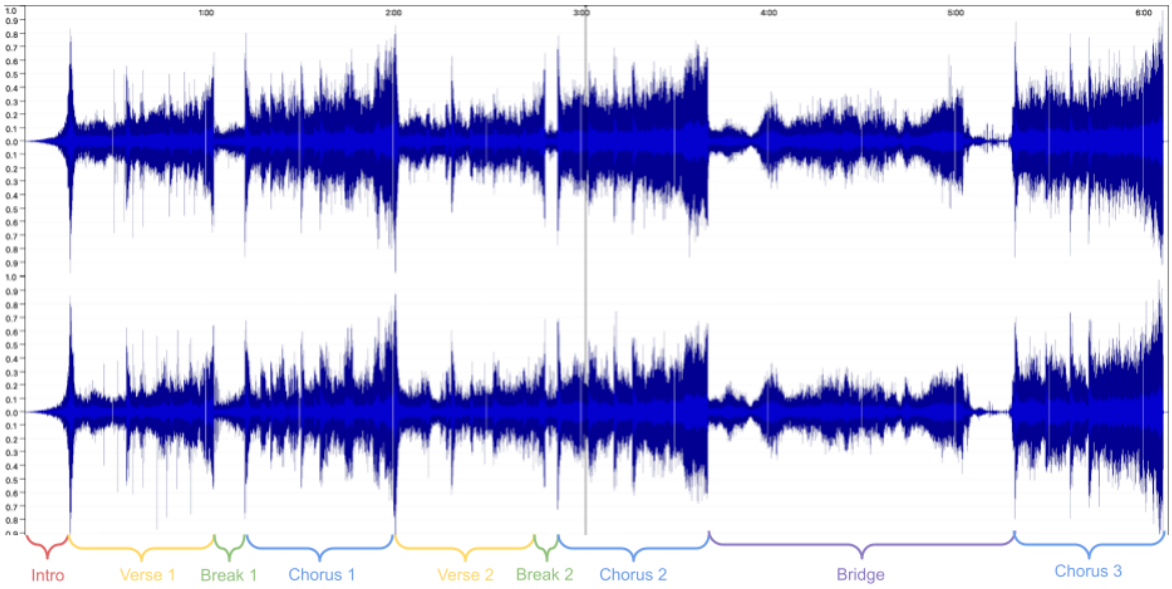
3.2.1 Dynamic Hybridisation by Juxtaposition

A dynamic hybridisation following a juxtaposition method implies that a hybrid is created by juxtaposing elements from different genres at the same time, irrespective of the number of elements included and not following any type of hierarchical relationship. For instance, in the case of electroacoustic and popular music, a hybrid could be created by juxtaposition when a characteristic element from popular music (such as a melodic bass guitar line) is used alongside a characteristic element from electroacoustic music (such as sonic manipulation of said, or other, material). Contrary to the other hybridisation methods outlined in Chapter 2, this juxtaposition will be dynamic; it will not be treated as two fixed elements from two different genres that remain static, but as two layers that merge and intertwine and provoke changes in other elements.

Bricks and Sticks (2021), from the portfolio of this research, is an example of dynamic hybridisation by juxtaposition. While the materials and sonic exploration used are largely associated with electroacoustic music, the form selected for the piece was the verse/chorus variation from popular music (see Figure 4).

Figure 4

Form Analysis of Bricks and Sticks



The piece explores recordings of sticks hitting different surfaces, plus the vocal phrases "what about my bricks and my sticks?" and "what about them!" with several different performances. The

verses are dominated by the first vocal phrase and its variations, layered with sparse melodies and explorations of the sticks material. The choruses intensify the dynamics and the rhythm and add the phrase “what about them”, while the bridge (starting at 3 min 40 s) presents stretched and filtered vocal material, quieter dynamics, and further exploration of the sticks material by processes of granulation and bit reduction. In this way, the only element that can be associated with popular music is the form of the piece, which is constantly juxtaposed with the elements previously mentioned. The dynamism applied in the creation of the hybrid resulted in a bridge that is considerably longer than the usual length of that section in the context of the popular song form. Since the exploration of the materials was aligned with the electroacoustic tradition, more time was needed to complete the desired experimentation, which resulted in an expansion of the verse/chorus form.

Another instance of dynamic hybridisation by juxtaposition from the portfolio is the piece *I’ll Wait* (2022). The work presents lyrics and a vocal melodic line following a verse/chorus variation archetype. In this sense, the specific use of vocal material and the approach to form are closely associated with popular music. However, the rest of the sonic layers of the piece are purely constructed by sonic experimentation, which is largely linked to electroacoustic music. Since all these elements are present throughout the work, it is possible to analyse it as a hybrid created by juxtaposition. An extensive analysis of this work will be presented in Chapters 4 and 6.

3.2.2 Sequential Dynamic Hybridisation

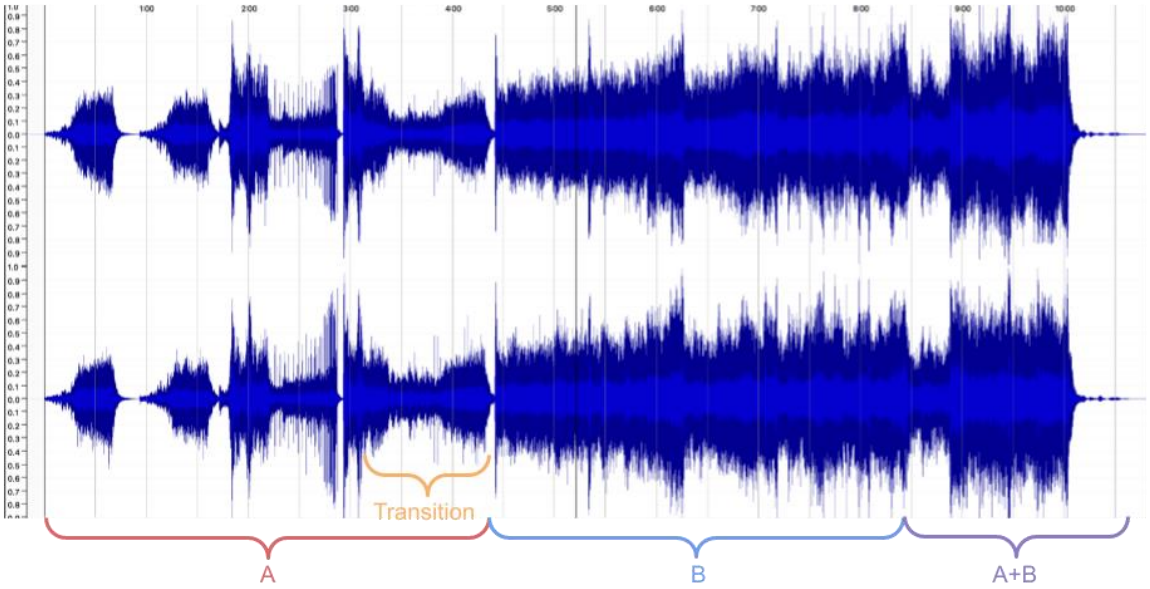
A sequential dynamic hybridisation will have characteristics of a specific genre dominating a section or a subsection of a piece, which will be followed by another section or subsection where the other parent genre will have more prominence. The transitions in this sequence—or movements from one section or subsection to the next one—will be either gradual or sudden.

3.2.2.1 Sequential Dynamic Hybridisation with Gradual Transitions

An example of a gradual transition is found in *As Heavy as a Man*, composed in 2023 as part of the portfolio accompanying this thesis. This eight-channel work presents three main sections, as it is shown in Figure 5. Section A is dominated by a synthesised gesture that rises in intensity and saturation during 40 s, leaving a trail of its presence with a reverberation and a delay that moves in space. This material coexists with several mechanical noises and textures created from pitched sounds played forwards and in reverse.

Figure 5

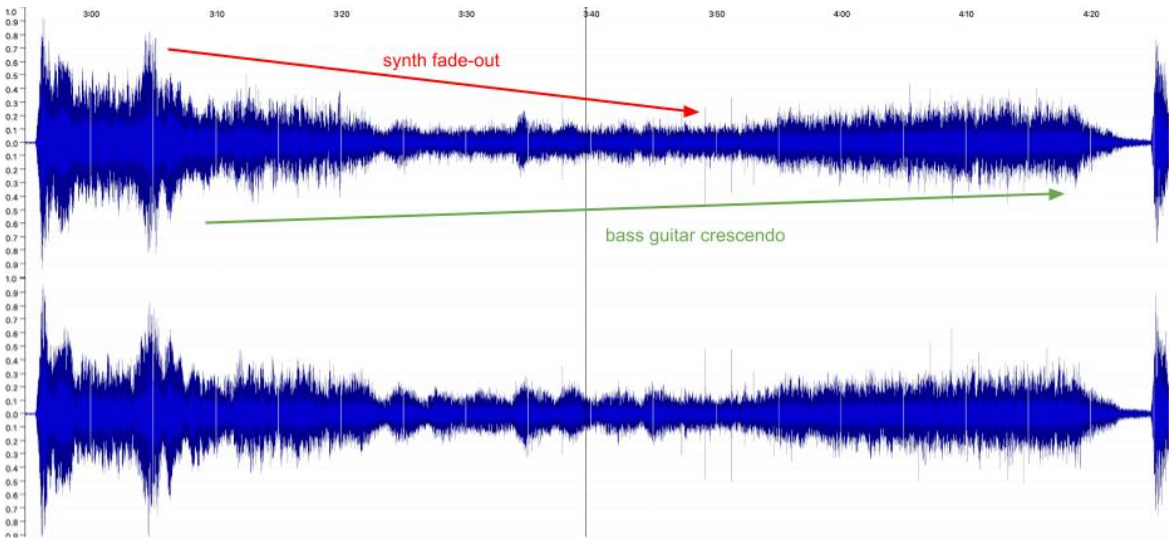
Form Analysis of As Heavy as a Man (front channels)



Section B includes a bass guitar line as one of the main focal points of the piece; however, this material is heavily processed with delay, granulation, and two lines of reverberation (shimmer and plate) in a way that makes it similar to material found in ambient music. The transition between these two contrasting sections is made gradually, in a subsection that lasts 1 min 20 s (from 3 min 20 s to 4 min 25 s) towards the end of section A. Here, the bass guitar is slowly introduced by blending it with the synth gesture; in this way, the trail of that instance of the synth material slowly mutates into the bass guitar and anticipates section B (Figure 6). During this transition subsection, the emerging bass guitar is also blended with the rest of the material previously mentioned, such as the mechanical noises and pitched textures.

Figure 6

Transition between Sections A and B in As Heavy as a Man (front channels)



Then, a heavy gesture opens section B at 4 min 25 s. Here, the bass guitar material is presented with other heavy gestures, mechanical noises, pitched sounds, and heartbeat-like pulses. The bass melodic line begins playing a fast melody that only uses the notes E and G, and progresses to a variation of that melody with the notes E, G, D, and A. The section ends with a crescendo at 8 min 18 s, connecting with the final section of the piece that develops material presented in A and B (A+B). Here, the processed bass guitar is juxtaposed with the synthesisers presented at the beginning of section A, the pitched textures, mechanical sounds, and heartbeat-like noises. It could also be argued, then, that sections B and A+B are examples of a dynamic hybridisation by juxtaposition, where the melodic bass guitar (frequently associated with popular music) is hybridised with other sonic material and processes commonly linked to electroacoustic music.

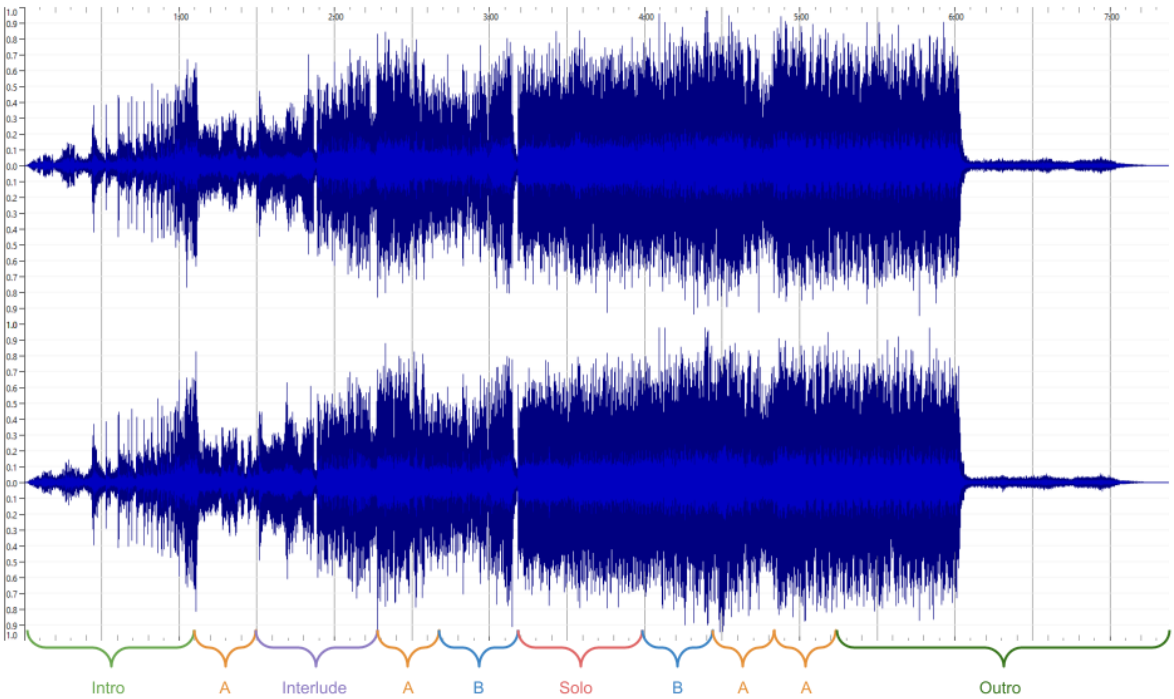
Another instance of a sequential dynamic hybridisation with gradual transitions is the piece *Young Sirs*, composed in 2022. The piece features a transition between two sections by a process of disintegration and reconstruction of material found in the two mesostructures. While material from section A is disintegrated, material from section B is slowly reconstructed. This piece will be thoroughly analysed in Chapter 5.

3.2.2.2 Sequential Dynamic Hybridisation with Sudden Transitions

It could be possible to analyse the approach to form in *Deception*, from 2024, as an instance of sequential dynamic hybridisation. This four-channel piece presents several sections that are dominated by either popular or electroacoustic music elements, and the transitions between those sections are mostly sudden. Figure 7 shows the form of the work.

Figure 7

Form Analysis of Deception (front channels)



This is particularly clear in the initial transitions of the piece. There is a sudden change in the transition from the Introduction to the first A section of the piece, at 1 min 7 s. The Introduction

is dominated by the sonic experimentation characteristic of electroacoustic music, with low drones, electrical noises, pitched textures, and sparse electronic kick drums. Section A, however, only retains the pitched textures and introduces the main vocal line for the first time, shifting the work towards popular music. From that point, the transition to the Interlude, at 1 min 30 s, is also sudden. This section is also dominated by sonic experimentation, and it is, in fact, a development of the Introduction section. Then, a reinstatement of section A—albeit with different lyrics and arrangement—occurs at 2 min 16 s, shifting the hybrid work back to popular music.

Another instance of a sudden transition can be found in *None of This is My Fault*, from 2021. The piece uses the verse/chorus variation as its form archetype, rhythmic structures that tend towards the structural approach from popular music (see Chapter 5), and extensive sonic manipulation from the electroacoustic practice. In that sense, the work could be analysed as a dynamic hybridisation by juxtaposition. However, there are three sections with two corresponding transitions between them that can be analysed as a sequence with sudden transitions. The sequence is the progression from Chorus 2 to Bridge and to Chorus 3. The Chorus sections of the piece are closer to popular music due to their rhythmic content and bass presence, whereas the Bridge is closer to electroacoustic music. The amorphous rhythm, the development of the vocal material, and the dynamics variation position this section closer to that genre. Therefore, the shift between Chorus to Bridge at 2 min 21 is perceived as a change of genre, and it is constructed with a sudden transition. All the material from the Chorus is silenced, new vocal material is introduced, and layers of different textures appear in the background. When this section reaches its climax—by the increase of speed and pitch and the addition of more layers of material—the transition to the final Chorus (at 2 min 58 s) is made suddenly by silencing all the material and leaving the reverb tail as the sole sonic event for 800 ms before the reintroduction of the Chorus. In this sense, *None of This is My Fault* is an instance of both main categories of dynamic hybridisation, and a good example of the dynamism and flexibility of this method.

3.3 Dynamic Hybridisation Foci

The composition and the analysis of a work created by dynamic hybridisation will have different foci. However, and contrary to Mayall's (2016) hybridity table method, it will be possible to *focus* on one or several specific parameters without disregarding the other parameters involved in the compositional process and their interrelationship. This flexibility will enable a more detailed and targeted analysis, as the focus can be shifted to a particular aspect of the composition without sacrificing the overall understanding of the piece. The different foci will serve as the basis for an analytical discussion of hybrid pieces in the next four chapters, and will be aligned with the author's interests as a music artist and researcher and his distinct compositional voice. The musical elements selected as foci will be form, rhythm, voice, and space and performance.

3.4 Chapter Summary

This chapter introduced the concept of dynamic hybridisation as a broad method for creating hybrid music, particularly in the context of electroacoustic and popular music. The proposed approach emerged as a reaction to more rigid methods of genre integration, acknowledging the adaptability and flexibility that composers demonstrate when creating hybrid forms.

The chapter defined dynamic hybridisation as the adaptable process by which a work is created by integrating two or more genres or genre elements. This definition emphasised the fluid nature of the compositional process, recognising that changes in one element often necessitate reciprocal changes in others. The concept drew influence from Sarah Weiss' (2014) work, which advocated for understanding music hybrids as expressions of fluid processes rather than combinations of fixed ideas.

Two main subcategories of dynamic hybridisation were identified and examined:

- Dynamic Hybridisation by Juxtaposition: This method involves the simultaneous use of elements from different genres without a hierarchical relationship. Examples from the portfolio, such as *Bricks and Sticks* and *I'll Wait*, demonstrated how this approach could create innovative compositions that blend characteristics of electroacoustic and popular music. The dynamism implies that these elements do not remain fixed in time but evolve and intertwine, leading to changes in other aspects as well.
- Sequential Dynamic Hybridisation: This approach involves alternating sections dominated by different genre characteristics. This category was further divided into gradual and sudden transitions, providing examples from the portfolio such as *As Heavy as a Man* for gradual transitions and *Deception* for sudden transitions.

The chapter also argued that dynamic hybridisation can have specific foci, which allows for targeted analysis of specific parameters without disregarding other elements of the composition. This flexible analytical approach was presented as an improvement over more rigid methods, such as Mayall's (2016) hybridity table.

By proposing dynamic hybridisation as a method, this chapter set the foundation for a more nuanced understanding of hybrid music creation. It highlighted the importance of acknowledging the inherent variability and dynamism in the composition and hybridisation processes, paving the way for more detailed analyses in subsequent chapters focusing on form, rhythm, voice, and space and performance.

4 Form Focus

4.1 Introduction

This chapter explores the concept of form in music, beginning with a general overview and definitions. It examines how form is approached in electroacoustic music and analyses its treatment in popular music. Subsequently, the chapter introduces approaches to form in dynamic hybridisation, demonstrating how this method integrates formal strategies from both electroacoustic and popular music traditions to create new compositional possibilities. Understanding these varied approaches to form is crucial for appreciating the potential of hybridisation in expanding the boundaries of musical composition. Through this progression, the chapter then establishes a foundation for understanding how dynamic hybridisation challenges and expands traditional notions of musical form.

4.2 Form Overview and Definitions

Unlike other music parameters, the definition of musical form is generally agreed upon amongst scholars and practitioners. Nevertheless, there are still some nuances in current definitions that need to be addressed. Pagliaro (2016) defines form as “the manner in which a composer structures the elements of a work” (p. 145) with musical forms functioning as the foundation for the composer to build upon. Along similar lines, Titon (2009) states that, analogously to other arts such as painting and architecture, musical form means “structural arrangement” (p. 14). In relation to the instrumental tradition, Titon argues that to comprehend form in music, it is necessary to look for organisational patterns in rhythm, melody, and harmony, involving the arrangement of small to medium-sized units that show repetition or variation. It is noteworthy that Titon uses the terms form, organisation, and structure almost interchangeably, with no discernable difference between them.

In a less tangible description, Roads (2015) states that the compositional organisation is “an abstraction—a mental plan for ordering sounds and spawning sound patterns” (p. 283). Roads goes even further by defining form as an aid in contextualising the “internal materials and structures, articulating their structural roles, rendering them … recognizable” (p. 290). However, in a more pragmatic approach, the author also presents different timescales for analysing musical events and works. According to these categories, the ‘macro’ timescale has to do with the “overall music architecture or form” (p. 49), and the ‘meso’ timescale is associated with the divisions of form and the “groupings of sound objects into hierarchies of phrases structures of various sizes” (p. 49). Interestingly, Roads also uses the terms form, structure, and organisation as synonyms.

It is possible to find other definitions that highlight the relationship between the concepts of form and shape. According to Kostka and Payne (1995), form refers to "the ways in which a composition is shaped to create a meaningful musical experience for the listener" (p. 152). In a similar vein, Benward and Saker (2009) argues that form relates to “the larger shape of the composition” (p. 95), and that is—similarly to the view presented by Titon (2009)—the result of the interaction of the structural elements of sound, harmony, melody, and rhythm. Spring and Hutcheson (1995) also mention the relationship between the characteristics of basic musical

parameters and form, and how these elements "give shape to the various formal units of a musical composition (phrases, themes, sections)" (p. 22).

Moreover, the significance of form in musical composition cannot be underestimated. Edgard Varèse speaks highly about form and describes it as the most important aspect of all artistic creations, and that, for him, form is his essential focus as a composer (as cited in Roads, 2015). Additionally, John Young (2016) states that a notion of form in music is "a way of thinking about how we engage with a sense of connectedness and completeness in a work" (p. 58). Therefore, it can be argued that musical form plays a fundamental role in the compositional process, serving as a tool for structuring the various elements of a piece and providing a framework for understanding the coherence and completeness of a work.

Considering all the definitions reviewed, for this research, form will be defined as the way a composition is organised and presented. In that sense, the concept of form will be equivalent to the terms structure, organisation, and shape. Besides that, and following Roads (2015) categorisation, that structure is susceptible to having different levels of analysis, from the macro or the overall shape of a work, to the meso or the differentiation of sections and phrases.

4.3 Form in Electroacoustic Music

It has been argued that approaches to form in electroacoustic music are extremely varied and heterogeneous (Roads, 2015), to the point that it is almost impossible to narrow them down to a few categories. However, since the institutional or academic genre of electroacoustic music is closely connected to Western classical instrumental music, some of the forms found in electronic experimental works appear to be associated with forms used in the instrumental counterparts (Roads, 2015). It would be possible to categorise some structures encountered as binary and ternary form, rondo form, fugue, sonata, strophic form, and variation form, amongst others (Pagliaro, 2016). For instance, in *American Triptych*, Trevor Wishart (1999) uses a structure that can be analysed as follows. The piece, which includes samples from three historical figures—Martin Luther King Jr., Neil Armstrong, and Elvis Presley—(Fogle, 2009) opens with a first section (A) and follows with a second section (B). After this material is introduced, Wishart presents a section that develops the material from the preceding sections (A+B), and then concludes the piece with a second development ((A+B)'). If we assign to A+B the role of a development section of the original material presented in A and B, then the shape would be closer to a variation of the sonata form, with an exposition, development and (in this case) an absent recapitulation. This analysis is presented in Table 1:

Table 1

Form and Sections Duration of American Triptych

Section	Start	Duration	Description
A	00:00	4 min 10 s	Section mainly constructed from manipulations of Martin Luther King's phrase "let freedom reign". The vocal material is stretched, pitch shifted, looped, and granulated. The section also includes a manipulated sample of Elvis Presley's vocals singing "bomp". The section ends with fade-out and silence.
B	04:10	3 min 14 s	A radio transmission of Neil Armstrong is introduced and, subsequently, manipulated. The manipulations include granulations, glitches, pitch shifting, and heavily distorted sounds. It is possible to hear the phrase "the eagle has landed". The radio sounds are also manipulated. The section ends with the word "eagle" stretched followed by "has landed" at normal speed.
A+B	07:24	3 min 18 s	The "bomp" sample is reintroduced with a fade-in, followed by manipulations of "let freedom reign". These materials are presented and further developed in conjunction with the transmission sounds from section B. The section ends with silence.
(A+B)'	10:42	4 min 21 s	The section opens with material from the radio transmission. However, the "bomp" and "let freedom reigns" materials are progressively reintroduced, alongside the new phrase "when we let" from Martin Luther King's speech. This section is calmer than the previous ones, with less distortion and with longer sound events. It closes with a long fade-out.

Going towards the electronica metagenre, *Personal Discourse* by Venetian Snares (1999) uses a variation of a ternary form (see Table 2). The piece starts with an introduction followed by a first section (A) and then transitions to a second section (B). After a short interlude, the piece continues to a variation of the first section (A') and concludes with an outro. In this sense, this work is a variation of the ternary form ABA.

Table 2

Form and Sections Duration of Personal Discourse

Section	Start	Duration	Description
Intro	00:00	41 s	Several vocal phrases with distortion (possibly downsampling) and a synth pad.
A	00:41	1 min 9 s	A first sub-section with electronic drum patterns with the same synth pad from the Intro. A second sub-section with drum patterns and an acid bass that moves around the notes A and B, plus a distorted speech with the phrase "personal discourse".
B	01:50	29 s	Tempo slows down with new electronic drum patterns. A bass drone moves around the notes Eb and A.
Interlude	02:19	21 s	Drum pattern is dropped out and only a few snare hits remain. Bass drone is retained, and some glitches (clicks) are added.
A'	02:31	55 s	Tempo goes back to the value in A, with drum patterns and the phrase "personal discourse". Several variations of the drum pattern. The acid bass now plays Eb.
Outro	03:26	25 s	The drum pattern is disintegrated with delays and the piece ends with a fade-out.

Moving forward, the inception of form in electroacoustic pieces is also a matter of discussion. Some scholars suggest that form in electroacoustic music closely relates to the development of materials presented in a composition. For example, Young (2016) states that "form embraces characteristics of global shaping and its relationship to short-term clusters of events—gestures, phrases, and the dynamic that exists between them" (p. 59). Furthermore, Adrian Moore (2016) maintains that form should be the outcome of the exploration and development of specific sound objects and materials, and not the other way around.

Roads (2015) summarises the approaches to form in electroacoustic practice with the following model. He argues that the macroform of a piece is the result of a compositional design or plan, which can be categorised into three fundamental archetypes: top-down, bottom-up, and multiscale. The top-down approach starts by "predefining a macroform, a template whose details are filled in at later stages of composition" (p. 291). This approach includes the use, for instance, of the aforementioned classical forms, ABA, or the continuous drone. Bottom-up planning "constructs form as the final result of a process of internal development produced by interactions on low levels of structure" (p. 293), resulting in either development (for instance, variations on a theme), sequence layering (where several patterns are constructed and then layered or placed as a sequence), indeterminacy (improvisations), or generative algorithms. Finally, multiscale planning combines both top-down and bottom-up approaches to account for the complex network of relationships among timescales, allowing composers to create pieces with flexibility and variety at the mesostructure level. Supporting this proposition, Stanović (2020) asserts that many electroacoustic composers follow the multiscale approach when conceptualising the form of their works. Concluding, Roads acknowledges that these categories are not comprehensive, and that composers can follow any strategy at any given moment.

About the perception of form and the (at times desirable) lack of symmetry that some electroacoustic works present, Roads (2015) also states that there are three factors that work against perfect hierarchical models and to the differentiation of sections in a piece: 'fuzzy timing', 'mutation', and 'heterarchical organisation'. Fuzzy timing means that "certain sound materials have ambiguous beginning and ending times as they coalesce, evaporate, or mutate" (p. 287). Similarly, mutation refers to the changes of identity a sound can go through in time, and, finally, heterarchy is described as a "complex of simultaneous hierarchies" (p. 288). Consequently, Roads states that if fuzzy timing and continuous mutation are present at the same moment in music, then it will be impractical to partition a structure into discrete substructures. This is also consistent with the concept of 'morphic forms' coined by Trevor Wishart (1994), where a transitional change between sections is seamlessly created from one point to another. Conversely, when a form is created by a juxtaposition of fixed values, Wishart speaks of a 'sequential form'.

In summary, although it is common to find in electroacoustic music structures derived from the instrumental classical tradition, there is a vast diversity of approaches to form in this practice. Additionally, it can be even more difficult to clearly identify a piece's shape due to the factors described in the previous paragraph. Considering also the myriad of genres and subgenres that can be subscribed to electroacoustic music and its focus on experimentalism, it is almost natural that in this genre form cannot be narrowed down to a handful of categories. Therefore, for this research, form in electroacoustic music will not be constrained to a specific palette of categories but to an unspecified and diverse set of shapes. Moreover, and due to the lack of clarity often found in the differentiation of sections, it may be useful to frame musical form as a fluid continuum in electroacoustic music, unlike the more rigid, pre-determined structures of popular music. Finally, when addressing the form of a particular electroacoustic piece in this research, the archetype will be named and best described as one of the many macrostructures found in this experimental practice.

4.4 Form in Popular Music

As discussed in Chapter 1, this research regards popular songs as the overarching archetype of popular music works. Within this framework, the distinctiveness of elements of rhythmic patterns, dynamics, orchestration, harmonic progressions and melodic and lyrical content, largely determine the differentiation of the composing units of the pieces, from the scale of the phrase to the complete section (A. F. Moore, 2012). Furthermore, and in contrast to electroacoustic music, the sections of popular songs are more readily discernible due to the cues presented via the aforementioned parameters, such as changes in the lyrics, variations in the arrangement, and percussion cues, amongst others.

It has been suggested that in popular songs, music and form may begin from either the inception of small components or with a predetermined framework in mind (Middleton, 1999). Considering this, the approach taken by popular music practitioners would be similar to the bottom-up, top-down, and multi-scale views presented by Roads (2015). Although the resulting forms from these approaches can be at times considered subjective or ambiguous (de Clercq, 2017), Appen and Frei-Hauenschild (2015) have identified three primary categories into which the forms of popular music compositions frequently fall.

- Verse/chorus form and its variations. This form features the inclusion of a chorus, a section that consistently repeats without significant harmonic, melodic or lyrical modifications; and verses, which remain fairly consistent in melodic and harmonic content but vary with lyrics (Appen & Frei-Hauenschild, 2015). Besides this, it is possible to find other supplementary sections, such as, the introduction, pre-chorus, post-chorus, interlude, tag, solo, bridge, collision, and outro or coda (Covach, 2005; Everett, 2009; A. F. Moore, 2012; Shave, 2008). Some instances of the use of this form in popular music include *Ship to Wreck* by Florence + The Machine (2015), *Four out of Five* by Arctic Monkeys (2018), and *Physical* by Dua Lipa (2020).
- AAA form and its variations. Also referred to as strophic, or simple verse form, this model features a recurring section throughout the piece that maintains harmonic pattern, similar melody but incorporates different lyrics. (Appen & Frei-Hauenschild, 2015) This A-section typically opens or closes with the same line of text, called refrain, though it does not transition to a different B-section or to a chorus. This model includes the well-known twelve-bar blues form. Some examples of the use of this form include *Tomorrow Never Knows* by The Beatles (1966), *Sabotage* by Beastie Boys (1994), and *Seventeen Going Under* by Sam Fender (2021).
- AABA and its variations. Also known as the ballad form, this model derives from the American Popular Song, and it was extensively used by the Tin Pan Alley tradition as well as during the first decades of rock and roll (Covach, 2015; A. F. Moore 2012). This form presents an A-section, often called verse, that contains the title of the song in its lyrics (Appen & Frei-Hauenschild, 2015). After a reprise of this section with different lyrics, a contrasting B-section, often called middle-8 (A. F. Moore, 2012), is introduced and followed by a new iteration of the A-section. Some examples of the use of this form in popular music include *Personal Jesus* by Depeche Mode (1990), *Friday I'm In Love* by The Cure (1992), *Don't Know Why* by Norah Jones (2002).

Besides this structural analysis, it is noteworthy mentioning a contribution developed by Asaf Peres (2016, 2018). Peres favours analysing a modern popular song by its sonic dimension instead of its songwriting dimension. The rationale for this novel approach is that it is not possible to describe and classify form in modern popular music only through changes in harmonic, melodic, and rhythmic patterns. Instead, it should be acknowledged a dominance of what Peres calls a 'sonic syntax', defined as "a musical grammar that relies on manipulation of timbre, sonic density (the presence and amplitude of frequencies across the sonic spectrum at any given moment), and rhythmic intensity" (Peres, 2016, p. 2). He then names 'sonic energy' to the sum of these elements. This approach is similar to the one presented by Allan F. Moore (2012) and his concept of 'soundbox', where all the elements of a mix of a recorded song can be analysed as layers with their position in different axes depending on their spectral content, spatial location, level, and depth. Furthermore, the view introduced by Peres is consistent with the wide use of modern production techniques in popular music, where technology and sound processing are at the forefront of music creation and where harmony is somewhat abandoned as the primary means for creating tension and release.

Peres' sonic syntax is composed of three stages or functions: setup, buildup, and climax, all three parts of a particular energy cycle. According to his view, "[t]he setup constitutes a *baseline* of sonic energy, while the climax is a peak of sonic energy" (Peres, 2018). Finally, the buildup represents an increase of tension that anticipates the arrival of a climax. Peres argues that the most common

ways to create a buildup are by adding elements to the sonic texture, removing key elements from the sonic texture (or creating a sonic void), and inserting gradual gestures (such as, filter sweeps risers and ascending pitch bends).

Considering these functions, Peres (2016, 2018) goes further by stating that the sections in a verse/chorus variation archetype can be associated with different parts of the energy cycle. For instance, Peres equates the verse to the setup, the pre-chorus to the buildup, and the chorus to the climax. Besides this, Peres also links the bridge section to a buildup stage that creates energy and arrives at the climax of a final chorus. In that sense, this archetype could also be described as the representation in Table 3.

Table 3

Equivalency of Sections in a Verse/Chorus Variation and Peres' Energy Functions

Setup	Buildup	Climax	Setup	Buildup	Climax	Buildup	Climax
Verse 1	Pre-chorus 1	Chorus 1	Verse 2	Pre-chorus 2	Chorus 2	Bridge	Chorus 3

Peres (2018) takes this approach one step further and argues that these sections can also be analysed in a higher structural level, which he calls 'meta-sections'. Since the structure of Verse/Pre-chorus/Chorus is repeated with some variations (arguably, lyrical and timbral), the original instance and its variation can be represented as the meta-sections A and A', respectively. Consequently, the final pairing of bridge and chorus would be associated with a new meta-section B, as it is shown in Table 4.

Table 4

Equivalency of Meta-Sections in a Verse/Chorus Variation and Peres' Energy Functions

Setup			Buildup			Climax	
A			A'			B	
Setup	Buildup	Climax	Setup	Buildup	Climax	Buildup	Climax
Verse 1	Pre-chorus 1	Chorus 1	Verse 2	Pre-chorus 2	Chorus 2	Bridge	Chorus 3

These meta-sections can also be linked to functions of the energy cycle. In that manner, the first appearance of the Verse/Pre-chorus/Chorus structure will be characterised as a setup, the second one as a buildup, and the bridge and final chorus as the climax of the song.

This analysis has the potential of being useful when discussing the form of a modern popular song, since, at times, the traditional songwriting dimension conformed by harmony, melody, rhythmic patterns and lyrics does not convey all the necessary information. Additionally, there are instances where those parameters are not used in an identifiable tonal manner. In this way, characterising the structure of a piece by its production dimension and looking at changes of energy due to sonic density, timbral and spatial alterations makes particular sense in an era dominated by sound production and technology. Therefore, this analytical approach will also be

considered in this research when describing popular music works or hybrid pieces from the portfolio accompanying this thesis.

In view of the above descriptions, it would be possible to argue that the approaches to form in electroacoustic and popular music are significantly different. Electroacoustic music often embraces diffuse and non-hierarchical structures, exploring temporal flexibility and the development of materials. In contrast, popular music forms tend to adhere to more conventional song structures, with a clear emphasis on the verse/chorus archetype and its variations, traditional songwriting elements, and, more recently, sonic density and energy. These contrasting approaches offer a rich foundation for hybridisation, allowing for the exploration of new formal possibilities that combine the experimental nature of electroacoustic music with the accessibility and memorability of popular forms.

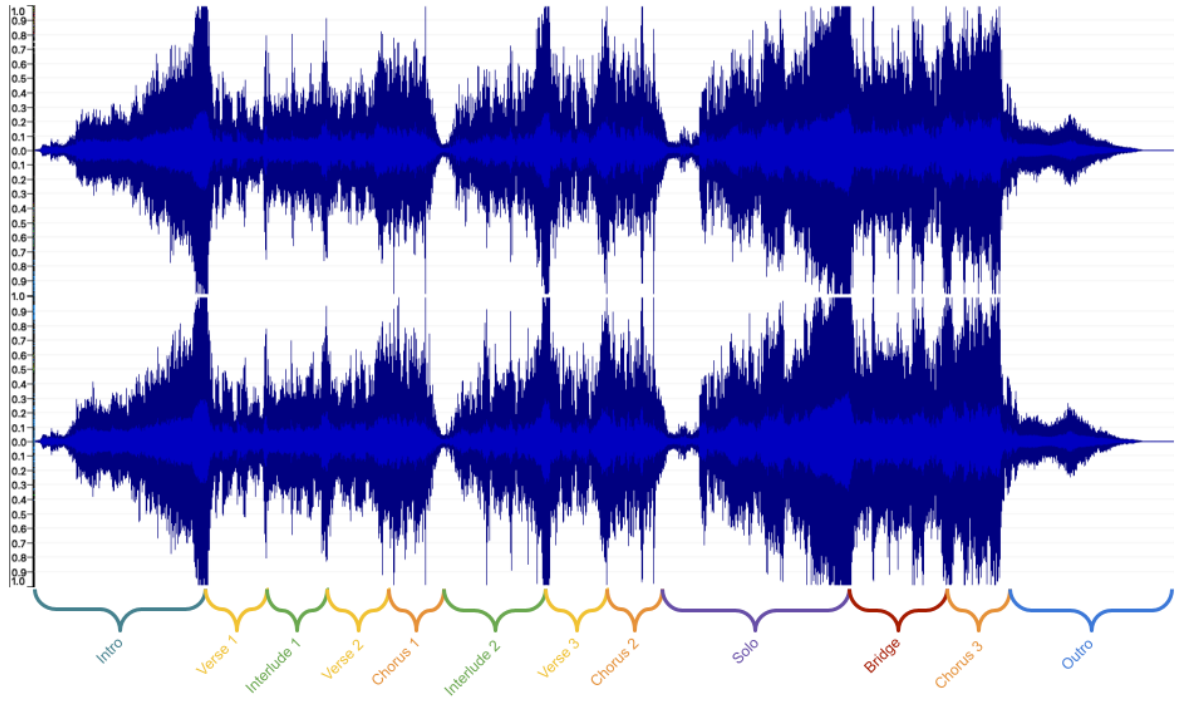
4.5 Form Focus in Dynamic Hybridisation

This section introduces and explores dynamic hybridisation in practice, with a focus on form. Unlike examples of static hybrid forms (discussed in Chapter 2), dynamic hybridisation allows for a constantly shifting balance between different elements throughout a piece, creating a rich and ever-evolving musical landscape. This approach not only challenges traditional notions of form but also opens new possibilities for composition and expression. The following discussion will examine the application of dynamic hybridisation through case studies and consider its implications for contemporary music composition.

I'll Wait was the second piece from the portfolio that used one of the form archetypes associated with the popular song. An overview of the resultant form is presented in Figure 8.

Figure 8

Form Analysis of I'll Wait



The idea behind this piece was to investigate what can be described as an electroacoustic love song. The work consists of a song with lyrics and a vocal line (see Appendix I.1) sung by the mezzo-soprano Mia Martinovic at an approximate tempo of 90 BPM. The piece follows the verse/chorus variation as its overall structure; in this sense, the elements taken from the popular music practice to create the hybrid were the vocals, the melody, and a song-form archetype. However, the piece does not include a standard popular music rhythmic section as there are no repetitive rhythmic patterns and no harmonic or melodic support. Instead, the background material is developed by experimentation and following Roads' bottom-up approach. These background elements are mainly composed of different vocal manipulations that take the lead vocal line as raw material, plus low-density rhythmic gestures that tend towards an amorphous approach (see Chapter 5), and various layers of synthesisers. Consequently, it is possible to analyse this piece as an instance of dynamic hybridisation where a juxtaposition of features from different genres are used to create a new hybrid work; in this case, a singing vocal line and a popular form are integrated with material and manipulations characteristic to electroacoustic music.

Further to the above, there is a dynamism in the duration of the different sections of the piece, as shown in Table 5. Although verses and choruses have a duration consistent with other works found in popular music, certain sections of *I'll Wait* stand out because of their atypical time span. For instance, the introduction and outro of the piece are unusually long for a popular song (Attas, 2015), with 1 min 2 s and 56 s, respectively. Besides this, the duration of the interlude sections is not consistent throughout the piece, and the section labelled 'solo' is particularly long, being 1 min 4 s. This specific section, usually reserved for an instrumental solo in a popular song, was used for experimenting with the vocal manipulations presented in the previous sections; time

was required to develop those sonic explorations[8]. In this way, and through the process of dynamic hybridisation, the popular song form was expanded due to the characteristic sonic experimentation of electroacoustic music.

It is worth noting that the tempo of the piece speeds up as the work progresses. It starts with a value of 90 BPM, and it gradually increases until it reaches 96 BPM by the beginning of the bridge section. Tempo was, then, used as another parameter to help build the climax of the piece. There are several instances where the time signature shifts from 4/4 to 2/4, but for simplicity, Table 5 only shows section duration in bars of 4/4.

Table 5

Form and Sections Duration of I'll Wait

Section	Start	Duration (min s)	Approximate Duration (bars)	Tempo (BPM)
Intro	00:00	1 min 1 s	23	90
Verse 1	01:01	21 s	8	90
Interlude 1	01:22	21 s	8	91
Verse 2	01:43	21 s	8	92
Chorus 1	02:04	22 s	9	92
Interlude 2	02:26	37 s	14	92
Verse 3	03:03	20 s	8	94
Chorus 2	03:23	23 s	9	94
Solo	03:46	1 min 4 s	25	94-96
Bridge	04:50	36 s	16	96
Chorus 3	05:26	24 s	9	96
Outro	05:50	57 s	23	96

Although the piece does not include any harmonic accompaniment, it is possible to analyse the piece as a composition that revolves melodically around the keys of D minor and A Phrygian. The verses in *I'll Wait* largely move around the note A as a primary focal point, whereas the choruses tend to be centred around D. Additionally, for phrase and section differentiation, there is a distinct rhythmic and melodic pattern on the vocal line that characterises verses, and a different one for choruses. Every iteration of these sections is consistent with its respective pattern, except for minor alterations resulting from lyrical changes. Furthermore, the bridge (used as a buildup section towards the climactic last chorus of the piece) displays an internal structure that can be divided in four phrases; each of them exhibits almost an identical rhythmic and melodic pattern, projecting an image of repetition and obsessiveness encapsulated in the lyrics.

[8] An expanded analysis of the vocal manipulation in this piece can be found in Chapter 6.

The integration of popular song form archetypes in an experimental electronic context has other precedents. The works *Chorus* and *Morning Sun* by Holly Herndon (2015) display forms that can be described using a verse/chorus variation structure. In *Chorus*, Herndon uses a form that can be broadly delineated as follows: Introduction, Verse 1, Chorus 1, Verse 2, Chorus 2, and Outro (see Table 6). Nevertheless, it is noteworthy that this composition deviates from the conventional popular music practice of using lead vocals as the primary foreground element; Herndon incorporates short vocal samples (almost syllabically) and vocal manipulations with specific pitches to create melodic motifs, even inserting a clear harmonic support during the chorus sections. There is also a rhythmic pattern that is present throughout the chorus that helps to better differentiate this section from the verses and their more amorphous approach to rhythm.

Table 6

Form and Sections Duration of Chorus

Section	Start	Duration	Description
Intro	00:00	48 s	Very low drones, vocal material heavily processed and sparse electronic percussion.
Verse 1	00:48	1 min 15 s	Rhythmic pattern constructed with vocal samples. A sense of 4/4 time signature with electronic bass and percussion. Introduction of melodic theme 1 with processed vocal material.
Chorus 1	02:03	47 s	Rhythmic pattern with electronic drums and bass established. Introduction of theme 2 with processed vocal material. Harmonically, it moves around the progression of the chords Am and Dm.
Verse 2	02:50	1 min 54 s	Similar structure of Verse 1. Variations on electronic drums, bass and on theme 1.
Chorus 2	04:44	47 s	Same as chorus 1.
Outro	05:31	23 s	Sparse percussion and bass. Textures created with vocals, going away in fade-out.

In *Morning Sun*, Herndon (2015) also uses a form that can be outlined by the verse/chorus variation archetype—albeit much less rigid than the previously described piece. Here, Herndon principally uses a vocal line and lyrics as the primary foreground element of the piece. Furthermore, constant harmonic support is achieved through the integration of pitched and arpeggiated vocal samples in conjunction with a rhythmic pattern that leans towards a more structural approach (see Chapter 5). Finally, a clear sense of tempo can be appreciated throughout the composition, serving to further integrate the rhythmic and melodic elements to the piece.

4.6 Chapter Summary

This chapter explored the concept of form in both electroacoustic and popular music, highlighting the distinct approaches in each genre and laying the foundations of dynamic hybridisation with a focus on form. The discussion began by establishing a general definition of musical form as the structural arrangement or organisation of a composition, noting its equivalence to terms such as

structure, organisation, and shape. This definition encompasses both macro and meso levels of analysis, providing a framework for understanding musical form across different genres.

In examining form within electroacoustic music, a landscape of highly varied and heterogeneous approaches was described. While some forms in this genre draw inspiration from classical instrumental music, electroacoustic composers often employ more experimental techniques. Following the views of Roads (2015), three primary archetypes of compositional planning were identified: top-down, bottom-up, and multiscale approaches. These strategies describe whether form is a result of a pre-established plan, emerges from the exploration of material, or as a combination of approaches. This variety, however, often defies strict categorisation due to fluid transitions and sound mutations, amongst others, making the differentiation of sections in electroacoustic works particularly challenging and contributing to their unique aesthetic. Examples of works like Trevor Wishart's *American Triptych* and Venetian Snares' *Personal Discourse* demonstrate how form in electroacoustic music may be analysed through lenses akin to classical forms, albeit with notable differences.

Contrastingly, the exploration of form in popular music revealed more discernible structures, often demarcated by clear cues in lyrics, arrangement, and rhythmic elements. Three primary categories of popular music forms were outlined: the verse/chorus structure and its variations, the strophic form, and the ballad form. Each of these archetypes offers a familiar framework for listeners while allowing for creative variations. Recent theoretical contributions (Peres, 2016, 2018) suggest that form in popular music also relies on the manipulation of timbre, texture, and sonic energy, offering additional analytical possibilities beyond traditional songwriting dimensions.

The chapter then explored the concept of dynamic hybridisation with a focus on form, which combines approaches from both electroacoustic and popular music. This umbrella method opens new avenues for musical composition, allowing, for instance, for the expansion of traditional popular song structures through electroacoustic experimentation. *I'll Wait* was examined as a case study of this hybridisation, where a verse/chorus variation is integrated with sonic manipulation, resulting in extended sections and an innovative approach to the song form.

The following chapter will follow a similar approach, but with a focus on rhythm.

5 Rhythm Focus

5.1 Introduction

This chapter begins by describing and analysing the two main definitions of rhythm and its associated parameters as found in existing literature. It then characterises these parameters within popular and electroacoustic music, emphasising their significance in the context of hybrid compositions. Finally, the chapter concludes with an analysis of rhythm in hybrid compositions, drawing on examples from the accompanying portfolio of compositions and a selection of works by various composers.

5.2 Rhythm Overview and Definitions

The centrality of rhythm in music is undeniable. It is considered to be "the most fundamental element in all forms of musical expression" (Roads, 2015, p. 136), a "primordial and perhaps essential part of music" (Messiaen, 1986, as cited in Samuel, 1994, p. 67), and "the element in music that gives life to the work and holds it together (Varèse & Wen-chung, 1966, p. 15). Rhythm both organises and is organised by "all the elements which create and shape musical processes" (Cooper and Meyer, 1960, p. 1). Just like many other musical parameters, however, establishing a definition for rhythm can be problematic. In this regard, it can be argued that there are two main approaches related to the definition of rhythm in music, which will be reviewed in the following paragraphs.

The initial approach is primarily derived from the perspective of Cooper and Meyer (1960). According to this framework, rhythm is viewed as one of the three basic modes of temporal organisation, alongside pulse and metre. Therefore, to establish a comprehensive definition of rhythm, it is necessary to address the other modes first. Pulse is defined by Cooper and Meyer (1960) as "a series of regularly recurring, precisely equivalent stimuli" (p. 3). In this regard, a sense of pulse can be established either by actual sounds, or it may be implicit in the music even if there are no equally spaced sound events in a section or a piece. Nonetheless, it is worth noting that once a pulse is established, it "tends to be continued in the mind and musculature of the listener, even [if] the sound has stopped" (p. 3).

The parameter of metre, as defined by Cooper and Meyer (1960), is "the measurement of the number of pulses between more or less regularly recurring accents" (p. 4). That means that, for a metre to exist, some of the pulses of the series must be accented relative to others. The authors argue that when pulses are counted within a metric context, they are referred to as beats. Consequently, accented beats are called 'strong', and unaccented ones are 'weak'. This is consistent with the interpretation of Tagg (2013), who associates metre with regular groups of beats that are recurring and separated at regular intervals. He goes even further by stating that the underlying pace of a piece of music is measured in beats per minute (BPM) and that the basic unit of metre is the bar.

Finally, rhythm is defined as "the way in which one or more unaccented beats are grouped in relation to an accented one" (Cooper & Meyer, 1960, p. 6). The authors emphasise their view by stating that rhythm "always involves an interrelationship between a single, accented (strong)

beat and either one or two unaccented (weak) beats" (p. 6). Although Tagg (2013) notices that rhythm is loosely used as well to describe other parameters, such as tempo, surface rate, metre and groove, amongst others, he defines rhythm as "the temporal configuration of notes and pauses between notes (short or long, weak or strong, etc.) to produce recognisable patterns of sound in movement" (p. 292). In this way, Tagg acknowledges the notion presented by Cooper and Meyer (1960), and even remarks that a single note does not constitute a rhythm, nor the ticking of a clock or metronome, i.e., a pulse; such events can become a rhythm if they are in a piece of music that contains "other temporal configurations and pauses between notes" (p. 292).

It can be argued that the two definitions previously reviewed are much more closely related to the field of instrumental music and consequently, to popular music. This position is supported by Javier Álvarez (1989), who states that these types of definitions around rhythm are thought to be applied to "musical time *as notated* and not as the *actual sound experience*" (p. 206).

The second approach to definitions of rhythm can be introduced by the views of Álvarez (1989) himself, who connects this parameter to the idea of motion in music:

> [R]hythmic structures constitute perhaps the strongest temporal references by which motion is discovered by the listener, and by which dynamic musical gestures can be constructed. Motion is the meaning of rhythm. Motion can after all be understood as an emergent property of physical gesture. In this sense, my notion of 'rhythm' is holistic. By 'rhythm' I am implying the collection of all such discrete, aurally identifiable gestures. (p. 207)

This broader approach is also shared by Curtis Roads (2015), who defines rhythm as "any temporal structure or pattern" (p. 136). He also declares that other internal undulations, such as vibrato, tremolo, and swells are subsumed by rhythm. In this way, Roads claims that rhythm should not be perceived as "a series of points and intervals on a timeline grid, but rather as a continuously flowing temporal substrate" (p. 137). He summarises his definition of rhythm by arguing that "music expresses rhythm on multiple timescales through patterns of pitch, amplitude, timbre, and space, in undulations, modulations, and changes of density, as well as by onsets and durations" (p. 138). Thus, for Roads, composing is not "a matter of filling or dividing time, but rather of generating it" (p. 193). This approach is similar to the one introduced by Simon Emmerson (2008), who defines rhythm as "a particular sequence of sound events perceived in time" (p. 1). Similarly, the views of Hartenberger and McClelland (2020) are aligned with the same approach by refusing to define rhythm solely in terms of patterns of weak and strong beats. In contrast, the authors prefer using rhythm as "the best single-word option for referring to 'musical time' or 'temporal organization of music'" (p. 1).

This second set of definitions associated with rhythm can be considered as an umbrella approach to the parameter. This approach appears to have applicability to any kind of music or form of artistic expression that employs time as one of its dimensions. Since notation, pulse, metre, and beat are not part of this definition, any temporal organisation of musical events can be thought of as rhythm. Thus, it could be argued that this approach possesses a greater degree of abstraction in comparison to the first one and, therefore, can include the types of temporal organisations found in popular music, but also in electroacoustic music. However, and as shall become apparent through the discussion below, some differences still exist between the use of rhythm in

electroacoustic and popular music that may not be entirely resolved by the usage of either of the two approaches to rhythm described earlier.

5.3 Rhythm in Popular Music

The importance of rhythm in popular music is widely acknowledged. It has even been characterised as a "defining feature of [the] genre and the subject of lively debates among players, listeners, and especially dancers" (Hartenberger & McClelland, 2020, p. 3). As it discussed in previous sections, the use of rhythm in this genre is largely related to the concepts of pulse, beat, and metre. However, one of the most relevant features is the use of rhythmic patterns to structure a work.

Regarding pulse and beat, it is very common to find that beat is mostly sustained throughout a section or an entire piece by an explicit beat layer (A. F. Moore, 2012), with the beat exhibiting limited changes on a macroscale level (Roads, 2015). Additionally, perceived rhythmic patterns in popular music tend to follow tempo values ranging between approximately 40 and 125 BPM (de Clercq, 2020; Roads, 2015, Tagg, 2013). Deviations from this range towards the low or high end would result in a shift in tempo perception for the listener, who would tend to go to a value that doubles or halves the original BPM (known as double-time, or half-time, respectively). This is because of the difficulty to align the tempo of the piece to an underlying pulse in the body (de Clercq, 2020; Roads, 2015). Notably, this underscores the close relationship between rhythm and the human body, which several authors have identified as being of particular significance in both instrumental music and popular music (Cameron & Grahn, 2020; Cooper & Meyer, 1960; Emmerson, 2001; Roads, 2015; Sliwinski, 2020; Tagg, 2013).

After the emergence of rock and roll, popular music pieces frequently utilise rhythmic patterns in which the kick drum occupies beats 1 and 3, while the snare drum appears on beats 2 and 4 (commonly referred to as the 'backbeat') (de Clercq, 2020; A. F. Moore, 2012). On top of that, the hi-hat, ride, or tambourine would be "playing some metrically congruent division of the measure into equal parts" (de Clercq, 2020, p. 183). Additionally, arguably one of the most important characteristics of rhythm in popular music is the use of syncopation and non-traditional accent patterns in the melodic and harmonic content, predominantly anticipatory syncopation and cross rhythm (de Clercq, 2020; Middleton, 1990; A. F. Moore, 2012).

Rhythm also plays a key role in the structural organisation and form of popular music. Through the creation of repetitive rhythmic patterns (or loops) and their assignment to elements from the rhythmic ensemble, it is possible to establish and distinguish different sections in a piece that complement the harmonic and melodic content (de Clercq, 2020; Moore, A. F., 2012; Tagg, 2013). Furthermore, the inclusion of repetitive patterns has been identified as a defining characteristic that differentiates popular from electroacoustic music: "[t]he two worlds of high art and popular electronic music may use slightly different tools, but their aesthetic approaches are most clearly defined in terms of the presence or absence of repetitive beats" (Neill, 2002, p. 3).

5.4 Rhythm in Electroacoustic Music

The relationship of rhythm and electroacoustic music has been, historically, a controversial one. Since the tenets of the tradition of electroacoustic music (or at least of the early musique concrète

and elektronische Musik) imply a break from the parameters used in the instrumental tradition, "the introduction of rhythmic (or metrical) elements into electroacoustic music has caused certain unease" (Emmerson, 2008, p.1). Moreover, when rhythm is addressed by electroacoustic practitioners, there is a "general sense of abstraction with regard to the more regimented, grid-like structures of traditional tonal music" (Andean, 2020, p. 214) since at times rhythm is equated with beat or pulse. Some scholars have even argued that the inclusion of rhythm in electroacoustic music is better appreciated as an extension of the instrumental tradition supported by electroacoustic technologies, in contrast to being viewed as part of the electroacoustic tradition. This is because it sustains a closer link with the responses associated with the human body, notably with the parameters of pulse, beat, and rhythm (Emmerson, 2001).

It has also been noted that electroacoustic composers, including Stockhausen and Wishart, and modern instrumental composers like Messiaen and Boulez, disfavoured the use of periodic rhythms and repetition due to their relationship with military marching and industrial machinery, both of which symbolise oppression and social imprisonment (Emmerson, 2001; Samuel, 1994; Sliwinski, 2020). In this sense, the rejection of pulse and periodic rhythms in contemporary and avant-garde music by the generation associated with the Second World War can be regarded as a detachment from previous practices but also as an act of political rebellion, signifying liberation from societal constraints.

Andean (2020) argues that, since rhythm is usually equated with metered pulse—a parameter often avoided in contemporary music—it is common to assume that there is no rhythm in acousmatic music (a subgenre of electroacoustic music). However, Andean proposes that acousmatic music does use rhythm, and that this parameter constitutes one of the driving forces of the genre. He states that it is our "sense of embodiment and ecological experience of the world" (p. 216) that informs our understanding of the temporal relations found in, at first glance, disconnected events of materials in acousmatic pieces. In that way, "[a]cousmatic music is therefore rhythmic in nature because the world is rhythmic in nature, with the rhythmic qualities of the world leaking into acousmatic works" (p. 217).

According to Roads (2015), rhythm is very much present in electroacoustic music, as it frequently "emerges as the dominant element in a flux of ever-changing parameter interactions. Indeed, rhythm is the sum total of all parameter interactions" (p. 192). Roads also affirms that, in electroacoustic music, studio practice facilitates flexibility and allows access to the "entire field of rhythm on multiple scales" (p. 155). This flexibility allows for working with rhythm at the grain or sample level, up to long patterns, loops, or even entire sections.

At times it is also possible to assign an underlying pulse to an electroacoustic piece that, apparently, does not have one, due to the cognitive reception of musical rhythm. Andean (2020) claims that, for instance, the setting of an underlying pulse takes very little work, requiring only a few iterations of a sound event. Once established, the brain retains this pattern automatically until some significant change appears. Andean summarises the consequences of this in the following manner:

> [I]n acousmatic music, it is not that the composer establishes a fixed pulse, metre, or beat for the work, but rather that the listener, in the first moments of the work, latches onto any available rhythmic clues they might unearth from the very first sound materials, and

> then unconsciously retains that pulse or beat for the duration of the work (or possibly until something sufficiently dramatic happens to force them to shift to a new or altered sense of pulse or rhythm). (p. 218)

Additionally, Andean (2020) notes that in recent years, "acousmatic music has experienced what we might call the 'rhythmic turn'" (p. 214), with many compositions incorporating pulse, metre, and rhythmic patterns. Notably, many electroacoustic composers have started using repetition in their pieces, and it has been argued that one of the consequences of using repetition is the generation of pulse and a sense of rhythmic patterns (Álvarez, 1989). This is in line with Emmerson's (2008) description of how composers like Alejandro Viñao, Javier Álvarez, and Julio D'Escrivan have used rhythm and repetition as a "critique of the relationship of pulse (and rhythm) to modernism in general, and within electroacoustic music in particular" (p. 1).

5.5 The Rhythm Spectrum

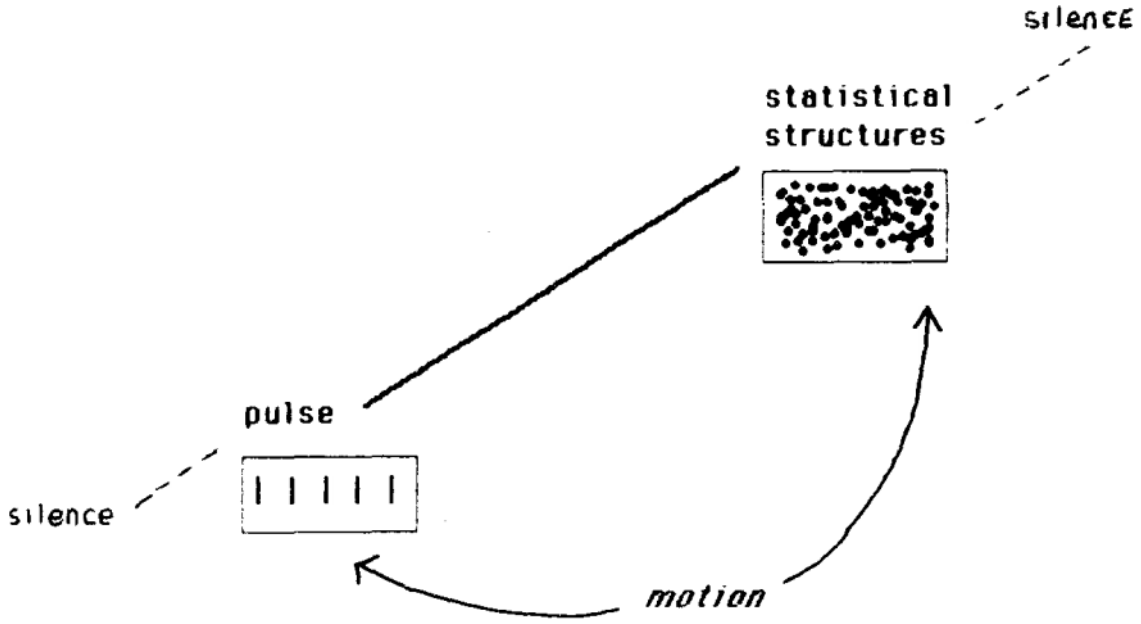
Based on the discussions presented in the previous sections, it can be argued that popular music is closely related to an approach to rhythm linked to beat and metre, while electroacoustic music is more inclined towards a wider approach. However, these observations should only be taken as generalisations. For instance, it is possible to find examples of pieces, linked to the electroacoustic genre, that utilise an approach close to beat and metre, and pieces from popular music with a more amorphous approach. For example, there are several moments in *Grooves* by Åke Parmerud (2011) where there is a clear sense of pulse, and where the repetition of patterns is reminiscent of kick drums from the IDM or EDM repertoire. Similarly, the repetition of gestures that resemble arpeggiators in *Junky*, by Adrian Moore (1996)—in a section that is primarily driven by pulse—is associated with beat and metre. Conversely, the first two minutes of *Von* by Sigur Ros (2007) are texture-based, with synthesisers and strings playing in a drone fashion with no discernible pulse or rhythmic pattern. In a similar way, *Aeon XX* by Lacuna Coil (2022) presents noise-based textures and string gestures that do not follow any noticeable pattern. In this piece, the location of several onsets creates some sense of pulse that is, however, immediately superseded by a new sense of pulse shaped by other gestures. In that way, it could be argued that there is a constantly shifting pulse or that there are several pulses superimposed at the same time. This is maintained until the main vocal melody begins and reprised in the closing section of the piece. Thus, while electroacoustic music typically features a more shapeless approach to rhythm, and popular music leans towards a more regimented approach, some compositions in both genres break some of these norms, resulting in interesting outcomes.

Considering the previous discussions, the task of associating one genre with one specific approach to rhythm cannot be regarded as an absolute. Rather, a range of rhythmic approaches can be found within any genre, varying in their degree of adherence to established rhythmic characteristics. Accordingly, in this research a spectrum of rhythmic approaches will be used to identify and describe different sections, pieces, or genres of music. It is important to note that even within a genre, a piece, or a section of a piece, it can be possible to find different types of rhythm, and these types may intersect with one another. This nuanced and dynamic view to understanding rhythm seeks to capture the complexity and diversity of musical genres and their various expressions.

This idea of a rhythm spectrum is derived from the notion of 'rhythm palette' described by Álvarez (1989). He claims that definitions around rhythm, and the characterisation of pieces according to their rhythmic content, are best understood as a continuum, rather than as fixed states. In this range, he includes "all temporal structures ranging from simple pulses to complex statistical structures" (p. 207). The author only characterises the limits of this rhythm palette and associates this concept with the idea of motion in rhythm to arrive at the concept of rhythmic object, that he further develops. This is indicated in Figure 9:

Figure 9

Álvarez's Rhythm Palette



From "Rhythm as motion discovered", by J. Álvarez, 1989. *Contemporary Music Review, 3*(1), p. 207. Copyright Harwood Academic Publishers GmbH 1989.

Roads (2014) concurs with the idea of a spectrum for characterising rhythm. Specifically, he argues that the existence of a continuum of rhythm is acknowledged and that it ranges "from the pace of meso-structural boundaries (seconds and minutes), to infrasonic fluctuations (< 20 Hz) to events at all audio frequencies up to pulses at the sampling rate" (p. 27). Overall, Roads' views on the rhythmic continuum echo the ideas of Álvarez (1989) and contribute to the development of the rhythm spectrum in this research.

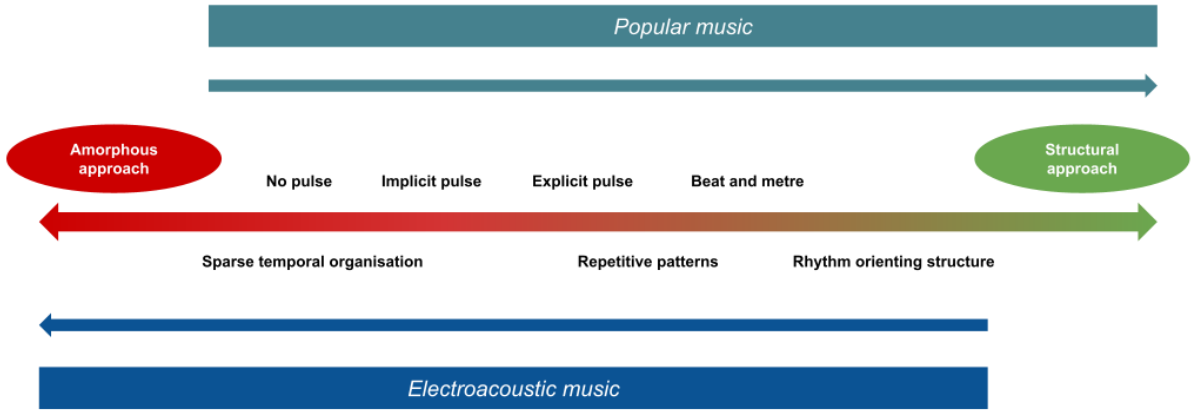
The rhythm spectrum presented in Figure 10 spans from the *amorphous* approach to the *structural* approach. In compositions that fall towards the amorphous approach, it is common to find materials that exhibit sparse temporal organisation and no discernible pulse. Conversely, towards the structural approach we locate materials and pieces organised by metre, where the repetition of rhythmic structures gives way to formal organisation, i.e., where rhythm functions as one of the parameters that help orient the structure of the piece. The proposed rhythm spectrum offers a visual representation of the various degrees of rhythmic organisation that can be found within and across musical genres.

Other researchers and practitioners have also described the organization of rhythm or time in music as an opposition of terms, though they did not propose a spectrum between the two extremes. Pierre Boulez (1971) defines two categories of musical time: 'pulsed' time and 'amorphous' time. In pulsed time, "the structures of duration will be related to chronometric time as landmarks" (p. 88), adding that only pulsed time is susceptible to changes in speed. In contrast, amorphous time relates to chronometric time "in a global sense" (p. 88). Here, durations, whether proportional or not, "appear in a field of time" (p. 88) and vary only in density. Similarly, Epstein (1987) argues that music contains a temporal duality, which he characterizes as 'chronometric' time and 'integral' time. Chronometric time is described as a "mechanistic, evenly spaced, and in large part evenly articulated time set up within a musical structure" (p. 57), whereas integral time "denotes the unique organizations of time intrinsic to an individual piece" (p. 57). Epstein thus associates chronological time with metric time and beat, while integral time corresponds to rhythmic time and pulse. While Boulez's concept of amorphous time fits one end of the rhythm spectrum model, the concept of chronometric or pulsed time could be positioned somewhere in the middle of the spectrum in Figure 10, alongside 'explicit pulse' and 'beat and metre'. The structural end of the rhythm spectrum not only signifies the use of chronometric time, but also—as mentioned earlier—an approach to rhythm in which patterns become fundamental to the structure of a piece.

Coming back to the analysis of the two genres in question, the rhythm spectrum shows that, although popular music works tend to go towards the structural approach, it is possible to find pieces in this genre that are closer to the amorphous approach. In the same manner, it is possible to find electroacoustic pieces that present material linked to the structural approach even though works in this genre predominantly subscribe to the amorphous approach.

Figure 10

Rhythm Spectrum



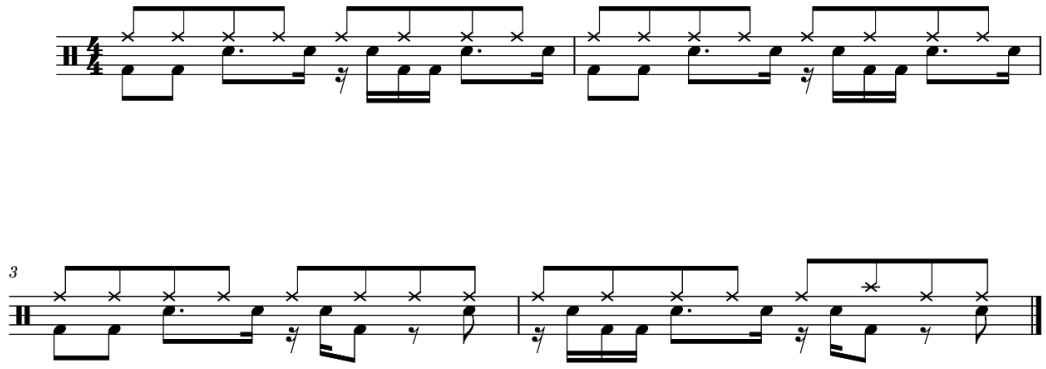
5.6 Rhythm Focus in Dynamic Hybridisation

There are several instances of rhythmic integration in the portfolio that accompanies this thesis. *Young Sirs*—a stereo piece composed in 2022—shows the hybridisation of a rhythmic pattern close to the popular structural approach with the sonic exploration and extended form of electroacoustic music. The rhythmic pattern used in this piece references the widely used 'amen break' motif (Figure 11). This theme comes from the piece *Amen, Brother* by the band The

Winstons (1969), and it is considered to be one of the most sampled drum beats of all time (Otzen, 2015). It has appeared in countless hip hop works and in many other genres as well. For example, *Little Wonder* by David Bowie (1997) features a prominent electronic drum beat based on the 'amen break' that appears in the verses and instrumental sections of the piece. Besides this, the frenetic electronic drums of *Sajtban* by Venetian Snares (2008) also reference this break, as well as many other examples from breakcore, jungle music and IDM.

Figure 11

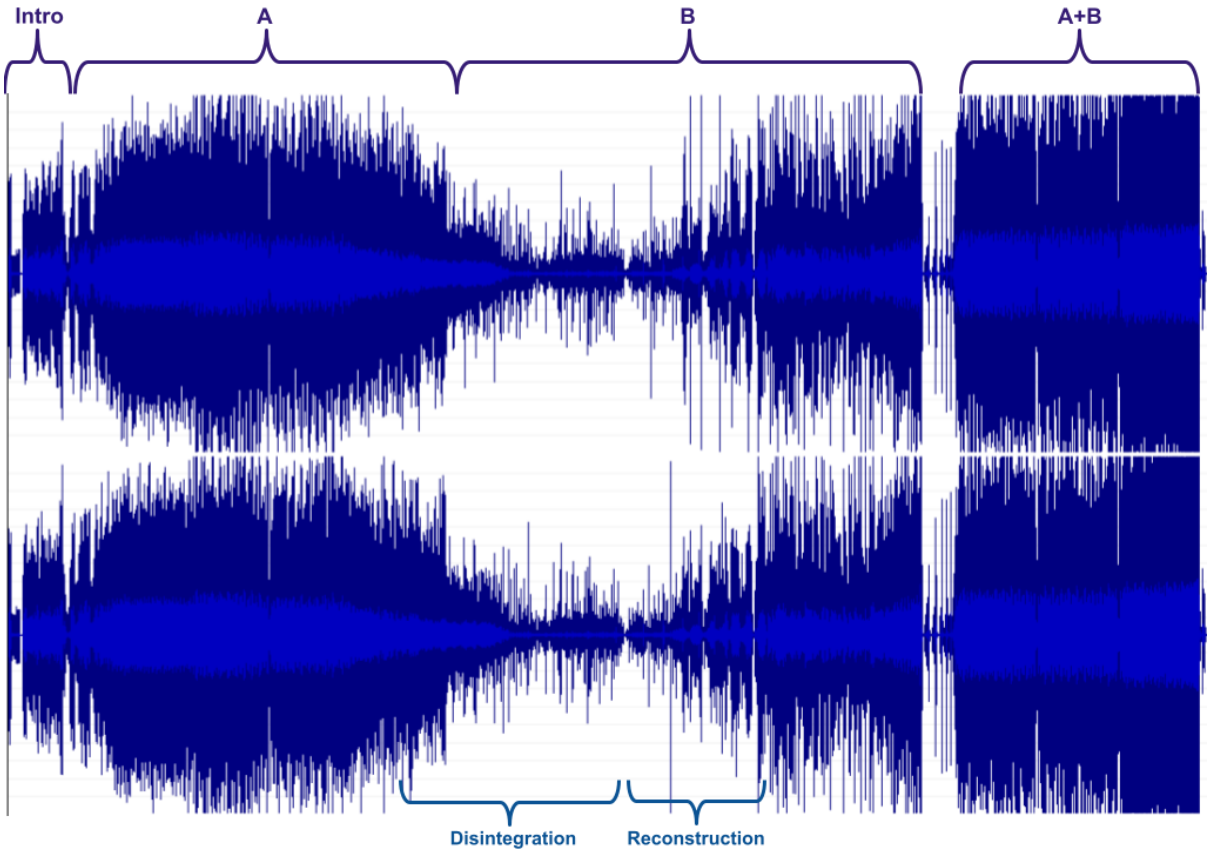
Amen Break Notated



The form of *Young Sirs* primarily follows an A, B, A+B pattern (Figure 12). The piece opens with the introduction of the main theme, played by an electronic drum kit. The timbre of the drum kit is distorted by processes of sample and bit depth reduction. However, the degree of the distortion is constantly changing with the help of a series of LFOs; in this sense, all the instances of the motif are qualitatively different from one another. During the introduction, every instance of the rhythmic pattern is followed by a response consisting of either gestural material, textural material, or a combination of both. The first iteration of the theme is succeeded by a short gestural response consisting of a distorted and modulated delay. The second one is followed by a noisy texture with a descending pitch. Subsequent iterations of the theme are progressively closer between one another, the pitched response becomes shorter and higher, and therefore, the rhythm becomes faster. Finally, this progression arrives at a climactic point—the closing moment of the introduction of the piece—where the vocal phrase "thank you, young sirs" is introduced. This introduction is an example of dynamic hybridisation by juxtaposition, since the rhythmic pattern was not only added to the piece and kept it static throughout the duration of a section, but also, the pattern was introduced, and sonically varied and developed following the characteristic experimentalism of electroacoustic music.

Figure 12

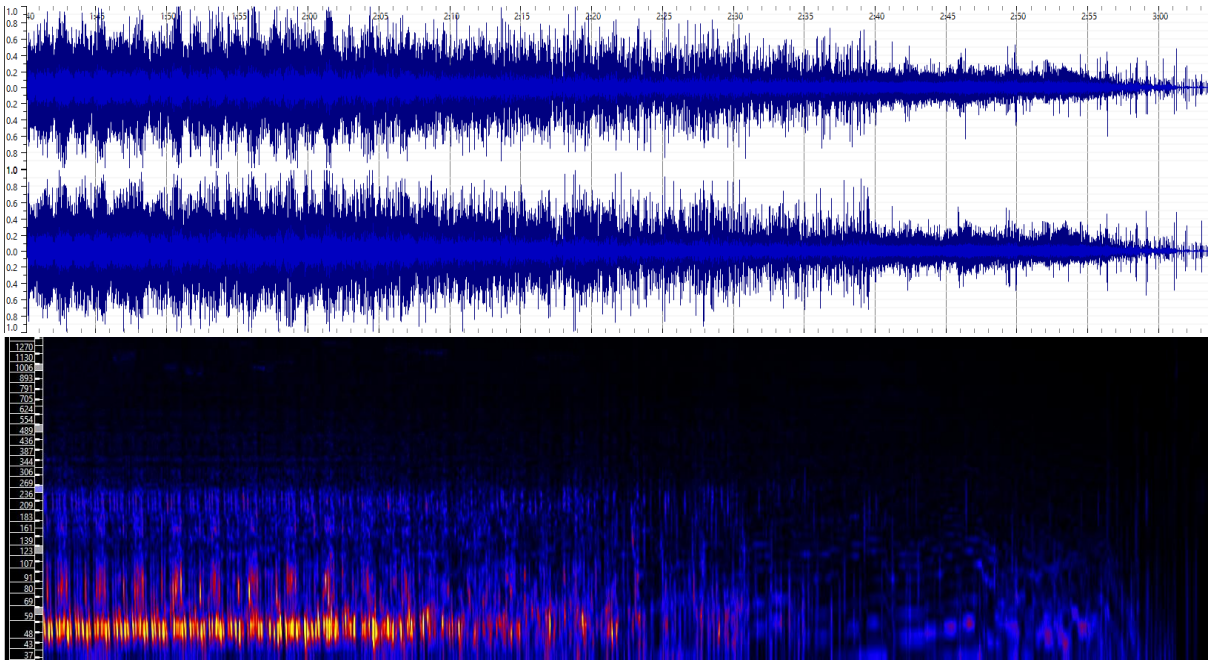
Form Analysis of Young Sirs



Section A starts in a similar manner to the introduction of the piece, but after a few iterations a more consistent rhythmic pattern in ⅞ is established. On top of this rhythmic layer, there is a drone-based bass layer, a noisy melodic layer, and a vocal layer repeating the phrase "young sirs" with some variations. The timbres of this section become more distorted as the section progresses and there are also variations on the melodic layer; however, the focal point of this section is the disintegration of the rhythmic pattern. Through granulation, the pattern is gradually disassembled, becoming more and more sparse with every recurrence. This process, depicted in Figure 13, starts at 1 min 41 s and ends at 2 min 59 s. Throughout this duration, the pattern starts blending with grains with a high density and length, but towards the end of the section the original rhythmic pattern has completely disappeared given its place to scattered occurrences of very short grains. In this way, the rhythm of this section moves from a more structural approach to a more amorphous approach, or—addressing genre hybridisation—it transitions from a popular approach to an electroacoustic approach. It could be argued, then, that during the most part of section A there is a dynamic hybridisation by juxtaposition, since an established rhythmic pattern is constantly juxtaposed with the variations and sonic explorations of electroacoustic music. But, besides this, there is also a dynamic hybridisation process at a macro level. In this work, the hybridisation process is not treated as the introduction of fixed elements but as points of departure and arrival with a dynamic flux of change. Since a first section (with a predominance of popular music elements) mutates into a new section that is more closely related to electroacoustic music, this can also be categorised as a sequential dynamic hybridisation with a gradual transition.

Figure 13

Disintegration of Rhythmic Pattern in Young Sirs. Waveform and Melodic Range Spectrogram

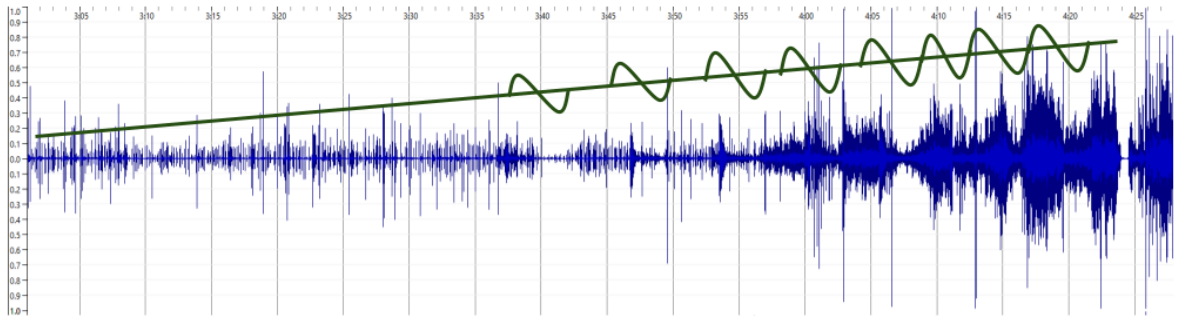


The ideas around disintegration, deconstruction and timbral fusion are fundamental in electroacoustic practice (Young, 2016). For instance, *Baltazar's Adventure through The Great Machine* by Adam Stanović (2019) includes a ten second transition from the first to the second section of the piece where the composer decreases the speed of the rhythmic elements and the pitch of the material, resembling the noise of a machine shutting down. In *Hymn Without Words*, also composed by Stanović (2019), a noisy and distorted rhythmic pattern is introduced with a long fade-in from 2 min 50 s, starting from scattered gestures to a fully formed pattern with discernable beat and metre. Around 6 min 30 s the pattern progressively increases its distortion (possibly through bit reduction) so much that it becomes once again scattered, until it disappears with a long fade-out. Taking another example, in *Obstacle 2* the composer Rian Treanor (2021) presents a rhythmic pattern that gets progressively distorted. By 2 min 30 s, several of the rhythmic gestures become so fast paced that their perception changes to a pitched texture. Besides this, some of the gestures become either scattered or they change their pattern to a more machine gun-like effect. This is accompanied by additional processes of distortion that resembles downsampling.

In *Young Sirs*, when this disintegration process reaches the point where there are only sparse grains of the original rhythmic pattern, vocal material in the form of grains of the same short size are introduced. Subsequently, the grains from the rhythmic pattern disappear and the ones with the vocal material gradually increase their size until a full vocal speech is presented. While the overall arch of this reconstruction process can be analysed as a constant flow, the movement is not perfectly linear; there are several moments where low frequency gestures trigger fast grain rhythm that gives an overall sensation of acceleration in the phrase. This is depicted in Figure 14.

Figure 14

Reconstruction of Vocal Material in Young Sirs



When the speech and vocal manipulation approach their final moments in section B, the original rhythmic pattern is reintroduced via short grains. By the end of the section, the pattern is almost completely reconstructed and, after a brief transition, section A+B is introduced.

Another piece from the portfolio that uses rhythm as one of their foci is *None of This is My Fault*, composed in 2021. This work also utilises an electronic drum kit as source material but differs from *Young Sirs* in two main areas. The first one is that there is not a steady rhythmic pattern in the piece. The rhythmic phrases were created by recording several sequences of an electronic drum kit using an arpeggiator programmed in random mode. In that way, the result was not the conventional downbeat and backbeat pattern found in some forms of popular music, but only timbres associated with popular music and an implicit sense of pulse. After the recording process, several phrases were created by selecting some of the patterns for specific sections of the piece, making sure that the sequences were not internally regular. Besides that, the rhythm presented in the random patterns does not coincide with the rhythm used in the rest of the layers. This construction is also an example of dynamic hybridisation by juxtaposition, since timbres and percussive elements were taken from popular music but used rhythmically in a more amorphous approach.

The second area of differentiation with *Young Sirs* is that *None of This is My Fault* does not use an AB(A+B) form but the verse/chorus variation form from popular music. In this context, the recurrence created by the use of this form somewhat shifts the perception of the work towards the genre of popular music. However, the constant manipulation of the timbres and rhythmic elements in the piece leans the work towards electroacoustic music and compounds another instance of dynamic hybridisation by juxtaposition.

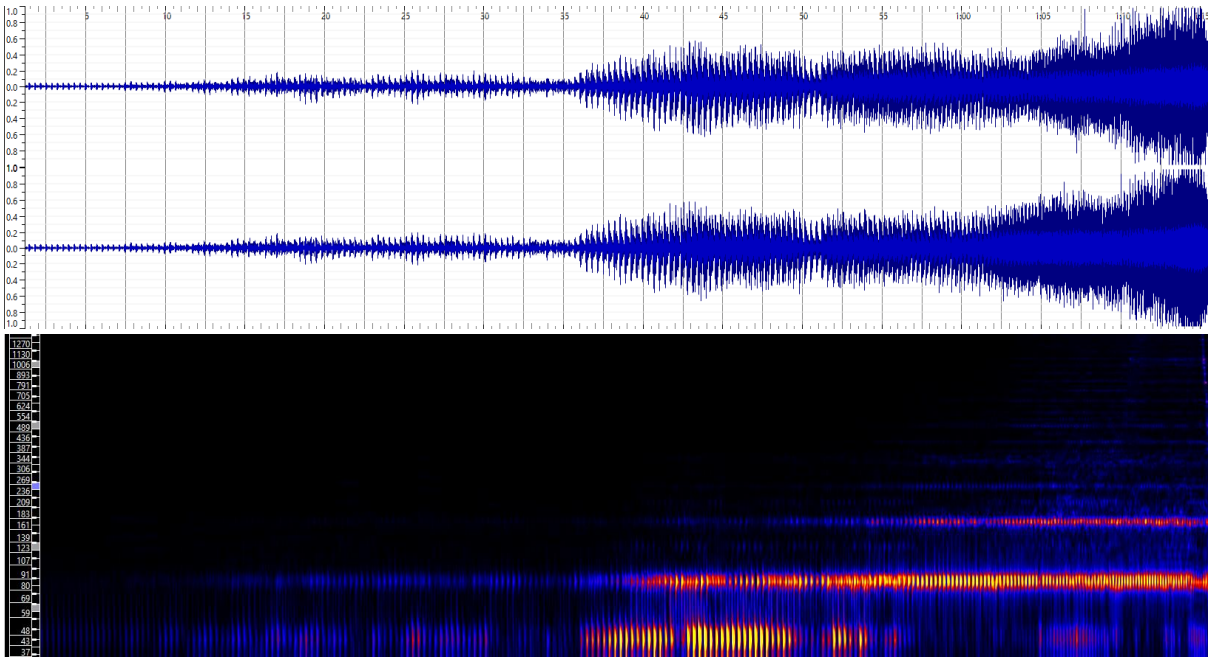
Myself, a quadraphonic piece created in 2022, is another work that addresses rhythm as one of the foci for hybridisation. The majority of the piece is inclined towards the structural approach of the rhythm spectrum, but in order to integrate techniques from electroacoustic music, there are moments where this changes to a more amorphous approach (see Figure 16 below).

This work also uses the popular song as its structural framework with an extended verse/chorus variation form. It could be argued that the first section of the piece, the first introduction, is inclined towards a more amorphous approach on the rhythm spectrum. Here, a low-frequency pulse is sustained throughout the entire section to build a sense of tension. Moreover, the

frequency spectrum of this element is concentrated in the lower frequency range due to the addition of an LPF. The tempo of this element starts at 85 BPM, and gradually increases its value from 0 min 50 s until it reaches 200 BPM towards the end of the section (1 min 16 s). In addition, the LPF is gradually opened towards the upper end of the spectrum to introduce all the spectral features of the sound at the most intense moment of the section. This process is an example of sequential dynamic hybridisation with a gradual transition, slowly moving from an inclination to electroacoustic music to an inclination to popular music. This process of timbral and temporal exploration is represented in Figure 15.

Figure 15

Tempo and Timbre Development in the Introduction of Myself. Waveform and Melodic Range Spectrogram



Additionally, there are several moments in the piece where the rhythm momentarily shifts from the structural to the amorphous approach, all instances of sequential dynamic hybridisation with sudden transition. The first method used for this consisted of replacing the regular electronic drum kit with granulations of the same pattern. This technique is used in the interlude between the second verse and the first chorus (2 min 31 s), in the first half of the third verse (3 min 12 s), and in the final chorus (5 min 52 s). Another technique consisted of processing both stereo busses (front and rear) with sample rate reduction, modulated delay, and reverb in specific moments of the piece. This processing, which abruptly halts the rhythmic pattern and substitutes it for a noisy texture, occurs at 2 min 40 s, 3 min 0 s, 3 min 42 s, 4 min 4 s, and 6 min 14 s. This technique is similar to the one used by Aphex Twin (1999) in *Windowlicker*. Towards the end of this piece, the composer distorts the textures and the rhythmic pattern and applies a process that resembles sample rate reduction and freezing of a window of samples. He finalises the piece by adding a sweeping sine tone with gradually increasing distortion.

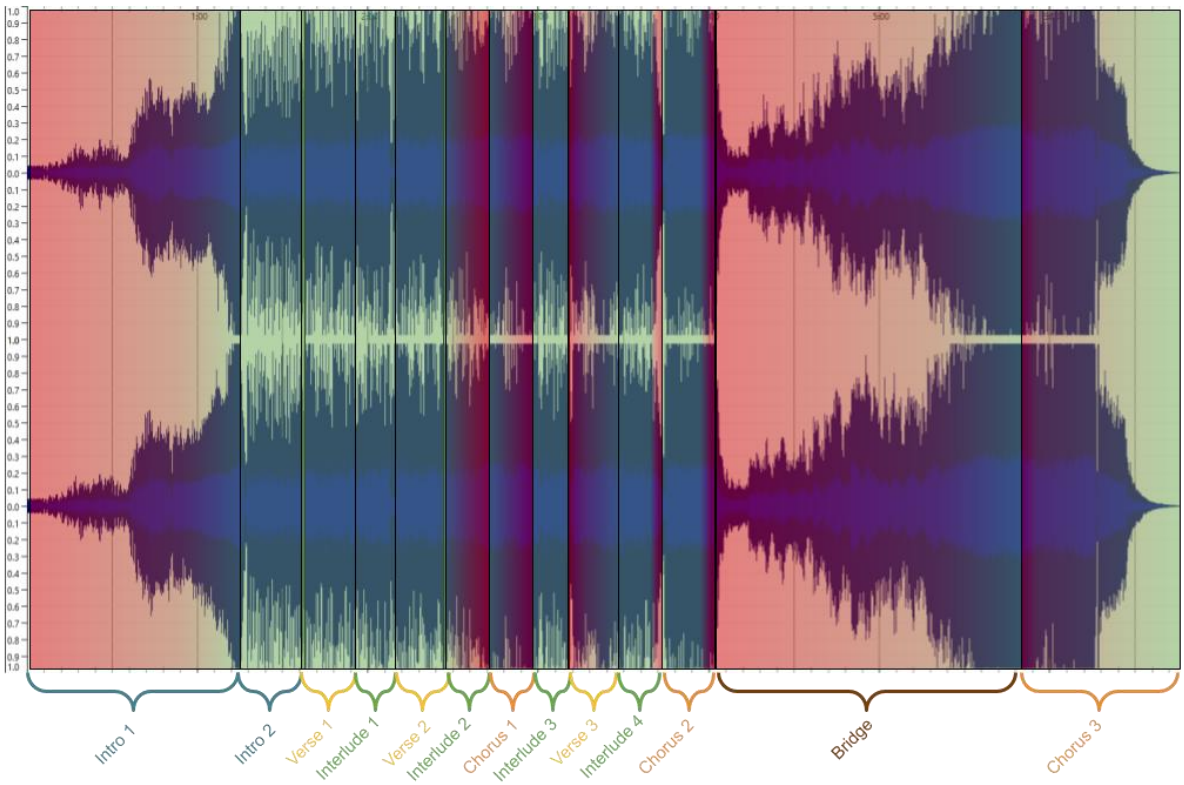
Conversely, the bridge section of *Myself* adopts initially an amorphous approach and gradually progresses towards the structural approach until the end of the section, which is an instance of sequential dynamic hybridisation with a gradual transition. The moment at which this transition

occurs serves as a linkage between the bridge and the final chorus. The bridge starts with a layer of muted single-note pads at a very loose tempo and slow pace. Subsequently, low-frequency gestures serve as cue for the vocal phrases. Towards the end of the section, when the lyrics reach the word "power", the material and the structure from the introduction are revisited. This reintroduction is marked by the onset of the beating pulse; the tempo increases, the word "power" is repeated, and vocal grains are accelerated to culminate in a climactic moment before the final chorus and concluding the piece. It is noteworthy as well that the vocal grains are also sustained and blended with the lead vocals in the final chorus, resulting in a dynamic hybridisation by juxtaposition of the structural rhythm of the vocals and the amorphous approach of low-density grains of the same material.

In summary, *Myself* is a clear example of dynamic hybridisation of rhythm in this portfolio. The work shows the possibility of hybridising the structural and amorphous approaches in different timescales: in the context of an entire piece, in different sections of a piece, and in short phrases of specific sections. Some of those hybridisation processes were made by juxtaposition whilst others were sequential. In that sense, the hybrid is created in a flexible manner, adjusting the approach of the rhythm spectrum depending on the needs of the music. This is depicted in Figure 16, which shows the form of *Myself* and highlights the predominance of the structural or the amorphous approach in particular moments of the work.

Figure 16

Form and Rhythmic Approach in Myself



Note. Towards the red, a more amorphous approach; towards the green, a more structural approach.

5.7 Chapter Summary

This chapter explored rhythm by introducing a dual perspective: the structural approach commonly associated with popular music, and the amorphous approach often aligned with electroacoustic traditions. Beginning with an analysis of rhythm definitions, the chapter compared traditional temporal frameworks—pulse, metre, and beat—with more approaches to rhythm in music. The structural approach emphasises rhythm's role in creating structured, recognisable patterns tied to pulse and metre, fitting well within the context of popular music, where rhythm serves as a core organisational element, often linked to danceability and formal structure. In contrast, the amorphous approach extends rhythm beyond fixed patterns, embracing dynamic fluctuations across timescales and textural gestures. This approach is well-suited to electroacoustic music, where rhythm often arises from complex, evolving interactions of sonic materials. The chapter highlighted how rhythm can be perceived as a spectrum rather than a dichotomy, acknowledging that both popular and electroacoustic music can exhibit characteristics from various points along this continuum.

Additionally, the chapter offered a detailed analysis of rhythm within compositions created by following the dynamic hybridisation method, particularly focusing on works from the accompanying portfolio. Pieces like *Young Sirs*, *None of This is My Fault*, and *Myself* demonstrate varied methods of dynamic hybridisation, blending rhythmic elements from both popular and electroacoustic traditions. Through the dynamic hybridisation method (by juxtaposition and sequential hybridisation) these compositions highlight the flexible and evolving nature of rhythm in contemporary music-making.

In conclusion, the chapter argued that effective hybridisation of rhythm between electroacoustic and popular music should involve a dynamic and flexible approach. By moving dynamically along the rhythm spectrum, it would be possible to create musical structures that challenge traditional genre boundaries.

6 Voice Focus

6.1 Introduction

This chapter examines the crucial role of the human voice in hybridising electroacoustic and popular music. Although the voice is a broad topic with many dimensions, the focus here is on its applications within these two musical traditions and how it can be utilised to create hybrid works. The chapter begins by exploring the significance of the voice in music, particularly its unique capacity for emotional expression. It then investigates its varied roles in electroacoustic and popular contexts, emphasising how these approaches can be combined in new ways. Subsequently, analytical frameworks for understanding vocal use in both genres are introduced, providing a foundation for the analysis of original compositions. These analyses exemplify, once again, the method of dynamic hybridisation, demonstrating how vocal characteristics from both traditions can be creatively integrated.

6.2 Voice Overview

Several researchers have addressed the importance of the human voice in music. It has been described as "the oldest and greatest of musical instruments" (Vaughan Williams, 1940, as cited in Manning, 2008, p. 84), or praised as the primary parameter on many music studies (Kramer, 2014). Kramer also argues that the voice possesses an essential plurality, to the extent that it would be impossible to analyse the voice only as one phenomenon or a single instance, as it changes from person to person presenting a unique singularity. This is also consistent with views presented by Everett (2009), who claims that each performer should be thought of as a distinct instrument. Barker (2004) summarises all these approaches by arguing that the voice is still the most essential element in music and that it is "constantly remaking itself and evolving" (p. 4), functioning, in a way, as a living organism.

Regarding the links that the human voice can create with music and listeners, Hewitt (2006) asserts that throughout history, composers and listeners have been able to create strong connections between the voice and music, and that pieces containing vocal elements appeal to listeners because "the voice as a means of expression represents both familiarity and intimacy" (p. 12). This also has been highlighted by Bergsland (2005), by stating that the voice occupies a particularly important place in composition due to its connection to human relationships and communication.

Furthermore, Naylor (2016) draws special attention to the importance of the voice in any work, stating that this element will particularly resonate with listeners. This is also argued by Roads (2015), when he states that vocal sounds are "privileged by the human brain" (p. 80), and that they immediately attract the interest of audiences. Additionally, Barry Truax (1984) also regards the human voice as one of the sounds we are most sensitive to as listeners, pointing out that there is an "unflagging interest in the endless variations of verbal production" (p. 28), including speech, singing, and the wide range of nonverbal elements that surrounds them.

Considering the aforementioned perspectives, it is clear that the voice has a prominent role in music composition, fostering relevance for both composers and listeners. Furthermore, this

significance has been highlighted with its use in both electroacoustic and popular music. However, the subject of the voice in music is particularly broad and impossible to cover just in a single thesis chapter. Since a thorough study on the topic goes beyond the scope of this research, the next sections will only delve into an analysis on the ways in which the voice has been utilised in electroacoustic and popular music, as well as the main differences of its use between the two traditions, and its potential application within the context of dynamic hybridisation.

6.3 Voice in Electroacoustic Music

Since it has been argued that the human voice is the most familiar and most versatile instrument there is (Landy, 1994), it is almost no surprise that electroacoustic music composers have used the voice in a wide array of contexts. In all kinds of experimental music, the inclusion of the voice seems to emphasise its own preeminence (Barker, 2004), and in today's practice of electroacoustic music, the addition of vocal material is still covering an expanding range of creativity (Baars, 2015). Furthermore, due to the ever-increasing technological developments, it has become more and more common to find vocal material presented in different manners in the context of electroacoustic music (Beirens, 2014; Hewitt, 2006; Naylor, 2016).

6.3.1 Maximal-Minimal Model

When analysing the types of vocal material found in electroacoustic music, two researchers have made valuable contributions that will be useful for this research. Andreas Bergsland (2005, 2013) devises a model—called maximal-minimal voice—for analysing the presence of vocal material in electroacoustic music. The maximal and minimal are defined as poles that limit a continuum on which experienced voices can be localised. Maximal voice is described as a convergent fulfilment of seven premises. These premises are described as "partly interconnected conditions related to particular aspects or features of the experience of voice" (Bergsland, 2013, p. 218), and are listed as: focus of attention, information density, naturalness, presence, clarity in meaning formation, feature salience, and stream integration. At maximal voice, the material encountered is "typical informative and neutral speaking voice, resembling in many ways a public radio broadcast voice" (p. 218). However, Bergsland (2005) claims that the state of maximal voice is "rarely found in electroacoustic music in its fullest sense" (p. 3). Conversely, minimal voice is defined as the boundary zone between voice and no-voice, related to the negative fulfilment of the premises. Here, the material is highly manipulated, quite abstract, and, in Bergsland's views, difficult to associate with human vocal production or semantic meaning. Considering this approach, it would be possible to analyse *Come Out* by Steve Reich (1966) as a piece that moves progressively from the maximal to the minimal pole. By presenting a speech extract—part of Daniel Hamm's testimony for the case of the Harlem Six (Beirens, 2014)—at the beginning of the piece, Reich introduces the material that will be explored. He then gradually moves the material creating a phasing effect between the stereo channels, until left and right differ considerably. From there on, the samples are slowly shortened to the point where their intelligibility is lost towards the end of the piece. Even though the model presented by Bergsland is adequate—especially if the premises are considered in more detail—it does not include the singing voice nor any vocalisation that can be associated with a specific pitch in an electroacoustic piece, which renders the model insufficient for analysing a hybrid work in this research.

6.3.2 Hettergott's Categories

The second notable contribution was made by Alexandra Hettergott (1999), who establishes three categories for analysing the use of the voice in an electroacoustic work: informational, instrumental, and material. In the informational category, it is possible to find normal speech and unprocessed text, either sampled or recited, where the informational aspect remains relevant. Considering this classification, it would be possible to position *Once Upon a Time* by Hildegard Westerkamp (2012) in the informational category, since the piece presents the narration of a story using the voices of two children. Moving forward, Hettergott allocates singing, melismatic or vocalised samples, and live performances in the instrumental category. According to this description, *O Superman* by Laurie Anderson (1981), with repetitive rhythmic vocal patterns and melodic lines treated with a vocoder, would fit in this category. It would also be possible to associate *Hildegard's Dream* by Alejandro Viñao (1994) to this category, a work with layers of vocal material as fixed media and a soprano performing as soloist. Finally, Hettergott associates the material category with any manipulation or transformation of vocal sounds, which she further describes as an utterance that has been "estranged from all emotional or informational connotations" (p. 557). Although it would be easy to agree with the initial characterisation of the material category, the idea of the voice losing its emotional content only because it is deprived of its informational characteristic seems questionable or, at the very least, subjective. It would be difficult to argue that the vocal manipulations presented in *Swan Song* by Dale Jonathan Perkins (2017) lack emotional content. Here, vocal samples are presented and manipulated with granulation, freezing, pitch shifting and filtering, amongst others, creating intertwined textures that drive the piece from start to finish. Moreover, Perkins creates a one minute long crescendo towards the end of the piece based almost entirely on superimposed vocal granulations, serving the purpose of creating the climax of the work. *Vox 5* by Trevor Wishart (1979-86) also has several manipulations of utterances throughout the piece that carry emotional content. Those manipulations blend with other natural events sounds, such as crowds, bells, and bees, amongst others, developing "poetic images of the creation and destruction of the world contained within one all-enveloping vocal utterance (the 'Voice of Shiva')" (Wishart, 1987).

Although it would be difficult to agree with Hettergott's (1999) description for the last category when she states that due to vocal manipulations the voice is deprived of emotional connotations, vocal material does tend to lose its informational or semantic content when heavily manipulated. When the voice is used as material in electroacoustic music, the shape of the vocalisms is more important than their semantic content (Roads, 2015). Therefore, in the material category the nature of the manipulation and the outcome of the sonic exploration will be regarded as more relevant than the informational content of the voice. It would also be possible to argue that in electroacoustic music it is more common to find examples that go towards the material category—or towards Bergsland's minimal voice—than any of the other two categories (Bergsland, 2005; Hettergott, 1999). Although there are several composers that create works that fall in the informational category, like the acousmatic storytellers Luc Ferrari, John Young, or the aforementioned Hildegard Westerkamp (Amelides, 2016), and others that have use the voice as described in the instrumental category, like Holly Herndon, Alejandro Viñao, or Åke Parmerud, most electroacoustic composers that include the human voice as part of their compositions use it as material for sonic exploration. This characteristic is one of the main differences between the use of the voice in electroacoustic and popular music, since in the latter the voice is mostly used as it is described in Hettergott's instrumental category.

In summary, notwithstanding the fact that some of views introduced by Hettergott (1999) are debatable, her characterisation of vocal sounds in electroacoustic music with the three aforementioned umbrella categories seems appropriate as an approach for this thesis. Moreover, the fact that she includes the singing voice as part of the analysis, makes the categories presented an ideal starting point for the hybrid works that are part of the portfolio accompanying this research.

6.4 Voice in Popular Music

Regarding popular music, it has been argued that vocal music dominates over 90 percent of its practice (Barker, 2004), and that the voice has always been the main vehicle for most of the works in the genre (Middleton, 1990). More than just a vehicle for lyrics, the voice acts as the "aural index of the artist's persona and represented emotions" (Lacasse, 2005, p. 1). As it was established in Chapter 1, in this thesis there will be a focus on the popular song when discussing the genre of popular music, and contrary to the majority of pieces found in the electroacoustic tradition, the popular song exhibits a strong presence of the voice in the form of a foreground element, with a specific melodic contour, associated lyrics, and with periods of phrases and mesostructures that are crucial in determining the different sections of a piece (A. F. Moore, 2012). Regarding the melodic contour, Allan F. Moore establishes four categories to describe its presence. Vocal melodies in popular songs can exhibit a 'generally falling', 'generally rising', 'generally flat', or 'undulating contour'. However, Moore adds ancillary descriptors when the melodic contour is less pronounced. If the melody stays predominantly in a single pitch, its melodic contour can be described as 'chant'; if the melody is oriented around a single pitch, its melodic contour is characterised as 'axial'; if the melody moves around two pitches, its contour is called 'oscillating'; and if it consists of three distinct pitches it is described as 'terraced'. All these descriptors are particularly useful for portraying the contour of a melody in popular music due to the fact that works are not traditionally presented in the form of a score.

Lyrics are considered the most important aspect of a popular song (A. F. Moore, 2012). Although in popular music they are presented in a similar manner as the text in a poem, the analysis and interpretation of lyrics cannot be detached from the music of the song (Griffiths, 2003; Middleton, 1990, A. F. Moore, 2012). Even though it is possible to find some technical poetic devices in lyrics (A. F. Moore, 2012), popular songs should not be regarded as musicalised poems but as a different medium that presents text and music in an intertwined and inseparable manner.

One of the devices shared with poetry is rhyme. According to Griffiths (2003), the use of rhyme is central in popular music. He characterises the rhymes found in songs as 'full rhyme', 'near rhyme', and deliberate 'non-rhyme' in a rhyme setting. Griffiths also claims that although lyrics use rhymes, they cannot be considered works of poetry; instead, "they are *like* poetry" (p. 42). Conversely, Griffiths argues that when lyrics are not structured in a similar fashion to poems but more closely to prose, they should be called 'anti-lyrics': "[w]ithin the anti-lyric, the emphasis of a song shifts away from its sonorous rhyme towards the detail of its statement, away from rectitude of rhyme and rhythm towards the novelty or interest of words and ideas" (p. 55)

Regarding the relationship between text and sound, Middleton (1990) offers a valuable model to describe different instances of the voice in the context of a popular song. This model introduces three categories, namely affect, story, and gesture. Middleton defines the affect category as words

as expression, where the lyrics tend to merge with the melody and the voice goes towards a 'song'. There are a myriad of examples of popular music pieces that use the voice in that manner. As it was previously described, all works considered part of the popular song archetype have a melodic vocal line presenting lyrics. *Viva la Vida* by Coldplay (2008) presents an anthem-like vocal melody with lyrics that tell a story about the French revolution; …*Baby One More Time* by Britney Spears (1999) has a predominant low register melody in a love song about a girl longing for her ex-boyfriend to return; *In Bloom* by Nirvana (1991) presents a screaming melody with ironic lyrics that describe audiences that only enjoy underground music because it is supposed to be cool. All these pieces fall into the category of song and present lyrics that aim to express something through the aid of a melody. Moving forward, Middleton's story category is related to words as narrative, where the lyrics tend to go towards a rhythmic/harmonic flow and the voice leans towards speech. *Bone Machine* by Pixies (1988) presents text that goes toward speech in both verses of the piece, whereas the pre-choruses and refrains go towards the affect category. There are also several examples of raw speech on the album *The Dark Side of the Moon* by Pink Floyd (1973). For instance, *The Great Gig in the Sky* introduces a speech performed by a man that talks about the fear of death between the melismatic singing by a female vocalist. Finally, the gesture category is described as words as sounds, where the text tends to be absorbed into the music and the voice tends towards becoming an instrument. *Chicken Teriyaki* by Rosalía (2022) uses a vocal sample with the utterance "ooh" as the only melodic element aside from the main vocal line. This sample is presented unaltered at the beginning of the piece and then is manipulated—mainly by pitch shifting—to accompany the main vocals and the percussive elements of the work, functioning effectively as an instrument instead of a carrier of semantic content.

The resemblance between the classification coined by Middleton and the description of the use of voice in electroacoustic music made by Hettergott (1999) is noteworthy. Although the terms differ, the characterisations are very similar. Whereas Middleton identifies the use of the voice as 'affect', 'story', and 'gesture' for singing, speech and sound, respectively, Hettergott uses 'instrumental', 'informational', and 'material' for practically the same description. Since it was already stated that this research will make use of Hettergott's categories for the use of voice in electroacoustic music, it would make sense to follow as well the classification introduced by Middleton for popular music as a complement in the description of hybrid works.

In summary, although it is possible to find the human voice in works of electroacoustic and popular music, its use is predominantly different between both traditions. In popular music, the voice tends to fall within Middleton's affect category, with lyrics and melody that are in a foreground position within the arrangement and sound mix, aligning with the defining features of the popular song. In contrast, in electroacoustic music, the voice tends to be heavily processed and disguised, classifying it within Hettergot's material category. In that sense, the discernibility of recognisable words or sentences becomes infrequent, and the semantic meaning is almost entirely stripped away.

6.5 Voice Focus in Dynamic Hybridisation

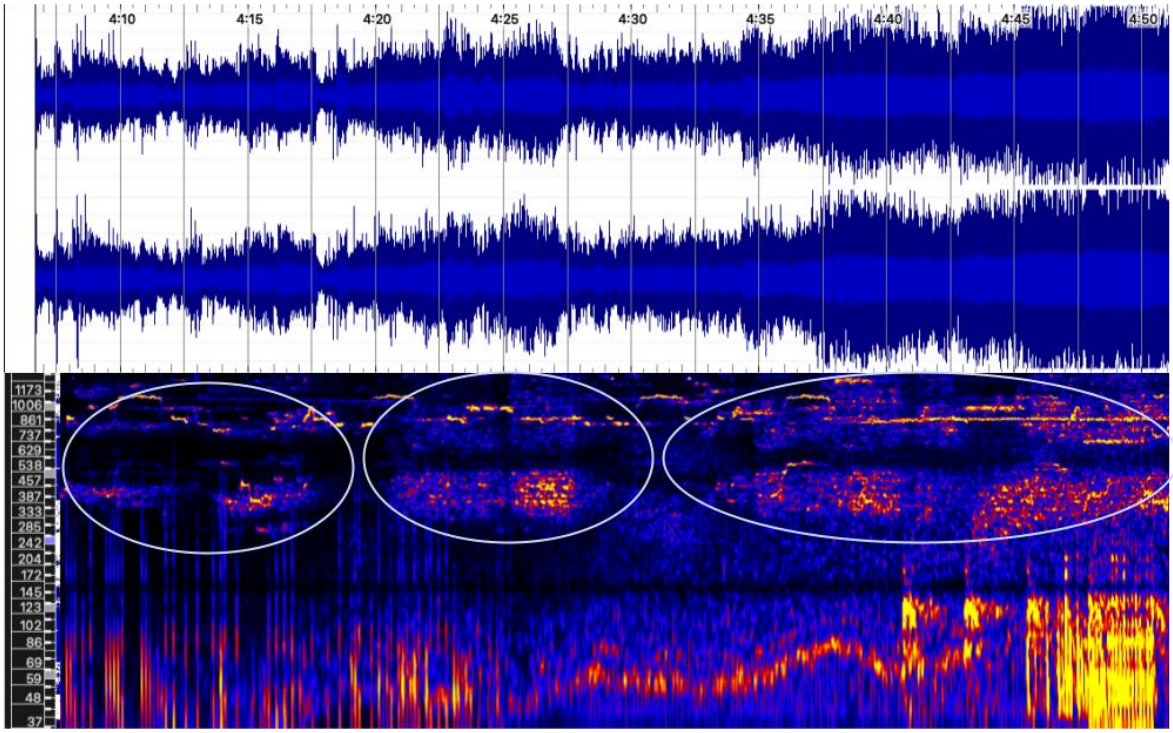
I'll Wait presents vocal material in different contexts. As described in Chapter 4, the composition was created around the idea of an electroacoustic love song. It follows the archetype of verse/chorus variation, and its main element is a vocal line with associated lyrics (see Appendix I.1). The lyrics follow either 'full rhyme' or 'near rhyme' structures and address the idea of

someone yearning for a love that has ended. Regarding the melodic contour, the verses of the piece would fall in the category of generally flat, whereas the choruses could be described as generally falling and the bridge as generally rising.

Having material as a foreground element with a melodic vocal line is a clear example of Hettergott's instrumental category or Middleton's affect category, where the voice is associated with a clear semantic content and has strong melodic characteristics. Thus, this would tend to position the piece towards a popular music genre. However, the context that surrounds this vocal material is different from the one found in popular music practice. The piece does not have a rhythmic section, and, in this case, there are no clear rhythmic patterns nor harmonic support. The rest of the accompanying material was constructed mostly by manipulating vocal sounds from the main vocal line in several ways. Throughout the piece, there are many textures that were created by processes of stretching and sample freezing, and there are several layers of granulation of vocal material as well. Besides that, the section labelled as 'solo' (from 3 min 46 s to 4 min 50 s) presents vocal samples treated with filters, granulation, and delay, that in conjunction with other granulation layers, textures and percussive noises, help to create a build up towards the climactic moment of the work (see Figure 17). All these instances tend to associate the piece with the electroacoustic genre, since they can be categorised into Hettergott's material category with a clear sonic experimentation and decoupled from any semantic content.

Figure 17

Vocal Manipulations (in circle) in the Bridge Section of I'll Wait



Considering all the instances of vocal material that *I'll Wait* presents (including a melodic vocal line that is closely related to the popular music practice, and the sonic experimentation characteristic of electroacoustic music) it is clear that this piece is an example of a hybrid work. In the early sections of the piece, this hybridity is presented in a sequential manner; for instance,

with vocal manipulations preceding and following a section that had the main vocal line as the foreground element. Towards the end of the work, it moves to a juxtaposition of instrumental and material vocal content, showing a characteristic flexibility of the dynamic hybridisation method, where the hybrid is created by different manners throughout the piece. Considering also that the form of the piece was modified due to the vocal manipulations in the work, it is clear that the hybrid is not a direct blend of materials but a dynamic one.

A similar vocal approach was used in *Myself*. The piece also presents a vocal line with associated lyrics (see Appendix I.2), but in this case there is a rhythmic section constructed entirely by electronic means. However, there are instances where vocal material close to Hettergott's informational category is introduced. During the second verse and second interlude (specifically from 2 min 10 s to 2 min 43 s), it is possible to find voice in the form of speech that repeats phrases from the lyrics, such as "I can't read" and "there is no way out of here". This pattern is also repeated during the third verse and fourth interlude (from 3 min 12 s to 3 min 45 s) with the words "afraid" and "rage", and during the vocal section of the bridge of the piece (from 4 min 37 s to 5 min 19 s), with a speech that is repeated with timbric variations that shadows the entire section. The introduction of these types of vocal material in conjunction with formal and rhythmic elements that leans the piece towards popular music, is also an instance of dynamic hybridisation by juxtaposition.

Moving forward, it is also possible to find in *Myself* sounds that could be classified as part of Hettergott's material category, which is, as previously stated, closer to electroacoustic music. The fourth interlude presents vocal granulations of the word "myself" that aim to build additional layers of tension towards the beginning of the third verse, effectively associating the hybrid with a dynamic hybridisation by juxtaposition. Also, most of the bridge section presents vocal grains (particularly near its closing seconds) that aim to create a climactic moment of the piece, and the final chorus have textural layers that were produced by freezing vocal sounds from the main melodic line.

In summary, it would be possible to state that *Myself* presents vocal material in all three categories coined by Hettergott, most of the time introduced as an instance of a juxtaposed dynamic hybridisation.

Regarding the lyrics of the piece, they were loosely inspired by the short novel *Ghosts*, from *The New York Trilogy* written by Paul Auster (1987). They address feelings of alienation and despair, and are constructed with a strong use of the 'near rhyme' model. Nevertheless, the bridge of the work could be analysed as an instance of an 'anti-lyric', since it was originally written as a section in prose, with little care for rhyming.

6.6 Chapter Summary

This chapter examined the significant role of the human voice in the hybridisation of electroacoustic and popular music. It began by acknowledging the voice's fundamental importance in music, drawing on perspectives from various researchers who highlight its uniqueness, versatility, and ability to create strong connections with listeners. The chapter then delved into how the voice is utilised differently in electroacoustic and popular music traditions.

In electroacoustic music, the voice is used in a wide array of contexts and is often manipulated to explore a range of textures and forms. The maximal-minimal voice continuum by Bergsland (2005, 2013) serves as a model for understanding how the voice can be positioned from natural and clear (maximal) to abstract and manipulated (minimal). Hettergott's (1999) categorisation of the use of the voice as informational, instrumental, or material offers an additional framework for analysing electroacoustic works, where the voice frequently tends towards the material category, prioritising sonic exploration over semantic content.

Conversely, in popular music, the voice typically occupies a foreground position, carrying melody and lyrics. The chapter discussed here the centrality of lyrics in popular songs, their relationship to poetry, and the use of rhyme. It also presented Middleton's (1990) model for describing voice in popular music, categorising it as affect, story, or gesture, which closely aligns with Hettergott's (1999) model for electroacoustic music.

The chapter then examined two original compositions from the portfolio, *I'll Wait* and *Myself*, as examples of dynamic hybridisation. These works demonstrated how vocal elements characteristic of both electroacoustic and popular music traditions can be combined, either sequentially or by juxtaposition, within a single piece. The analysis revealed how these compositions utilise various vocal treatments, from clear melodic lines with lyrics to heavily manipulated vocal sounds, creating a flexible and dynamic hybrid form.

7 Space and Performance Focus

7.1 Introduction

This chapter delves into the key aspects of space and performance in electroacoustic and popular music, providing a theoretical framework for understanding their commonalities and differences. It then examines and demonstrates ways in which spatial and performative hybridity exists in the portfolio of works, arguing that hybridity exists across the use of spatial techniques, spatial formats, performer placement, type of system used during the performance, and interaction with the audience, amongst others.

7.2 Space and Performance Overview

The exploration of space has played a fundamental role in both electroacoustic and popular music. It is not surprising that modern composers, and sound and media artists "emphasise spatial aspects of their work" (Barrett, 2022, p. 175) due to the relevance of spatiality in current practice. Spatial explorations can enhance the character or effectiveness of musical ideas, differentiate one sound from another, provide dramatic impact, alter or reinforce reality, or act as the primary idea of an artistic gesture (Moylan, 2007).

According to Smalley (1997), the spatial characteristics associated with a work are part of what he calls the 'composed' space, further dividing this category into 'internal' and 'external' space. Conversely, the spatial characteristics of the place where the work is listened to and/or performed are part of the category of 'listening' space. Following a similar approach, Janhan (2024) associates Smalley's 'composed' space to 'internal' space, and the space where the piece takes place during performance to 'external' space. Janhan argues that the space where the performance takes place has an influence in both electroacoustic and instrumental works, and that in the case of electroacoustic music, both Smalley and Janhan assert that there is an interdependence and a dialogue between the space associated with the piece and the one where the work is presented.

7.3 Space and Performance in Electroacoustic Music

Space has been an integral part of electroacoustic music since its inception (Otondo, 2008). As Barrett (2007) notes, spatial aspects are "inherent to the art form, in composition and in the projection of music to the listener" (p. 241). Barreiro (2010) goes even further by stating that one of the main contributions of acousmatic music, as part of the electroacoustic tradition, is "the awareness of space as a central aspect of music composition" (p. 290).

A significant aspect of spatialisation in electroacoustic music involves a departure from acoustic realism. Many composers manipulate spatial cues to create abstract, otherworldly sonic environments. Instead of replicating natural sound spaces, practitioners often aim to generate spatial experiences that challenge listeners' expectations (Baalman, 2010). By juxtaposing familiar and unfamiliar spatial elements, composers seek to evoke a sense of tension and expand the possibilities of auditory space.

The relationship between spatialisation and technological realisation is also central to electroacoustic music. While Baalman (2010) suggests that composers often exploit spatialisation techniques to create abstract, non-representational soundscapes, there is a reciprocal relationship between compositional ideas and available technology. This tension between the desire to create novel spatial experiences and the limitations or possibilities of technology is a constant struggle with practitioners. As Barrett (2007) points out, our understanding of spatial audio is rooted in a combination of artistic views, technological advancements, and practical considerations for performance.

7.3.1 Sound Diffusion

Barrett (2022) divides the performance of electroacoustic compositions (primarily fixed-media ones) into two strategies: electroacoustic music composed in stereo and performed over a loudspeaker orchestra, and multichannel pieces played over a fixed loudspeaker configuration. However, she also acknowledges that, more recently, loudspeaker orchestras have also accommodated multichannel works. The performance of stereo or multichannel pieces over an array of speakers introduces the critical concept of sound diffusion, a central aspect in the discussion of performance of electroacoustic music.

In broad terms, sound diffusion can be defined as "the process involved in presenting electroacoustic music to an audience" (Mooney, 2005, p. 101). Mooney argues that since electroacoustic music is mostly dependent on loudspeakers and encoded audio streams for its creation, the performance of this music, or sound diffusion, must also involve loudspeakers and audio streams. These loudspeakers are positioned following a specific design in a concert hall or a similar performance space, while a performer engages with a control interface to regulate the levels of the signals sent to the loudspeaker array (Stansbie, 2013). Considering this, there are performative and artistic factors related to sound diffusion, but also technical ones, which can be categorised into a decoding device, a control interface, a mix engine, and the loudspeaker array (Mooney, 2005; Stansbie 2013).

The definitions of sound diffusion coined by other researchers follow the same notions. Harrison (1999) defines sound diffusion as "the realtime [*sic*] (usually manual) control of the relative levels and spatial deployment during performance" (p. 117). Harrison favours the term diffusion over projection because he argues that sound actually diffuses within a given space. Furthermore, Harrison's definition emphasises the active role of the interpreter in controlling sound levels and spatial placement during a performance, presenting diffusion as a real-time manipulation of sound within the performance space.

Denis Smalley, in conversation with Lary Austin (2000), defines sound diffusion as "the projection and the spreading of sound in an acoustic space for a group of listeners" (p. 10). Smalley also asserts that a reason for diffusion is to expand the stereo image by projecting it in a large space. Although there are similarities with Harrison's views, the perspective presented by Smalley is more listener-oriented, favouring the use of the term 'projection', and focusing on the spreading of sound within a space to create a desired auditory experience.

In another example, Adrian Moore (2016) describes sound diffusion as "a duplication and subsequent distortion or exaggeration of the stereo image over multiple symmetrically placed

loudspeakers" (p. 189). Here, Moore addresses artistic implications of the practice of sound diffusion with the pursuit of a specific spatial effect, but he also highlights the technicality of the symmetry of the loudspeaker array. In this point, however, it is necessary to note that although there are examples of symmetrical arrays of sound diffusion systems in the UK, there are other instances across Europe where the configuration of loudspeakers is not symmetrical[9].

In a more comprehensive description, Barrett (2022) offers the following definition on the concept of sound diffusion:

> By placing loudspeakers at different distances and angles from the audience, sound can be spatialized in real time as a live performance. The goal is to project and enhance spatial contrast, movement, scenes, articulations, and other characteristics of the music, and for the chosen interpretation to be for the benefit of the complete audience (p. 177).

Barrett (2022) continues explaining how loudspeakers are positioned in a hall and the performer controls the level that is sent to either individual loudspeakers or groups of them. She also highlights how the resultant space will be a combination of the space of the work and the space where it is being performed, and how all these elements add unique characteristics to each concert.

The views presented by Barrett (2022) align with Mooney's (2005) in emphasising the role of loudspeakers and performance space in creating a spatial experience. However, Barrett goes further by detailing the specific techniques and considerations involved in achieving spatialisation through loudspeaker placement and control.

All these definitions foreground the performative aspect of spatialisation in electroacoustic music, emphasising that it often involves active, real-time control during presentation. Therefore, for this research, sound diffusion will be defined as the dynamic process of manipulating sound levels and spatial distribution within a performance space to create a desired listening experience for an audience. It involves an active control of loudspeaker levels and the consideration of room acoustics to enhance the spatial characteristics of the music.

The process of sound diffusion is so crucial in electroacoustic music that it has even been considered as an integral part of the composition process as well, and not only a performance technique (Stansbie, 2013). It has been argued that spatial characteristics are "inseparable from sound identity, and can be investigated in a similar way to other aspects of sound" (Barrett, 2007, p. 243). Harrison (1999) states that most electroacoustic music (particularly the one linked to the acousmatic tradition) is intended to be diffused, and that diffusion is an "extension of the compositional approach" (p. 125). Along similar lines, Smalley (2000) indicates that diffusion considerations inform his compositional decisions, while Adrian Moore (2016) notes that, by being conscious of sound diffusion, more than often practitioners gain a better understanding of the composition process.

Similarly, Ambrose Field, in an interview with Larry Austin (2001), argues that diffusion or any other spatial and performative aspects have to be considered during the compositional process.

[9] Such as the GRM Acousmonium (Barrett, 2022).

Furthermore, according to Barrett (2022), sound diffusion can be even considered as another stage in the compositional process, because "exploring how music behaves in space enlightens compositional choices as well as serving to express the full potential of the material" (p. 177).

7.3.2 Challenges and Considerations of Sound Diffusion

Several challenges are associated with diffusion in electroacoustic music. Amongst these issues, it is possible to find the risk of creating an uneven listening experience for audience members, due to the reception of an overall unbalanced image, a weak mid-phantom image, or experiencing things either too distant or too close (Harrison, 1999, p. 121). For instance, stereophony always works best when the listener is located in the 'sweet spot', which can be problematic in a concert situation for electroacoustic music, since that position is usually reserved for the composer/diffuser or the sound engineer (Baalman, 2010). Adrian Moore (2016) also highlights this issue of an unbalanced listening experience by advocating for a "democratisation of space and material" (p. 113) facilitated when the composer/performer manages to create an equilibrium where every audience member can have a moment to enjoy the music.

Amongst other challenges it is possible to find the acoustic variances in performance spaces (Mooney, 2005; Barrett, 2022), the technical limitations of different spatialisation systems (Baalman, 2010), and the necessary balance between compositional intent with performance flexibility (Barret, 2007). Barrett also argues that performance issues may be considered during the composition process, to the point where a solution could be creating two distinct mixes, one for release the material and another for diffusion performance.

Mooney (2005) argues that to minimise these risks it is necessary to take appropriate measures. Since one of the measures that can be taken is to balance or to 'correct' the piece according to the performance space characteristics, Mooney asserts that the process of sound diffusion is an active and intentional one. In that sense, sound diffusion may be primarily corrective since it often seeks to match the spatial intentions that the composer had during the creation process (Barrett, 2007; Stansbie, 2013); otherwise, the spatial musical structure becomes less accurate and goes in a different direction. However, this could be taken as a starting point for the performer, as then they could further "dramatise, enhance, enlarge, exaggerate, expand and/or spatialise" (Stansbie, 2013, p. 49) what is on the fixed medium. In that case, the diffuser moves from a corrective to an expressive stage. To achieve this, Stansbie argues that the performer must possess "an intimate knowledge of the music that is being performed" (p. 58), memory skills, aural skills to listen to the response of the space to the music and make the necessary adjustments, and manual dexterity. Along similar lines, Barreiro (2010) remarks the unique possibility that diffusion provides of enhancing the spatial characteristics of a work, in the same way that Smalley (2000) asserts that performers should be able to expand the 'composed' space when working in the 'listening' space. This, in Smalley's views, should also go hand in hand with a dramatisation of the space (through, for instance, an exaggeration of spatial gestures), and with an expansion of the possibilities of the work's dynamic range.

7.3.3 Multichannel Formats in Electroacoustic Music

It has been argued that stereo has been the most used format for electroacoustic works (Harrison, 1999; Smalley, 2000). Nevertheless, composers have been progressively working more with

different types of spatialisation systems, including the use of 5.1, 7.1, quadraphonic, and octophonic (Otondo, 2008), and even with systems of 16, 24, 32, or 64 channels with Ambisonics (Barrett, 2022). Although some scholars may consider many of these formats as an extension of stereo (Baalman, 2010; A. Moore, 2016), the choice of a particular technology to use during the compositional process might arguably be based on factors such as the desired accuracy of the spatial image and the performance context (Baalman, 2010).

In Barrett's (2022) views, multichannel works are usually composed for a fixed loudspeaker configuration. Ideally, these channel-based works preserve the composer's spatial intentions; however, practicalities make this concept problematic. Rooms acoustics, speaker placements, and the audience relative position to a specific speaker (or array of speakers) can still create an unsatisfactory translation of the composer's original spatial approach. Besides this, because of the limited room for manoeuvre, the presentation of these pieces may be often considered to be a playback rather than a performance per se (Stansbie, 2013). However, it is possible to find modern loudspeaker orchestras that can accommodate channel-based sources and distribute them to a specific number of speakers, and even blend them with the possibilities of live diffusion (Barrett, 2022).

Barreiro (2010) argues that the use of space in multichannel electroacoustic compositions tends to fall into two categories. In the first one, the focus is to localise the sounds precisely in the space, and clearly identify the trajectories of the sounds within that space. Here, it is common to find amplitude panning as the main technique. The second category is based on a more generic distribution of sounds, where the precise location is not that relevant. In this case, approaches such as granulation and spectral diffusion are used to obtain the desired results. These views are in line with the ones presented by Baalman (2010), who asserts that common compositional techniques include creating trajectories, distributing the sound energy, simulating acoustics, enhancing acoustics, and alluding to spaces by "using sounds that are reminiscent of specific spaces or environments" (p. 210). These techniques can be used in conjunction and can usually interact with other elements during the compositional process, or even with other external elements when there are other media involved.

The use of multichannel in electroacoustic composition may enhance the feeling of being immersed in an environment (A. Moore, 2016). This sensation could be further intensified by the use of Ambisonics, since it allows, to some extent, to place sounds outside the boundaries of the speakers (Field, 2001). In that sense, Ambisonics is not only about assigning sounds to loudspeakers, but "to create an environment, to create real or imaginary physical spaces" (Field, 2001, p. 28). Ambisonics has gained ground during recent years, with first-order systems being the most popular. They are mostly used by artists working with field recordings due to the availability of equipment for recording in the appropriate format (Baalman, 2010). By using Ambisonics it may be possible to have more control over the spatial musical structure and to construct a better balance between the composition and the performance (Barrett, 2007).

In summary, the exploration of space in electroacoustic music is enhanced by the possibilities of technology, composition techniques, and sound diffusion (Barreiro, 2010), which is viewed not merely as a method of presentation but as an integral part of the compositional process itself. However, and in line with the views presented by Stansbie (2013), in this research sound diffusion will not be regarded as an extension of the compositional process, but as an important

aspect to consider during the creation of electroacoustic works. The field continues to evolve with advancements in technology and changing artistic approaches.

7.4 Space and Performance in Popular Music

The literature related to space in popular music shows agreement in most of its points. One of the most significant contributions comes from the work of William Moylan (2007); although he develops a characterisation for several music parameters that may be applied to any recorded music, his focus always seems to be on recorded popular music. In that regard, Moylan establishes that the spatial characteristics of stereo recordings cover three main areas: the stereo location of the sound source on the horizontal plane, the localization in distance from the listener, and the perceived characteristics of the sound source's environment.

Regarding stereo location, Moylan (2007) argues that sound sources are perceived as being on a 'sound stage' that is contained within the perceived performance environment of the recording. This 'sound stage' is the area where the sound sources are perceived to be collectively positioned. He also introduces the concept of 'imaging', which he defines as the "the perceived location of the individual sound sources within the two perceived dimensions of the sound stage" (p. 179).

In terms of the different distances that can be perceived in a space, Moylan (2007) differentiates the distance from the listener to the sound stage and the distance of each sound source from the listener. He asserts that the perceived distance of the sound source from the listener is related, to some extent, to the loudness of the signals and their amount of reverberation, but above all, that distance is "perceived as a definition of timbral detail" (p. 182). According to Moylan, the more timbral detail a sound source has, the closer it will be perceived. However, in order to differentiate between a closer or a distant sound source, the listener—arguably—should have a memory of the timbral characteristics of that source in an unaltered state, which makes this assertion somewhat contentious[10].

Regarding environmental characteristics, Moylan (2007) states that these fuse with the sound sources to create a unique sonic impression. In this sense, the overall environment can be perceived as a composite of the dominant and the other individual environments of the sound sources, or as a set of environmental characteristics that is superimposed on the entire programme. All these views, albeit with different terminology, exhibit similarities when comparing them to their electroacoustic counterparts, as discussed in the previous sections.

Similar models have been devised by other researchers. For instance, Lacasse (2005) establishes the concept of 'phonographic staging', which is derived from Moylan's work. Lacasse explains that this concept aims to describe "the effects following the manipulation of four main categories of sound perception through recording technology: loudness, space, time, and timbre" (p. 2). However, Lacasse emphasises more clearly that the model refers to the effects from the listener's point of view, or how those effects influence the way we perceive recorded sounds sources.

[10] Perhaps that is perfectly applicable for well-known acoustic instruments, but it is somewhat questionable for sound materials that are completely novel or synthetic.

Along similar lines, Allan F. Moore (2012) introduces the concept of the 'soundbox' to help contextualise the "*textural space* that a recording inhabits" (p. 30). He describes it as a virtual space for mapping the location of sound sources. This space has four dimensions, encompassing time, the laterality of the stereo image, the depth with the perceived proximity, and the height with the perceived frequency characteristics. Time is included as a dimension since, in Moore's view, the positioning of the elements within the soundbox can change over the course of a piece. Moore also describes two archetypes for positioning elements in stereo. The first one, named triangular mix, was used mostly during the first decades of stereo recordings in popular music, and it is characterised by three different positions in the mix. For instance, some elements could be positioned at the centre, whilst others hard panned to the left side, and the remaining hard panned to the right side. However, Moore argues that a second model was adopted from the early 1970s, being described as the diagonal mix. Here, lead vocals, bass drum, snare, and bass guitar are positioned at the centre of the stereo image, and the rest of the elements are distributed in the remaining space using variable configurations. Arguably, this is the model that is used by the majority of modern popular recorded pieces due to technical and aesthetic reasons. Amongst them, it is possible to find mono compatibility, vinyl cutting, and the predominance of the aforementioned elements in a popular music arrangement (Izhaki, 2008; Owsinski, 2022; Senior, 2019).

Finally, Tagg (2013) uses the concept of 'aural staging' to identify the acoustic parameters used in sound production that create the virtual reality of the position of instruments in a space, and asserts that the spatial characteristics are often overlooked in popular music. He goes further by stating that they also involve the location of "different sound sources in their own spaces, how those sound sources are positioned (either stationary or in motion) in relation to each other, as well as how each of these various configurations produce a specific overall effect on the listener" (p. 300). Although Tagg does not agree with A. F. Moore's 'soundbox' model due to the fact that he does not consider it appropriate to characterise space as a box, he agrees with the parameters used per axis in the 'soundbox' model. Tagg states that sound sources can be positioned on the horizontal axis by panning, while the vertical placement and perception of sounds is related to pitch, and the depth is linked to loudness, timbre, and reverberation.

All these models are useful for picturing and describing space in popular music, but they should be used with caution. For instance, Moylan (2007) goes even further with his 'sound stage' model by arguing that recorded music "represents an illusion of a live performance" (p. 177) and that listeners create in their minds the image of a physical space where the sound sources are located. In this sense, all sound sources occupy their own location in the 'sound stage' and, according to Moylan, two sound sources cannot occupy the same space simultaneously. However, it would be debatable to assume that any number of listeners actually imagine a virtual stage when listening to recorded music. Moreover, if that were the case, it would also be contentious to assume that that virtual stage could be applicable to any genre. This assumption may be somewhat valid for specific genres of popular music, where all the sound sources are distinguishable musical instruments associated with a standard rock or pop formation, i.e., acoustic drums, bass guitar, electric and/or acoustic guitars, keyboards, and vocals. In this case, mixing engineers position the different elements in the space via the use of panning, level manipulation, reverberation, and

delay[11], following a specific genre convention or using their personal preference (Owsinski, 2022; Senior, 2019). For genres where the use of electronic instruments for the creation and manipulation of material is primordial (such as Synth Pop, EDM, IDM, Hip-Hop, amongst others), however, these models would not prove to be useful. Trained listeners may be able to identify localisation of elements in the mix but will not necessarily associate that information with a virtual stage and the illusion of a live performance. Additionally, it could be argued that most people listen to popular music in less-than-ideal circumstances, with poor quality loudspeakers and decoding systems, or not creating an imaginary equilateral triangle with the left and right speakers, which renders the virtual stage idea impossible to communicate.

Albeit not agreeing with the idea of a virtual stage for representing space, it is clear that popular music practitioners use tools such as panning, levelling, reverberation, delay (often with BPM sync), and depth to create a sense of space in their productions. This is also enhanced by the additional sense of space given by the frequency content of the material, which can create a perception of height or verticality in works. Moreover, spatial characteristics are subject to be modified during the course of a piece, which also makes them variable in time. In addition, it is also apparent that current popular music practitioners adhere to the model of the diagonal mix for positioning the elements in the piece's space, which makes a great distinction between this practice and the electroacoustic counterpart. Whereas in popular music there is an actual model for spatiality, in electroacoustic music there is not any; moreover, there is a constant exploration of space in electroacoustic music that is not present in the popular music genre.

7.4.1 Performance in Popular Music

In most scenarios, the performance of popular music involves some form of amplification (Cashman & Garrido, 2019). Regardless of being performed in small venues, such as DIY venues, pubs, theatres, or concert halls, or in large-scale contexts such as arenas, stadiums or outdoor festivals (Kronenburg, 2019), transducers, such as microphones and speakers, amplifiers, and mixing consoles are always involved in one way or another (Cashman & Garrido, 2019). Here, there are similarities between popular music and the process of sound diffusion in electroacoustic music. In the latter, speakers are fundamental for the purposes of sound diffusion and, in most cases, multiple instances of them are positioned surrounding the audience. In popular music, however, it is common to use a stereo configuration, either in 2.0 or in 2.1, placed in front of the audience, with a separate monitoring system for the performers on stage. The type of loudspeakers used are varied, ranging from small PA systems to large complex line array systems[12].

In popular music, performers are typically positioned on stage, facing the audience to establish a direct connection. There is, then, a direct link and, eventually, an engagement with the audience through the positioning of performers, the performance itself, and all the gestures associated with the performance that are executed by the artists, such as looking at the audience, smiling, pointing and signalling, and clapping, amongst others. Here, it is also possible to find differences between the performance of popular and electroacoustic music. Considering sound diffusion, the

[11] Mixing engineers even identify drums panning via the descriptors "audience perspective" and "drummer perspective" (Martinovich, 2023), which indicates an implied understanding of a virtual stage.
[12] Although there are instances of more advanced sound systems at the time of writing, such as the Sphere Immersive Sound by HOLOPLOT (Gensler, 2023), these audio systems are not yet widely used.

performer is often—and ideally—located at the centre of the hall, surrounded by the audience and by the loudspeakers, and do not interact with the audience during the performance. Performers only address the audience for introducing themselves and their work, and for bowing after the music is played. However, if the performance includes some form of live electronics, it is common to find performers positioned on a stage in front of the audience and, potentially, interacting with them. In sound diffusion performances where no live electronics are involved, the audience behaves similarly to those at classical music concerts, sitting silently and clapping only at the end of the piece (see Section 1.5).

Regarding space, the performance of popular music shows a superimposition of environments (Moylan, 2007). On the one hand, audiences are presented with the spatial characteristics of the material being performed. This material is, either beforehand or live, carefully crafted by the artists and the sound engineer, including the processes of levelling and panning of all the elements in the mix and the use of different types of reverberation and other time-based effects. On the other hand, all these spatial characteristics are blended with the acoustic characteristics of the environment where the performance takes place. In this sense, and in line with the aforementioned views of Smalley (1997) and Janhan (2024), the resultant sense of space will depend on the spatial characteristics of the material and of the environment where the material is being presented. The agreement goes to the point where, just like in electroacoustic music, it has even been considered that popular music composers must work with those two distinct spaces in mind, even considering creating a balanced or an alternative version of the work depending on the space/medium used for playback or performance (Byrne, 2013).

But besides the aforementioned differences, the most notable one is that in popular music, once the resultant space is established, said space remains static in most scenarios. Throughout the performance, the sense of space perceived by popular music audiences remains unchanged, even irrespective of the physical position of the performers. Conversely, in electroacoustic music, space is one of the most important elements of the performance of the work and, through the practice of sound diffusion or the use of multichannel formats, the overall perception of space is effectively modified during the performance.

7.4.2 Multichannel Formats in Popular Music

Moylan (2007) asserts that with surround sound it is possible to find ourselves enveloped by the music, and that the 'sound stage' is much more complicated with imaging taking new dimensions. In surround sound, the localisation in front of the listener is replaced by a localisation in 360 degrees around the listener; in this sense, the mix may be either constructed in a way where the listener is placed *within* the 'sound stage', or where the front channels retain the frontal 'sound stage' and the surround speakers are used only for additional environmental information.

Moylan (2007) argues that although surround sound has been more used in recent years, stereo remains the standard of the popular music recording industry. Although there have been instances of multichannel formats in recorded popular music, such as SACD releases of works by Pink Floyd, Peter Gabriel, Miles Davis, amongst others (Audiophilereview.com, 2010; Music-CD, n.d.), these efforts have not seemed to appeal most audiences, staying only known at an audiophile level (Schofield, 2007). However, with the advent and establishment of music streaming services, new multichannel technologies have become prominent in the popular music

industry. Amongst these so-called 3D Audio technologies, it is possible to find, more notably, Dolby Atmos and Sony 360 Reality Audio. Although stereo remains the most used format, these new technologies have challenged the notion of its default use in recent years (Bresler, 2021), having been implemented in most streaming services and with an important number of works released in these new formats. Nevertheless, regarding live performance, popular music practitioners still use stereo as the main format, which is another distinction from electroacoustic music and its use of sound diffusion and multichannel formats for performance.

7.5 Space and Performance in Dynamic Hybridisation

Regarding space, the portfolio that accompanies this thesis shows a hybridisation in the positioning of elements or imaging in the 'sound stage' and in the exploration of spatiality in the formats used. As it was established, most popular music works use stereo as the main format and the diagonal mix model for imaging, whereas electroacoustic music uses stereo and other multichannel formats and no particular model for imaging. Additionally, and contrary to popular music, there is a higher exploration of space characteristics in electroacoustic music, moving elements in the space delimited by the format used, or using techniques such as granulation or spectral diffusion. Therefore, a dynamic hybridisation will imply, in this case, an integration of these characteristics and a flexibility in compositional decisions.

Out of the seven compositions in the portfolio, three of them are multichannel: *Myself* and *Deception* are quadraphonic pieces, and *As Heavy as a Man* is an octophonic work. As it was described in Chapter 5, *Myself* is a work that presents dynamic hybridisation by juxtaposition in several moments of the piece, but also sequential in others. It could be argued, however, that the predominant genre of the work is popular music, due to the inclusion of a strong rhythmic pattern, lead vocals, and a popular song form archetype. But considering that the work introduces a higher exploration of spatiality in the 'sound stage' created by the quadraphonic system, there is a constant dynamic hybridisation by juxtaposition in the piece, because this spatial characteristic—aligned with the electroacoustic practice—is continuously integrated with the rest of the elements that are closer to the popular tradition.

Besides this, the imaging used in *Myself* also shows dynamic hybridisation. The piece uses a version of the diagonal mix used in popular music, with drums, main bass line, and lead vocals in a similar focal point. However, this point is not only in the front stereo pair of the mix, but it extends towards the rear as well, using a larger area of the quadraphonic space (Figure 18.a, b, & c). Moreover, the drums and bass are not static in the piece, but they move in specific moments to create tension (as it is possible to see in Figure 18.a & b with the red dots indicating automation). In that sense, the spatial characteristics of drums and bass move—in a sequential manner, with sudden transition—from an approach aligned with popular music to an approach aligned with electroacoustic practice, where no established standards exist for spatial placement.

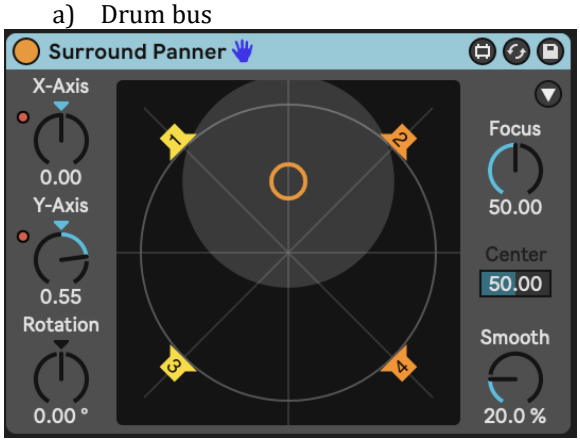
On top of this approach, there are several elements that are located towards the rear in the image, such as a noisy snare used in the choruses, or the delay for the lead vocals (Figure 18.d), amongst others. Besides this, several prominent elements were panned randomly with the aid of LFOs. This is the case, for instance, of a broken synthetic melody used in the interlude after the first chorus (3 min 1 s) and in the middle of the last two choruses (3 min 49 s and 5 min 56 s, respectively). Here, the notes themselves are randomised via the use of the Chance MIDI tool in

Ableton Live, and the location in the space is also randomised through the mapping of two LFOs to the X and Y axes of the Surround Panner[13]. In these examples, then, there is a constant juxtaposition between the variation of the diagonal mix used in popular music, and the panning tools and space exploration on a quadraphonic space of electroacoustic music.

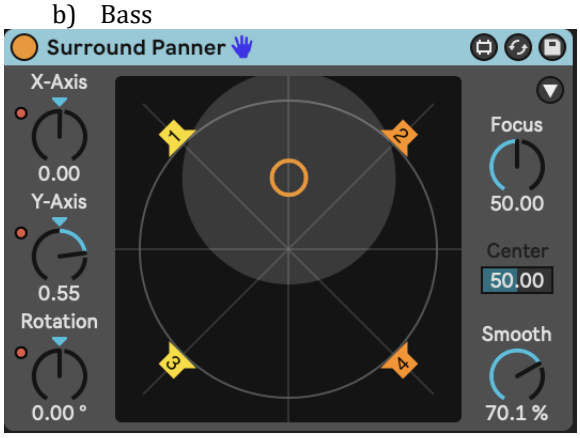
Figure 18

Location of Several Elements of Myself on the Quadraphonic Space

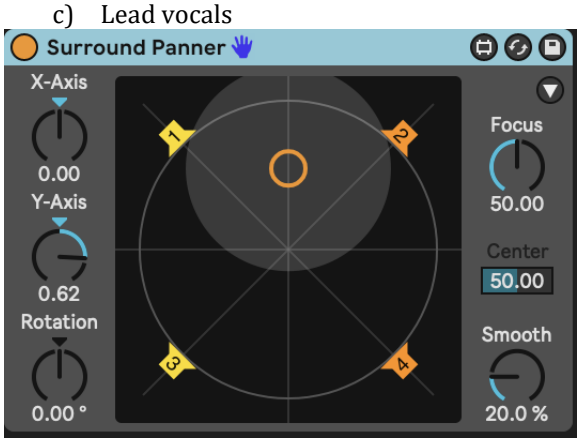
a) Drum bus



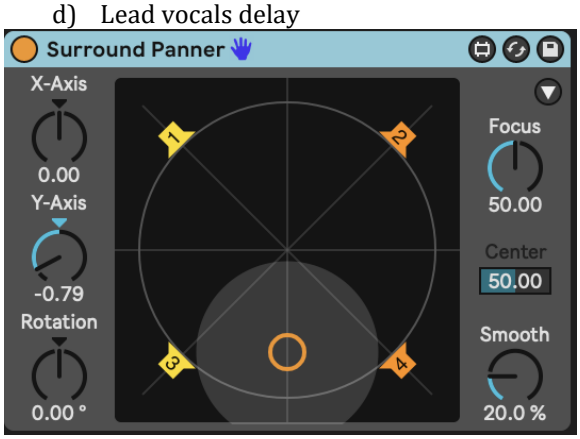
b) Bass



c) Lead vocals



d) Lead vocals delay



e) Broken synthetic melody

A slightly different approach was used in the spatialisation of *Deception*. The main bass line was located in a similar position as the one used in *Myself* (Figure 18.b), but the drum bus was located in a more central position on the quadraphonic space (Figure 19.a). In addition, the lead vocals

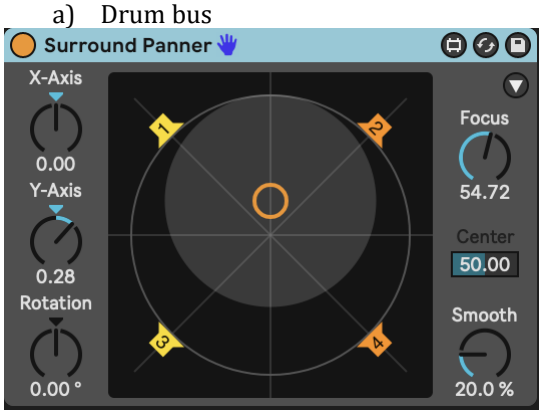
[13] The randomisation of specific elements of a piece is part of the author's compositional voice.

were entirely positioned in the front stereo pair, creating a disjointed version of the diagonal mix. The backing vocals and the delay used for the lead vocals were positioned towards the rear bus, and the main reverb used in the piece was centred on the 4-channel space, creating a distributed image of the voice material in the mix. Besides these materials, there are numerous electric buzzes in the piece, especially during the interlude (from 1 min 30 s to 2 min 13 s) and from 4 min 25 s to the end of the work. These materials have great prominence in the piece and there is a strong link with those timbres and electroacoustic music. Then, in order to fill most of the quadraphonic space with them, their spatial treatment was varied. Some of them were located entirely either in the front stereo pair or the rear stereo pair; others were automated to locate them at specific locations in particular moments during the piece (Figure 19.d), while others were randomised with LFOs (Figure 19.e).

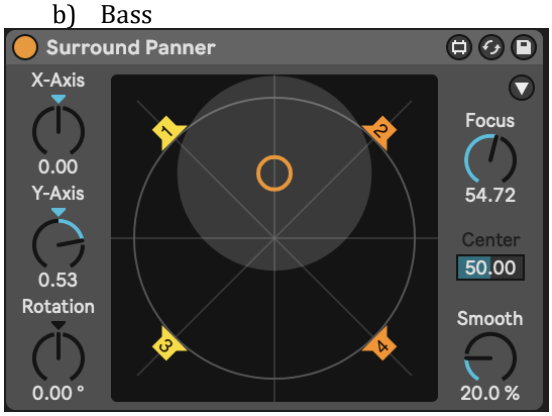
Figure 19

Location of Several Elements of Deception on the Quadraphonic Space

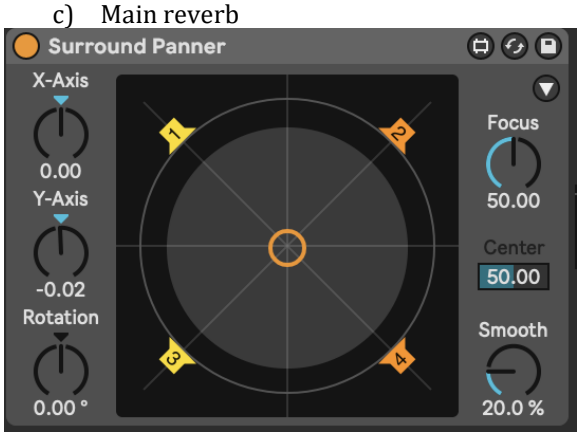
a) Drum bus



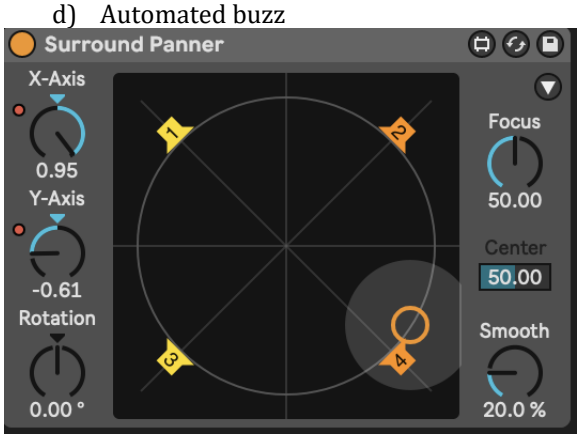
b) Bass



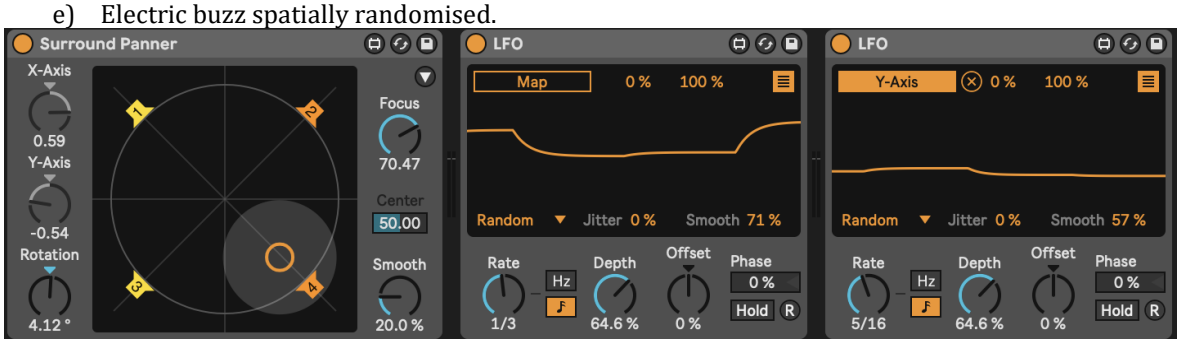
c) Main reverb



d) Automated buzz



e) Electric buzz spatially randomised.



The electric guitar used from the solo (3 min 10 s) to the end of the piece was also positioned only in the front stereo bus, while its delay was sent entirely to the rear pair. Finally, the rest of the textural elements were positioned towards the front bus of the mix. This approach implies, once again, a juxtaposition of spatial approaches used in popular and electroacoustic music. However, after the premiere of the piece, it was apparent that some changes were needed in the spatiality of the piece. The performance took place at the Sound Junction festival in April of 2024, using a ring of eight speakers surrounding the audience at floor level. To make use of this entire configuration with a quadraphonic piece, the front channels of the piece were duplicated into the wide ones, and the rear bus was also sent to the side bus. However, and in line with the difficulties mentioned in this chapter, several audience members noted in informal conversation that some of the main elements were somewhat lost due to the proximity of the audience members to the speakers. In that way, audience members that were towards the rear of the hall (on a well-attended night) listened with more predominance the guitar delay than the dry guitar. These comments triggered changes in the mix of the piece, bringing elements such as the delays used for the vocals and the guitar towards the centre of the quadraphonic space in a new version of the work.

The rest of the performances of some of these compositions involved several challenges. Since the aim was to show a certain amount of hybridity, the performances included characteristics from both genres. For instance, if the work had an instrumental element, that element was performed live and facing the audience, which is a characteristic of popular music. This was the case with *I'll Wait* and *Myself* and their respective lead vocals, *As Heavy as a Man* and its bass guitar, and *Deception* and its lead vocals and electric guitar. The pieces that did not include a live element were performed using sound diffusion, even though they presented other elements that were closely related to popular music. Additionally, it is important to note that the last three pieces mentioned are multichannel compositions, which gives the inclusion of a live performer another layer of hybridity.

I'll Wait was performed three times during the course of this doctorate. It was premiered at the Sound Junction festival in the University of Sheffield in May of 2022, then performed at the Sound/Image festival in the University of Greenwich in November of 2023, and finally in Sound Junction again in December of 2023. In all these performances, the original singer of the work, Mia Martinovic, was the performer, alongside me controlling the live manipulations and diffusion. For the premiere, the system used was the sound diffusion rig of the festival, consisting in a ring of eight loudspeakers surrounding the audience at floor level, eight additional loudspeakers copying the circular figure but positioned at height, two loudspeakers mounted at the centre of the ceiling and pointing down, four additional speakers in each corner of the room, and one LFE loudspeaker (see Figure 20). I created a version of the work without the lead vocals and without some of the vocal manipulations and we loaded it to the sound diffusion system. A separate system received the live signal from the singer's microphone and sent it to an Ableton Live project that contained the same effects chain from the original piece. Besides this, there were four additional tracks armed for live looping and processing, and the output of this second system was sent to the main stereo pair of the diffusion system. During the performance, I moved between the control of the diffusion system and the live looping and manipulation, which were set right next to each other. I recorded specific phrases while the singer was performing into different clips of the four additional tracks, and played them during the interludes, solo, and outro of the piece (see Chapter 4). The idea behind this decision was being able to use the same vocals the audience

was listening to as the raw material for manipulations. During the moments I did not need to record or manipulate the vocals, I was controlling the sound diffusion system. In this way, I effectively applied a dynamic hybridisation by juxtaposition, combining at the same time the sound diffusion performance system of electroacoustic music, and the live vocal performance of popular music.

Figure 20

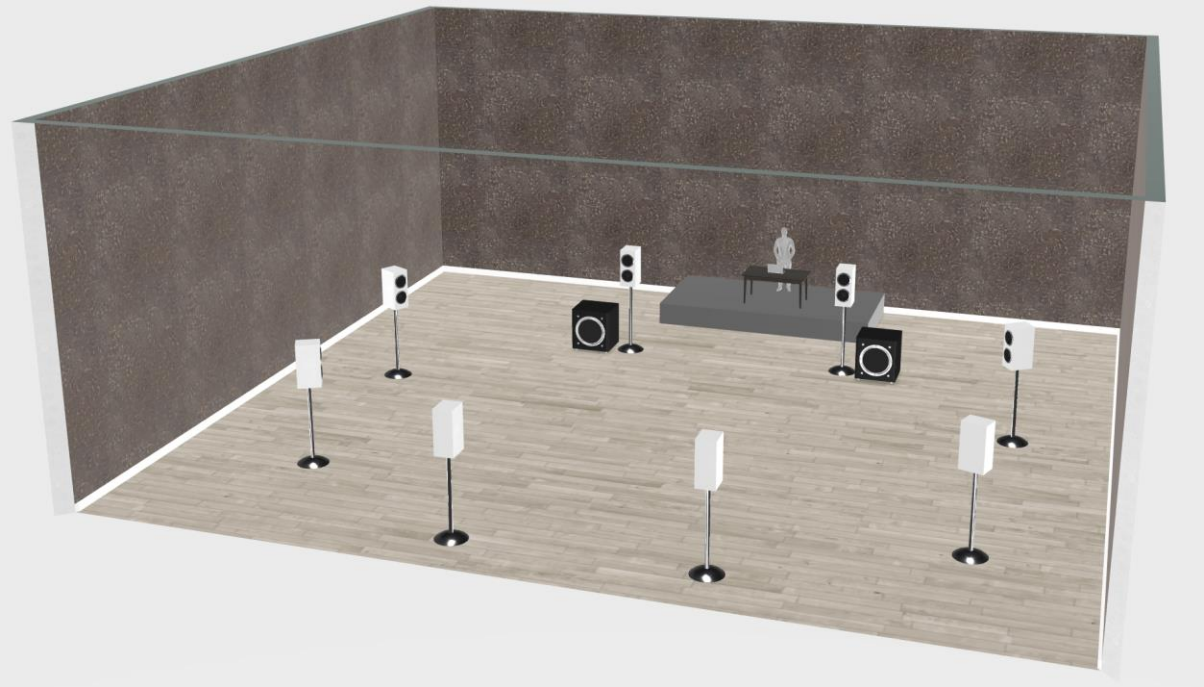
Layout of System for Performance of I'll Wait at Sound Junction Festival May of 2022

Note. Created in roomtodo.com.

A slightly different approach was used for the performances of *As Heavy as a Man*, and *Deception*. *As Heavy as a Man* is an eight-channel piece that includes the bass guitar as an instrumental and live element. Since it is a multichannel piece, it was decided that there was not going to be sound diffusion involved in the performance presented at Sound Junction in December of 2023. I played an eight-channel version of the work without the manipulated bass guitar on an Ableton Live project through an audio interface with eight discrete outputs that were sent to the ring of eight speakers and the two LFEs positioned at floor level surrounding the audience. At the same time, I performed the bass guitar part of the piece, sending that signal to the Ableton Live project with the same processing used in the original work and with the same imaging in the octophonic space. Similarly, *Deception* (premiered at Sound Junction in April of 2024) also used a stage in front of the audience for the performance of the lead vocals and the electric guitar, and the main ring of eight loudspeakers for the output. In this case, and as previously mentioned, the original four-channel outputs were duplicated, sending the front left and right signals to the wide channels as well, and the rear left and right signals to the side channels too. In this way, all the space surrounding the audience was used, avoiding any possible 'holes' in the image. The layout for the performance of these two pieces is depicted in Figure 21.

Figure 21

Layout of System for Performance of As Heavy as a Man and Deception at the Sound Junction Festivals



Note. Created in roomtodo.com.

An interesting case was the premiere of *Myself*, in December of 2022. This piece was performed right after *Young Sirs*, which was performed using the sound diffusion system of the festival with its 32 discrete outputs (an expanded version of the one depicted in Figure 20). After performing the first piece, I started performing and diffusing the introduction of *Myself*, which is (as stated in Chapter 5) dominated by electroacoustic sonic experimentation; however, when the introduction ended and the main rhythmic pattern began, I walked from the diffuser position at the centre of the hall towards the stage, where there was a microphone with an audio interface connected to Ableton Live and the Push 2 control surface. I performed the remainder of the piece on that stage, singing the lead vocals and manipulating my voice through Ableton Live. In this way, the transition from an electroacoustic focus to a popular music focus that is embedded in the composition of the work was also physically signalled by the movement from the 'standard' performance position of electroacoustic music to the 'standard' performance location of popular music, creating an instance of sequential dynamic hybridisation with gradual transition during the performance.

Additionally, it is worth mentioning the audience's response to this shift. As described in Section 1.5, electroacoustic music, particularly in academic contexts, aligns with the conventions of classical music, where performers maintain a formal behaviour and avoid audience interaction, while audiences remain silent to minimise distractions for others and the performers. These behaviours are part of the 'regulatory mechanisms' (Holt, 2007) that structure how genres are typically experienced. However, as I began singing *Myself* on the stage, I could see several audience members taking out their phones to film the performance, mirroring behaviours found in popular music concerts. This reaction signalled a shift in the audience's interpretation of the event, reflecting their adaptation to the new set of cues I introduced.

By incorporating popular music elements—such as gestures, dancing, and direct audience engagement—the performance of *Myself* prompted a reconfiguration of the socio-cultural framework of the genre in real time. This dynamic hybridisation not only transported the conventions of popular music into the electroacoustic setting but also reshaped the audience's expectations and behaviours. In Frow's (2015) terms, the performance created a new 'world', where elements of popular music encouraged a sense of connection and active participation. This highlights how genres are not fixed but can evolve and overlap through intentional disruption of conventions, facilitating new interpretations and interactions.

Other challenges that are worth mentioning for the performances of the works from the portfolio are the adjustments that needed to be made to all the live elements of the performances after the soundchecks. All these elements (vocals, guitar, and electric bass) were initially processed with the same settings that were in the original composition project. For instance, the vocals in *Myself* had a specific channel strip, reverberation and delay in the Ableton Live project but, after performing the soundcheck, it was noticeable that some changes were necessary. This is because the microphone and the preamplifier used for the recording were different from the ones used for the performance. Besides this, and as stated earlier, during the performance there was a superposition of spaces—the 'composed' and the 'listening' space[14]—that reacted differently to the original material. Amongst the modifications it is possible to mention a level increase in the high frequency range of the vocals, and less use of reverberation and delay.

Finally, all the performances of the works from the portfolio that included a live instrument created an additional connection between the piece and the audience, as it was drawn from several informal conversations with members of the audience after the performances took place. This goes in line with the notion that when integrating fixed-media music and an instrumental performer in a live situation, the visual focus is placed on the instrumentalist on stage, impacting on the overall perception and experience of the performance by drawing attention away from the fixed-media component and creating a stronger association with the instrumental side of the performance (Naylor, 2016; Smalley, 2000; Otondo & Barret, 2007). In addition, and in line with the views of Naylor, this connection is even stronger when the instrumental material in a hybrid work is a singing voice, likely because of the common tendency to pay attention to singing in other genres and because of the connection of the human voice and listeners (Chapter 6).

7.6 Chapter Summary

This chapter explored the critical role of space and performance in electroacoustic and popular music, examining how these elements manifested differently in each genre and how they converged in works created by the dynamic hybridisation method.

In electroacoustic music, space was found to be a fundamental compositional parameter. The concept of 'composed' space (Smalley, 1997) and the exploratory nature of spatiality were found central to the genre. Sound diffusion, a key performance practice, was highlighted as a method for real-time spatial manipulation, enhancing the listener's experience and expanding the work's spatial potential. Multichannel formats, ranging from quadraphonic to complex Ambisonic systems, were mentioned as frequently employed to create immersive sonic environments.

[14] According to Smalley's (1997) terminology.

Subsequently, it was noted that popular music, by contrast, typically adhered to stereo formats and employed more standardised spatial arrangements, such as the 'diagonal mix' (A. F. Moore, 2012). Spatial characteristics in popular music recordings were often described using concepts like the 'sound stage' (Moylan, 2007) or 'soundbox' (A. F. Moore, 2012), which helped contextualise the positioning of elements within the space of the mix. The chapter also addressed that live performances in popular music generally involve amplification and a frontal stage setup, creating a direct engagement between performers and audience. The spatial experience here was also found to be more static, guided by established norms that prioritise direct auditory and visual engagement.

The final section integrated the previous discussions to illustrate, once again, the concept of dynamic hybridisation, blending the spatial and performative qualities of both electroacoustic and popular music. This dynamic hybridisation was evident in the portfolio of compositions that experiment with multichannel formats and spatial techniques from electroacoustic music while incorporating elements of popular music. For instance, compositions such as *Myself*, *Deception*, and *As Heavy as a Man* demonstrate how these genres can be hybridised, offering innovative approaches to 'imaging' (Moylan, 2007) and space exploration. The hybridisation of these genres in terms of space and performance was manifested in ways such as the format used and how that format was explored in the piece, the spatial techniques and manipulations applied, the performance practices, the audience engagement, and the technological integration of both genres. Additionally, it was shown that the performances of these works showcased the challenges and opportunities of blending electroacoustic and popular music practices, including achieving consistent listening experiences across diverse audience positions and adapting to various performance venues.

In conclusion, this chapter showed that dynamic hybridisation of electroacoustic and popular music focused on space and performance offers a fertile ground for innovation. It presents composers and performers new tools for expression and audience engagement, while also demanding careful consideration of technical and aesthetic factors. As technology continues to evolve and genres further integrate, this area of hybridisation has a possibility of becoming a dynamic and influential aspect of contemporary music practice.

8 Conclusions

8.1 Overall summary

This thesis has explored the complex terrain of hybridisation between electroacoustic and popular music, proposing a novel method named 'dynamic hybridisation' to create and analyse works that blend elements from these two traditions. Through a combination of theoretical inquiry and practical composition, this research has highlighted the challenges and opportunities that arise when integrating genres.

The study began by examining the fluid nature of genre definitions and the difficulties of music categorisation, particularly in the context of electroacoustic and popular traditions. This foundation drew attention to the need for a flexible approach to hybridisation that acknowledges the subjective and evolving nature of music genres. Building on this, the research critically analysed existing methods of hybridisation, identifying limitations in approaches that rely on rigid categorisations.

As a reaction to these limitations, this thesis introduced the concept of dynamic hybridisation, defined as the adaptable process for integrating two or more genres or genre elements. This method, further divided into the juxtaposition and sequential categories, provides a framework for creating and analysing hybrid works that respect the fluid and complex nature of genre interaction. The practical application of this method was demonstrated through a portfolio of original compositions that showcased the hybridisation of electroacoustic and popular music, with a focus on form, rhythm, voice, and space and performance. This focused analysis revealed the diverse ways in which dynamic hybridisation can be applied, from expanding traditional song structures through sonic exploration to blending vocal materials and exploring innovative spatial configurations and imaging, amongst others.

Although the analysis was focused on certain pieces in specific chapters, the flexible nature of the dynamic hybridisation method implies that all the compositions could be equally suitable across the different analytical categories. This adaptability highlights the core strength of the method: its ability to go beyond rigid boundaries and allow for a fluid hybridisation of genres. As such, the same piece can offer valuable insights into different parameters, whether it is form, rhythm, voice, or space and performance, underscoring the comprehensive and integrative potential of this hybridisation method.

8.2 Critical Reflection

The method of dynamic hybridisation proposed in this doctoral project offers several advantages over existing approaches to genre integration. By emphasising adaptability and embracing the fluid nature of genres, it provides a suitable framework for creating and analysing hybrid music, whereas rigid definitions and structures can limit creative exploration. Moreover, and as seen through this thesis, hybridisation of electroacoustic and popular music has already proven to be a fertile ground for innovation, and it can continue to enable new sonic possibilities and expressive avenues.

While the focus on specific musical parameters—form, rhythm, voice, space and performance—provided valuable insights, it somewhat limited the overall scope of analysis. Other elements, such as timbre, spectromorphology (Smalley, 1997), pitch, or harmony, amongst others, could potentially offer additional perspectives on the dynamic hybridisation method. Given the durational limitations of this research, these elements could not be considered within the thesis. Even so, they constitute a logical next step in my personal research going forward.

The portfolio of compositions accompanying this thesis demonstrates the practical application of the dynamic hybridisation method, but it also reveals the challenges of balancing elements from popular and electroacoustic music. Although (as discussed in Chapter 2) many composers have created hybrid works, the composition process of pieces that successfully integrate these two traditions requires careful consideration of aesthetic and technical factors. Amongst these factors it is possible to find a deep theoretical and practical knowledge of the parent genres, an awareness of their cultural and historical contexts, a strong understanding of the technologies associated with their creation and dissemination, and the ability to negotiate the tensions that may arise between those distinct musical practices.

Additionally, reaching a balance between experimentalism and popular practices remains an ongoing challenge, as the integration of electroacoustic and popular music demands both innovation and the preservation of genre-specific qualities that are associated with those categories. However, and as emphasised throughout this thesis, contemporary music practice demands for an openness and flexibility in compositional methods; this is due to the multifaceted nature of the work by modern composers, the shared technologies used in both music practices, and the wide access to a myriad of musical genres available to both listeners and creators today.

8.3 Avenues for future developments

There are several directions in which this research will be expanded:

- Extended Parameter Analysis: Future research could explore additional musical parameters beyond those covered in this thesis to provide a more comprehensive understanding of hybridisation possibilities.
- Cross-Cultural Applications: While this research focused primarily on Western electroacoustic and popular music traditions, future studies could explore dynamic hybridisation in the context of non-Western or global music practices.
- Long-term Genre Evolution: Studies that track how hybrid forms influence the evolution of both electroacoustic and popular music genres could provide relevant insights into the broader impact of hybridisation on musical culture.
- Technological Developments: As music technology continues to evolve, new tools and techniques for sound manipulation and spatial audio—particularly those related to AI and Ambisonics—may emerge, offering new possibilities for hybridisation.

8.4 Final Thoughts

In conclusion, this thesis contributes to the growing discourse on hybrid music forms, demonstrating how the integration of electroacoustic and popular music can lead to novel

compositional methods and interesting sonic outcomes. Dynamic hybridisation, then, should not be considered merely a compositional method but a broader artistic strategy. As the landscape of contemporary music continues to evolve, the dynamic hybridisation method can provide a strong foundation for future exploration, encouraging composers and researchers to challenge traditional boundaries, foster a dialogue between genres, and embrace the complexities of modern musical integration.

Appendix I: Lyrics of Works from the Portfolio

I'll Wait

Verse 1
Here I stand, empty hand
Wondering where to hide
Yearning for those better times
That seem so hard to find

Verse 2
Hear you whisper in my head
Like falling through the air
Memories won't fade away
Will only cause me pain

Chorus 1
But I'll wait
I'll stay
I'll wait for you
Until we find a home

Verse 3
I will not say that it's too late
That I should find my way
There's no place I want to be
Without you next to me

Chorus 2
'Cause I'll wait
I'll stay
I'll wait for you
Until we find a home

Bridge
I know there's still a chance, I feel you believe it too
I see it in your eyes, they always gave me the truth
Send shivers down my spine, just like you used to do
Just hold me in your arms, this time don't you let me go

Chorus 3
'Cause I'll wait
I'll stay
I'll wait for you
Until we find a home

Myself

Verse 1
There's nothing left from what you gave to me
Not that I can see
Just empty spaces filled with broken dreams
And nothing to believe

Verse 2
Now got the instructions someone left for me
But you know I can't read
It doesn't matter if they make me free
With no way out of here

Chorus
If I stop now everything I did goes to waste
It won't be safe for having a chance
To save me from myself

Verse 3
I guess I've changed, I'm no longer the same
But I'm still so afraid
I only hope I end this vicious game
To help me hide my rage

Bridge
The fragments of a world
That is not there anymore
Our obscure desires
Every second of every hour

The very thing you are
Slips away into the night
There is no denial
When you've lost all your power

Chorus
If I stop now everything I did goes to waste
It won't be safe for having a chance
To save me from myself

Deception

A1
Can’t seem to escape from all this silence and pain
On restless nights I thought I was going insane
But now I, but now I

A2
Can’t see through this rain and all the darkness again
Oh, countless times I’ve thought of running away
But now I, but now I

B1
In the chaos of your deception
We might as well feel alive
Listen to the noise of your creation
When it gets you inside

B2
You should question your own temptation
Or you might as well think of mine
You’re just a glitch in my imagination
Captured and waiting to die

A3
Can’t seem to forget or am I just so afraid
Oh, reckless moment luring us out of our way
But now I, but now I

A4
Can’t seem to escape from all this darkness and pain
Oh, countless times I’ve thought of running away
But now I, but now I

Appendix II: List of Contributors to the Portfolio

Mia Martinovic (Croatia) – Lead vocals and vocal material in *I'll Wait*.
Sally Jones (UK) – Vocal phrases and vocal material in *Young Sirs*.

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