2024

Towards Elucidating Psychological Arousal in Response to Music Theatre

Green, Ryan Thomas

https://pearl.plymouth.ac.uk/handle/10026.1/22569

http://dx.doi.org/10.24382/5202
University of Plymouth

UNIVERSITY OF PLYMOUTH

“Towards Elucidating Psychological Arousal in Response to Music Theatre”

RYAN THOMAS GREEN

A thesis submitted to the University of Plymouth
in partial fulfilment for the degree of

DOCTOR OF PHILOSOPHY

School of Art, Design and Architecture

May 2024

Acknowledgments

A special debt of gratitude is firstly to my supervisors, Professor Eduardo Miranda, who was always ready to help with any request I had, and never failed to give his unwavering support. Additionally, Dr Núria Bonet, who offered meticulous ratification and highlighted the most interesting and curious areas of the thesis.

I would also like to acknowledge the support from my research coordinators, Dr Péter Bokody and Dr Louis Halewood, Dr Jane Grant, Dr Sana Murrani and the team at the Doctoral College. Parts of this research project were financially supported by the School of Society and Culture, Researcher Development Fund.

Many thanks also go to Eileen Ford who outdid herself as my study skills tutor, with constant support and help overcoming my dyslexic slip-ups. Also, gratitude must be extended to Joanna Gwincinska who was fantastic as my support mentor and kept me supplied with cups of tea and a sympathetic ear.

I would like to recognise my friends Kate Ferguson, Beth Strongman, Rob Grace, Anna Rogers, Kat Endacott, without their laughs and encouragement, this thesis could never have been completed. Special thanks also must go to my Brighton ‘family’, Steffi Chapman, Neil Carmichael, Chloë Snuggs, Vicky Clement and Matthew Clement, who kept me sane with visits at university and provided places for me to stay whilst on leave.

Thanks also to my colleagues and friends at the Interdisciplinary Centre for Computer Music Research, Ben Payne, Clive Mead, Rachel Horrell for their academic support. With special thanks to Dr Archer (Tom) Endrich for sharing his

memories and personal collection of music theatre scores and programmes from his time at University of York.

To my secondary school music teachers, Debra Blake, and Hillary Petrie, for their inspiration and encouragement in my musical ability and persuasion to join jazz bands, musical theatre orchestras, composition clubs and choirs at a young age. I am very fortunate and thankful for everything you did to lay the foundations for my musical education, without this I could never have completed any of my degrees, and I am forever in a debt of gratitude.

And finally, to my parents, Tony and Tina and my sister, Rebecca, whom without their financial and moral support, this would not have been possible. My final acknowledgement is reserved for my late mother, to whom this thesis is dedicated.

“Dyfal donc a dyr y garreg”.

Declaration

At no time during the registration for the degree of *Doctor of Philosophy* has the author been registered for any other University award without prior agreement of the Doctoral College Quality Sub-Committee.

Work submitted for this research degree at University of Plymouth has not formed part of any other degree either at University of Plymouth or at another establishment.

A programme of advanced study was undertaken, which included taught modules taken: MARE707.

The following external institutions were visited or consulted for research and purposes:

- Cardiff University
- Falmouth University
- Manchester Metropolitan University
- Nottingham Trent University
- Sheffield Hallam University
- University of Birmingham
- University of Brighton
- University of Bristol
- University of Exeter
- University of Huddersfield
- University of Leeds
- University of Liverpool
- University of Manchester
- University of Newcastle upon Tyne

- University of Northumbria at Newcastle
- University of Nottingham
- University of Portsmouth
- University of Salford
- University of Sheffield
- University of South Wales
- University of Sunderland
- University of Sussex
- University of the West of England
- University of York

1. Publications:

Green, R.T. 2022 'Approaches Towards Elucidating Emotional Responses to Music Theatre' *The Open Review* [ONLINE] 7 (81-88). Available at: http://doi.org/10.47967/TOR2022TRANS.VOL7.12.

2. Conference Presentations:

Green, R.T. 2022 Let's Talk About Music Theatre: Etymology, Praxis and Practice [Research Presentation]. Interdisciplinary Centre for Computer Music Research, School of Society and Culture, University of Plymouth.

Green, R.T. 2022 Towards Elucidating Psychological Impact of Orchestration Aesthetics in Music Theatre [Conference Paper]. BFE/RMA Students' Conference, University of Plymouth.

Green R.T. 2021 Towards Elucidating the Psychological Impact of

Orchestration Aesthetics in Music Theatre [Conference Paper]. South West Doctoral Training Partnership, Bristol.

Green, R.T. 2021 Elucidating Orchestration as an Aesthetic of Music Theatre [Conference Paper]. General Panel, International Federation for Theatre Research Conference, Galway.

Green, R.T. 2021 Elucidating Orchestration as an Aesthetic of Music Theatre [Research Presentation]. ICCMR, School of Humanities and Performing Arts, University of Plymouth.

Green, R.T. 2021 Innovation in Research: Evaluating Emotional Response to Aesthetics of Music Theatre [Conference Paper]. Businesses and Societies Faculty 2021 Doctoral Annual Conference.

Green, R.T. 2021 Elucidating Orchestration as an Aesthetic of Music Theatre [Conference Paper]. South West Doctoral Training Partnership.

Green, R.T. 2020 Elucidating Orchestration as an Aesthetic of Music Theatre [Conference Paper]. University of Plymouth, Doctoral College, Research Showcase.

Word count: 48,970

Ryan Thomas Green BA (Hons), MA, SMISM, AFHEA

Date: Wednesday 13th December 2023

Ryan Thomas Green

Towards Elucidating Psychological Arousal in Response to Music Theatre

This thesis explores the psychological effects of observing experimental music theatre performance video recording. Experiencing music theatre can evoke a range of aesthetic and psychological emotions in audiences. These include joy, sadness, fear, unease, excitement, and empathy. Immersion in stories and characters can lead to temporary shifts in mood, perception, and relationships with the artwork.

Watching experimental performance can activate areas of the brain associated with reward and emotion and in some cases, memory formation. These neural responses contribute to a sense of enjoyment, distress, and personal growth. The psychological impact of music theatre can be argued to extend beyond any single performance and shape how audiences interpret and respond to the world around them.

By considering theatrical elements, and synthesising them with music, music theatre is a uniquely powerful medium for influencing the mind and shaping human psychology. Music Theatre productions create a sense of discovery and challenge assumptions about what is possible within the art form. By incorporating avant-garde technique, intermediality, and unconventional spaces, and often using complex musical language, music theatre can be perceptively alienating to some observers. This exposure to abstract and ambiguous performance activates cognitive processes as audiences work to make meaning from them. This leads to a heightened sense of engagement and generating confusion, frustration, or discomfort.

Overall, this thesis demonstrates that music theatre produces profound and lasting psychological effects on audiences. This leads to wider discussions around philosophy, art, and culture and how composers can galvanise music theatre work for future audiences.

Contents

List of Illustrations

List of Tables

Chapter One

Introduction

1.1 Introduction

Experimental music theatre (also referred to as new music theatre) is a complex area of performance studies and quite possibly one of the most poorly documented and therefore, misunderstood. Music Theatre is an art form which combines experimental music performance with theatrical aesthetics such as costume, movement, set design or lighting effects.

Exposure to diverse forms of music theatre has the potential to broaden cultural perspectives and promote cross-cultural understanding. By experiencing different types of music and theatre, individuals can learn about different cultures and perspectives, which can foster a greater sense of empathy and appreciation for diversity. Observing performance can also encourage creativity and inspiration, as audiences are exposed to new ideas and artistic expression that can inspire their own creative pursuits or inform their views and perceptions of the world.

This present study aims to explore how audiences respond aesthetically and psychologically to observations of music theatre; to identify any perceived emotional barriers between composers and audience members; to discover the overall lasting psychological impact music theatre can have on potential audiences, and finally to discover the state of the art with the view to preserving the art form and galvanising it for future audiences. The research applied music-psychological experiments and surveys to explore the emotional and psychological effects of different music theatre had on emotional arousal. This

led to the discovery of the possibilities for composers to create relevant, engaging and artistically accessible works for contemporary audiences.

Experimental music theatre became an important tool which allowed composers to explore new ideas and concepts. By breaking away from traditional music and music and theatre performance conventions, composers became free to experiment with new forms of expression, and to create works that are truly original and innovative, in strange environments and using a new musical language. In addition, experimental music theatre has been a powerful tool for social and political commentary. By using unconventional forms of music and theatre, artists can explore complex issues and ideas in a way that is both engaging and thought-provoking.

This thesis is the first of its kind to bring to the centre, the exploration of the psychology of music theatre and survey potential audiences' emotional and aesthetic responses to the work. Music Theatre as a term, refers to the art form which emerged from 1960s experimentalist, Avant-garde music composers, which synthesises multi-disciplinary practice such as, but not exclusively on, the use of music (organised sound) as a driving force and elements found in theatre such as drama, speech, movement, dance, and performance presentation elements such as lighting, sound technology.

1.2 Problem Statement

Music Theatre has suffered a creative stall in recent years, and it is unclear as to the reason why. To date, no dedicated research has been conducted to determine the psychological impact of music theatre on potential audiences, which makes it difficult to understand the underlying causes of this creative stagnation.

> Ignored by the public; rejected by the funding bodies; neglected by the academia; misunderstood by the composers themselves. Such is the state of the art (Filoseta, 2006: 50).

Therefore, the purpose of this thesis is to investigate the psychological effects of music theatre on individuals and to explore whether this art form is facing emotional barriers that hinder its artistic creation.

1.3 Contextual Background

Music Theatre can be traced through history to the origins of Greek performance where a combination of music and theatre was combined as one art form (for example literature was heavily intertwined with theatre) as opposed to the more contemporary concept of separating art forms. Equivalent such performance art could also be found in Japan with the emergence of 15th Century Noh plays. These performances were primarily driven by emotion and encompassed music-making as performance with costume, movement, and speech (Noh Drama, *n.d.*). In Britain, following the Great Wars, a post-modern movement began to develop with an emphasis on anti-establishment and politically motivated work emerging in the 1960s. Young artists sought to challenge perceptions of sexuality, race, fashion, and recreational drug consumption (Donnelly, 2022: 6). This change in attitudes allowed for greater forms of expression without suppression with the abolishment of the Theatres Act (1843) (Theatres Act 1968) which had formally permitted authorities to restrict or censor performances.

In Europe, new forms of theatre were emerging. Directors such as Walter Felsenstein at the Komische Oper developed his 'Musiktheater' to assert certain values which were neglected in day-to-day opera performance. In the 1950s, Felsenstein used the term to 'designate theatrical work in which dramatic and musical elements are used so as to melt into one another and to create the total

impression of ‘seamless unity’’ (Fuchs, 1991: *n.p.*). As composers started to experiment with the synthesis of music performance as theatre, new work which questioned the concepts of what music performance could be began to challenge audiences.

Instrumental music theatre became of interest to composers such as Harry Partch and Mauricio Kagel where the performance of the instruments became the theatrical focus, while composers such as Peter Maxwell Davies and particularly Harrison Birtwistle created work informed by opera, pre-baroque, and medieval music (Service, 2012), (Kolassa, 2021: *n.p.*) Were then incorporated into the story telling. Since 1970, music theatre has enjoyed technological revolutions and a blur in performance genres (Salzman and Desi, 2008: 376). Today, the academically debated term ‘music theatre’ is becoming less used with composers favouring more elucidated terminology which more accurately reflects what their piece is. Regardless, music theatre, in its various forms, is enjoying a small renaissance with building academic interest and the publication of new publications (Adlington, 2020; Rebstock and ITI Germany, 2020) further advancing discourse of the art form in Britain and Europe.

This thesis represents the first contemporary survey of the psychological impact music theatre has the potential to leave on audiences. By collecting reactions to experimental music theatre, we, as artists, become more aware of our art and ourselves so we become less disconnected with potential audiences ensuring that the art form does not become extinct. Previous doctoral studies in music theatre include Janet Halfyard (1996) and John Watson (2005). A major thesis examining the musician as theatrical performer has recently been completed (Hübner, 2013). The most recent thesis which explicitly explores music

theatre as interdisciplinary practice was completed at University of York (Luck, 2020).

For the purpose of this study, music theatre will be defined primally using the Wardour *c.*1965 agreement (Hall, 2015: 17).

> ‘Music Theatre’ […] should be concise, contain no stage fripperies, no large orchestras, no divas, no gigantic arias. It could include the spoken word, ideally be done in the round, and music and theatre should be integrated for the clear purpose of putting across a socio-political message. In its purest form, the idea of plot could be dispensed with, in which the content could be abstract.

Although this is not the most flawless definition, it is the closest, British composers came agreed definition, for British work at least. This study recognises that this declaration was made around 58 years ago, so will employ it with discretion where appropriate. Although there appears to be many ways of writing the noun ‘music theatre’ following in Felsenstein’s school of thought, this thesis will consider music and theatre as equal pillars and will style it appropriately (*i.e.*, Music Theatre/music theatre). Watson attests that to lean towards the egalitarian, unhyphenated, ‘leaving agreement in capitalisation for the syntactical context’ makes most sense (Watson, 2005: 12).

1.4 Research Aims

The first aim of this research is to further discover how audiences respond emotionally and, to a lesser extent, aesthetically to experimental music theatre performance. This will contribute to the ongoing but inadequate discourse of music theatre in the United Kingdom and Ireland. This research will aim to demonstrate how contemporary audiences go about emotionally comprehending experimental performance work, and what emotional valence is achieved when asked to observe stimuli with little to no context provided. Data such as this may

demonstrate whether audiences feel alienated by this work. This will provide important data demonstrating the thought process we go through when trying to make sense of highly multifaceted music-theatrical performance which often employs complex musical language.

The study will investigate how contemporary audiences comprehend experimental music theatre performances and whether they feel alienated by them. One of the key objectives of this research is to provide important data on the thought process involved in making sense of complex musical language. By doing so, the research may help to clarify some of the misunderstandings or misconceptions surrounding this type of performance art. The data gathered from this study will provide valuable insights into the emotional and aesthetic responses of audiences to experimental music theatre performances. By understanding these responses, the research may help to identify the elements of the performances that resonate most strongly with audiences, and how those elements contribute to the overall experience. Ultimately, this research aims to enhance our understanding of the complex world of music theatre and provide valuable information for audiences.

1.5 Literature

Although there is sufficient literature regarding music theatre prior to 1975, there is a relative deficiency of information on music theatre post 1975. The literature review argues that music theatre as an art form is worthy of research efforts, and points to fresh interest in the subject area as evidenced by publications and conferences. However, the review notes a substantial gap in research relating to the psychology of music theatre and recommends that further enquiry be carried out to discover how audiences respond to challenging, experimental performance

and how effectively they are able to assimilate their emotions when asked. This study applies a definition of music theatre as an art form championed by avant-garde composers in the 1960s, synthesising multi-disciplinary practices such as the use of music as a driving force and elements found in theatre such as drama, speech, movement, dance, and performance presentation elements such as lighting and sound technology. It highlights the fact that music theatre can be both immersive and alienating, and that it lends itself to a more representational approach to complex emotional material. Music Theatre is often devised by idiosyncratic ensembles or singular composers and is highly experimental in nature. The review also notes that while music theatre borrows certain techniques from opera, as if it exists in the space between opera and musical. Finally, the review suggests that there may be evidence to support an academic divorce from opera, particularly in academic literature. It is considerably noticeable that 'music theatre' often appears as a *hapax legomenon* in many authors' texts and is often used as a hypernym rather than noun. Further research into music theatre could help to engage modern audiences with experimental music theatre performance, safeguarding the highly versatile art form for future generations. It should also be noted that there are many music theatre scores available from university libraries across the country.

1.6 Rationale

Rebstock (2005: 524) identifies that, as yet there are significantly 'few extensive studies on the topic [of music theatre] have emerged, no empirical inquiries into protagonists working in the field or into audience structures'. Therefore, this research will initially realise and begin to address the gap in research between music theatre documentation and academic theory of music theatre, and the

scientific investigation of the psychology of experimental music performance. Music Theatre is a simplistic yet highly complex art form that involves a fusion of music, drama, and staging. Despite some academic interest and cultural significance, research in this area is still in its infancy, and there is a need for more systematic and empirical studies that can contribute to a better understanding of the various aspects involved in music theatre. The present research is motivated by the desire to bridge the gap between the various domains of music theatre research, which have traditionally been studied in isolation from each other. By bringing together insights from music theatre documentation, academic theory of music theatre, and the scientific investigation of the psychology of experimental music performance, this research aims to develop a more comprehensive and integrated framework for understanding contemporary music theatre. This will also lead into a demonstration of the state of the art. This research will underline the psychological mechanisms involved while observing music theatre performance, which have been relatively underexplored thus far. By examining the cognitive and affective processes that underlie music theatre performance, the research aims to demonstrate new light on the ways in which music affects audiences. This will involve both experimental and observational studies, as well as the development of theoretical models that can account for the complex interplay between musical, dramatic, and psychological factors in music theatre. Ultimately, the goal of this research is to contribute to a better understanding of the psychological mechanisms involved in music theatre performance and to further widen the field of music theatre. By providing new insights into the ways in which music affects audiences, this research can help to enhance the artistic quality and cultural significance of music theatre, as well as contributing to the broader field of performing arts research.

1.7 Research Framework and Methodologies

This study aims to explore deeper into the art form of music theatre and explore its philosophical questions through the lens of psychology. While this is not primarily a psychology thesis, the utilisation of psychological experiments can provide insights into the aesthetics and elements that may indicate the hinderance of the production of new music theatre performances. In order to achieve this, the study will involve conducting experiments on potential music theatre audience members to gauge their emotional responses to various elements of music theatre performances, such as music, lyrics, stage design, and acting. By analysing these responses, we can better understand how these elements contribute to the overall impact of the performance. Additionally, the study will also explore the historical and cultural contexts in which music theatre has evolved, and how they have influenced the development of the art form. This will include tracing the evolution of music theatre from its origins in opera to its present-day form and examining the various social and political factors that have impacted its growth. Overall, this study seeks to provide a comprehensive understanding of the current state of the music theatre art form, how artwork is cognitively realised and how it can continue to evolve and thrive in the future.

The framework for this research is based on previous music-psychological experiments, where participants were asked to observe stimuli and record their emotional responses (Schindler, Hosoya, Menninghaus, Beermann, Wagner, Eid, and Scherer, 2017). This research initially employed the AESTHMOS model (see Appendix E), as originally used in Schindler's original study, for one questionnaire and then it was adapted to better suited to the scope and aims of this research. This took the privacy of the responses away from participants and

allowed the researcher the opportunity to challenge their responses. Early questionnaires employed Russell‘s chart of valence arousal (Russell, 1980: 1164), which was edited slightly to demonstrate actual answers given. A mixed-methods approach was chosen for this research which results in both qualitative and quantitative data collected. Three online questionnaires and one set of laboratory experiments were used to discover the levels of emotional and valance arousal while observing experimental music theatre stimuli. In total 197 participants were surveyed, and their emotional responses were recorded.

1.8 Research Aims

This research aims to explore how contemporary audiences emotionally and aesthetically respond to experimental music theatre performances. It will aim to provide valuable data for how audiences comprehend complex music theatre performance and whether they feel alienated by a lack of translation between composer and audience member. This study also aims to clarify misunderstandings and misconceptions about this type of art. Through this research, valuable insights into audience emotional and aesthetic responses will be gained, helping identify the elements that resonate most with audiences and contribute to the overall experience. Ultimately, the research aims to enhance academic understanding of music theatre and provide valuable information for both artists and audiences alike.

1.9 Research Objectives

The specific objectives of this research are:

1) To highlight trends in emotional responses to specific music theatre performance and whether there is something specific creating an emotional barrier between the composer and audience member.
2) To discover what thoughts audiences have immediately following the observation of music theatre performance and how these thoughts translate emotionally.
3) To understand the state of the art, and the psychological impact the work has on contemporary audiences.

1.10 Research Questions

The research questions for this thesis were based on the research objectives and to clarify what the research was intent on discovering:

1) What levels of valence and arousal are achieved when observing music theatre stimuli?

This question exists to explore how audiences respond to varying music theatre stimuli both aesthetically (the reaction a person has to an object (e.g., product) based on his or her perception of the object) (Berlyne, 1974) and psychologically (including emotional responses, chills (MECs) and fight-or-flight regulation).

2) Is there a perceived emotional barrier between composer's message and audience member? If so, what are the contributing factors?

This area of research aims to discover whether there exists some form of barrier between the composers' emotional intent and the audience and whether this emotion is somehow lost in translation through non-representational, or abstract artwork.

3) What psychological impact can music theatre have on audiences and what consequences could these have on the development of the field?

This area of research aims to discover the state of music theatre in general terms and to demonstrate the health of interest in the art form. Through doing this, it will be possible to demonstrate the lasting impact the artwork can have on audiences and make hypothesis for potential future attendance.

1.11 Main Findings

The study examined audience reactions to experimental music theatre performances. While some viewers experienced emotional arousal and increased positive feelings, deep emotional connections were not formed with all aspects of the performances. Physiological measures did not consistently show emotional engagement. The unconventional nature of the performances lead to cognitive dissonance and challenge preconceived ideas, fostering a deeper understanding. However, not all participants achieved strong cognitive engagement. Music enhanced chills were experienced by some, but not all participants. Valence increased for all participants to varying degrees, but non-verbal signalling (body language) and heart rate data did not provide significant evidence of emotional response. Further research is needed to understand the influence of visual aesthetics and musical elements on valence arousal.

Overall, the study demonstrates the complex relationship between experimental art and human psychology. Such artwork can evoke profound emotional, cognitive, and behavioural reactions, though not consistently positive ones. Statistical differences were found between musician and non-musician responses, but these were not extensive and could primarily be linked to

performative aesthetics rather than directly linked to emotional arousal or valance.

1.12 Research Impact

This thesis has contributed to the overall academic discourse of music theatre and introduced discussions of the psychological impact that music theatre has its potential to leave lasting impact on its audiences. It has also laid the groundwork for further empirical study and explored the creative process involved with the creation of this work. This research has also exposed music theatre as an art form to several potential audience members, who have now become familiar with the term.

Collective fresh academic interest in this area (such as literature and this present study) may contribute to a further resurgence of the music theatre art form for a fresh generation of music and theatre audiences. This research has been presented at twelve UK conferences, and one international, demonstrating a broad reaching dissemination. Parts of this research have also been published, further demonstrating the academic interest in this area.

1.13 Nomenclature and Abbreviations

1.13.1 Glossary

Non-Representational

A performance which relies on the abstract to portray its message. This may include the use of dance, movement, experimental music, and other non-direct messaging.

Psychological Response

Positive or Negative emotional or psychophysical responses to stimuli.

Aesthetic Response

A persons' reaction to an art object (or a product) based on his or her perception of the object in question.

Analysis of Variance (ANOVA)

A statistical tool used to analyse the differences between means.

Hapax Legomenon

A word or phrase which occurs only once in an author's text.

Scratch Orchestra

A Scratch Orchestra is a large number of enthusiasts pooling their resources (not primarily material resources) and assembling for action (music-making, performance, edification (Cardew, 1969: 617).

1.13.2 Abbreviations

M./ $\boldsymbol{Xm}$	Mean
$\boldsymbol{f}$	Frequency
S.D.	Standard Deviation
N	Total Population
n	Sample
MECs	Music Enhanced Chills
AESTHEMOS	Aesthetic Emotions Scale

fMRI	Functional Magnetic Resonance Imaging
PhD	Doctor of Philosophy
Urtext	The original or the earliest version of a text, to which later versions can be compared.

1.14 Thesis Overview

This thesis serves as a documentation of research which took place over a three-year period. This research aims to discover audience emotional responses to experimental music theatre. This thesis has been organised into a six-chapter structure in which to explain the research process.

Chapter one serves as the initial stepping stone into the thesis context and background. Here, readers are introduced to the overarching theme of the study, with an outline of the research questions and the objectives that seek to address them. This foundational chapter sets the stage for the entire dissertation, demonstrating the initial research questions and framework for the thesis.

Chapter two represents the synthesis of existing knowledge and new scholarship in the field. Through a comprehensive literature review, it reviews the state of the art and demonstrates the expansive landscape of music theatre, tracing its historical contexts.

Chapter three continues in a similar vein, exploring music psychology, providing insight into prior research, and establishing a strong foundation upon which the current study builds. By grounding itself in the existing body of knowledge, chapter three creates a crucial contextual framework that informs the subsequent chapters.

Chapter four serves as the explanation of the methodological process used to collect data for this research. This chapter not only elucidates the precise

research methods and tools employed but also delves into the ethical considerations that guided the study's execution. It offers transparency into the research process and prepares for the subsequent chapters, ensuring that the research is conducted with appropriate rigor and integrity.

Chapter five demonstrates the empirical data collected from experiments, presenting datasets collected from both online survey collections and laboratory experiments. These datasets serve as the raw material for preliminary conclusions, offering a glimpse into the initial findings of the research. This chapter represents a crucial bridge between data collection and analysis, providing an initial insight into the research's trajectory. This chapter contains a comprehensive analysis of the accumulated data. It dissects the results, drawing meaningful conclusions from the empirical findings. This chapter represents the culmination of the research effort, offering a detailed and insightful examination of the data that has been collected and provides answers to the research questions posed at the beginning of the thesis.

Chapter six offers a synthesis of key findings and a reflective discussion on their broader implications. This chapter not only summarises the journey undertaken but also contemplates the potential impact of the research on the field of music theatre and psychology. It invites readers to contemplate the significance of the study's outcomes and their potential influence on future research, practice, and creative endeavours in music theatre.

Chapter seven serves as a broader conclusion for this thesis, synthesising the main findings of the research and demonstrates the key impacts of this body of research and the implications for future research.

This thesis has been divided into these constituent chapters, each contributing a layer of insight and knowledge to the overarching exploration of

music and psychology within the realm of music theatre. It clearly demonstrates the multidisciplinary nature of this research and the capacity of music theatre to evoke profound psychological responses.

Chapter Two

The State of the Music Theatre Art

2.1 Introduction

This chapter presents an initial review of current available literature surrounding investigation into emotional responses to music theatre stimuli. The chapter begins by broadly evaluating the historical context of music theatre, then moving to examine aesthetic emotional responses, previous experiments, limbic processes, and anatomy relevant to the study of aesthetic emotion. This will help to form a grounded research framework in which to build new experiments from. The review then synthesises the two areas of study together, drawing conclusions on whether the literature available is sufficient and identify current research gaps and aims to present a review of publications such as published books, academic journals, unpublished academic papers, and websites, in order to form an understanding of the state of the art. For clarity, the literature has been organised thematically.

2.2 Introducing Music Theatre

There has recently been an increased academic interest in music theatre, where previously the research was limited. This is evidenced with the recent publication of *Music Theatre in Britain 1960-1965* (Hall, 2015) and *New Music Theatre in Europe: Transformations between 1955-1975* (Adlington, 2019), *Independent Music Theatre in Europe* (Rebstock and ITI Germany, 2020) and most recently, *Music Theatre and the Holy Roman Empire* (Glatthorn, 2022). Within the academic domain of music theatre arts, most findings are not representative of

the industry in practice but remain academic in their reporting. These academic texts quite often recognise music theatre as a form of music performance, with additional aesthetic elements (Hall, 2015: 4), instead of a synthesis of music *and* theatre (Salzman and Desi, 2008). Many papers referring to music theatre practitioners as composers (Adlington, 2005; Coker, 2006). It is also important to note that much of the documentation from performance created in the 1960s and 1970s is incomplete or not yet available to view publicly[3]. In order to accurately analyse contemporary performance praxis within music theatre, it is essential to refer to the practice of the composers of the 1960s and the 1970s. Therefore, key texts for this period include *Music theatre in a Changing Society: The Influence of the Technical Media* (Bornoff, 1968); *The Music Theatre of Walter Felsenstein* (Fuchs, 1991) and *Music Theatre in Britain 1960-1965* (Hall, 2015).

Unfortunately, large studies of music theatre practice are yet to be completed:

> Independent music theatre has heretofore not managed to emancipate and establish itself to the same degree as independent dramatic theatre and dance theatre, neither in terms of scholarly discourse nor in the public eye. To name some circumstances amongst many which evince this fact, few extensive studies on the topic have emerged, no empirical inquiries into protagonists working in the field or into audience structures can be said to exist, hardly any activity on the part of international associations and organisations takes place, and if it does, it occurs only in particular areas within this vast field (Rebstock, 2005: 524).

Initially, this chapter will review the wide-ranging available literature in respect of music theatre. Furthermore, chapter three will begin to explore deeper into the area of music psychology and previous experiments, which draw data from participants and their emotional responses to music. It should also be noted that the term 'music theatre' frequently appears as a *hapax legomenon* (Katschthaler,

[3] For example, the British Library Collection of Maxwell-Davies' work.

2015; Till, 2004) in many opera-related texts and is often employed more as a hypernym rather than noun (Schopf, 2015; Rebstock, 2007: 527). Millie Taylor argues that music driven theatres fit on a continuum based on its 'seriousness' and the disruptive potential of the music (Figure 2.1).

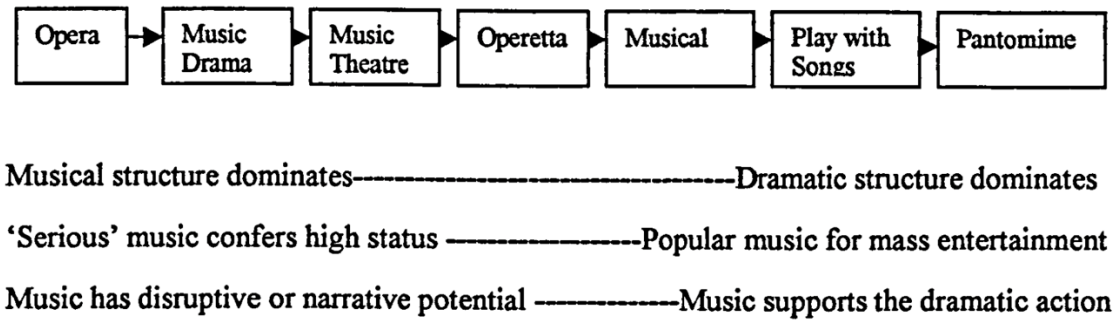


Figure 2.1: Continuum of Music Driven Theatre (Taylor, 2000: 13).

2.3 Defining Music Theatre

Many definitions of music theatre exist and no general consensus as to the most appropriate term to describe the notoriously wide-ranging art form has been reached. It should also be noted that 'music theatre' in its various guises can refer to differing concepts, depending on locale. Music Theatre is possibly one of the most misunderstood art forms and with its development came the term's use as a hypernym (umbrella term) which some academics and artists believe is correct practice, adding to further confusion. Companies such as *Music Theatre Wales* and *Music Theater International* continue to use it so. One researcher classifies Robert Wilson's music driven theatre work into four sub-divisions (Shevtsova, 2007: 36). Those who employ the hypernym school of thought, group all music driven theatres together. These include pantomime, vaudeville burlesque, review, oratorio, ballet, and has also served as the abbreviation for the American art form, musical theatre:

> ‘Music theatre’ serves as an umbrella term for all forms of theatre for which music plays constitutive role. Those genres which fall under this term include opera, operetta and the musical, in addition to a spectrum of diverse genres like new music theatre, experimental music theatre, instrumental theatre, staged concerts, concert installations, musical performance and so forth (Rebstock, 2007: 527).

The *International Dictionary of Theatre Language* does not contain a definition for music theatre (Trilling, *n.d.*). The *Oxford Dictionary of Opera* describes music theatre as:

> A term for works in which musical and dramatic elements are involved, not necessarily representationally. Thus instrumentalists may be costumed and on the stage, or a musician may use a mask, or a group of musicians operate in semi-dramatic conventions, Originally an attempt, deriving from Brecht, to infuse a new kind of dramatic immediacy into opera, it was taken up by a number of younger composers, especially Goehr, Birtwistle, Ligeti, and Maxwell Davies, with works in which a dramatic convention rather than a full staging is used, partly for reasons of economy by fundamentally in the wish to explore new relationships between music and drama (Warrack and West, 1992: 493).

Although the instrumentalists were described as a major part of the drama, perhaps the most curious part of this evaluation is the implication that music theatre was created due to economic reason. Other definitions have followed a similar vein and although offer a very basic insight into the complicated world of music theatre, a more academic approach must be taken. Finance could also be argued as a dividing factor as observed by some that the confusion between music theatre as an art form which needs to be subsidised and musical theatre which can pay its own way (Salzman, 2002: 64). Hall (2015) also attempts to provide context of the music theatre art form and observes that there is no entry for music theatre in the second edition of the *Harvard Dictionary of Music* (1969) and that the *New Harvard Dictionary of Music* (1986: 552) makes no mention of the various American understandings of music theatre (*ibid.*). The entry describes music theatre as ‘distinct from traditional opera […] although some action is

usually specified, music theater is normally non-realistic and often nonrepresentational'.

> Porter's first definition includes 'small-scale operas' such as Alexander Goehr's Naboth's Vineyard, 'song cycles with instrumental accompaniment that are "staged" and enacted on a concert platform', such as Maxwell Davies's [*sic*] Eight Songs for a Mad King, as well as György Ligeti's Adventures et Nouvelles aventures […] and 'numerous but unspecified works by Mauricio Kagel' (Hall, 2015: 4).

As previously mentioned, Taylor (2000: 13) argues that music theatre leans towards the more serious of subject matter and explores the fine line between concert and theatre work. Watson, however, applies a dialectical methodology in which to approach elucidation of music theatre. It has also been argued that the problem in defining music theatre is linked to its paternal language.

> Music-theater itself is a difficult term. Like modern dance, it is what Humpty Dumpty would call a portmanteau word, covering the huge and widening area that lies between traditional opera […] and the traditional Broadway musical (Salzman, 2001: 64).

Watson recognises that music theatre is 'smashed' together (a compound noun) which is common of the German language. Unfortunately, the English vernacular prefers noun plus modifier, whereas the French inclinations of the English language favour 'theatre' as syntactically dominant (Watson, 2008: 12).

Research that has attempted to circumscribe the art form such as Hansen's 2013 dissertation aimed to identify music theatre as a 'sub-genre' as she feels that the term is vague and that a lack of universal definition is an issue. Hansen offers dictionary definitions of 'music theatre' some in English language and some in German. The dissertation argues that music theatre can include a multitude of musico-theatrical performances. These other definitions exclude opera explicitly, using music theatre as the aforementioned 'umbrella' term. The dissertation, however, does not present a reason why an 'umbrella' term could

be appropriate or not. Hansen's hypotheses suggest that 'if characteristics are pointed out, music theatre will be defined by the interaction of its elements' (Hansen, 2013: 9). Therefore, it could be recognised as a specific art form instead of a synthesis of music and theatre. The most controversial of hypothesis is that music theatre could exist without music and theatre and that work which contains neither could belong to the sub-genre of music theatre (*ibid*.). However, Hansen's descriptions of these elements are not presented until page 29 and 30 where, for music, only a quote from Cage is presented, explaining that music is a 'universal carrier of sonorous information, which leaves […] space for reflections and interpretations' (Hansen, 2013: 30). The dissertation gives a condensed history, which although aims to explore the beginnings of music theatre, Hansen begins with Wagner then continues to mention a range of well renowned composers such as Brecht and Weill, Felsenstein, Glass, Stockhausen, Ligeti, Cage and Kagel. Hansen does not however, investigate the work of Birtwistle or Maxwell Davies, who were highly influential in the 1960's progression of British music theatre practice. The dissertation concludes with the argument that music theatre is a heterogeneous, but symbiotic performance genre which is constructed with many art forms (Hansen, 2013: 102). The conclusion feels unsatisfactory and incomplete, not fully answering the research questions or hypotheses. This paper has offered somewhat of an explanation in identifying music theatre as art form. Andrewes (2016) attempts to define music theatre in three parts: the first is through a review of Salzman and Desi's 2008 book *The New Music Theatre.* Andrewes begins by addressing that 'the authors never indicate where their history of alternate opera ends and their survey of the new music theatre begins'. Andrewes identified that Salzman and Desi follow a systematic approach which 'doesn't depart from the most fundamental point[s] of western concepts of music

and theatre'. Unfortunately, the text moves between subjects constantly, and seems almost careful not to offer a definitive distinction between opera and music theatre practice. Andrewes discusses the school of thought that music is not mimetic, an argument which Woodruff (2008: 137) agrees, further arguing that theatre is 'directly related to emotion' and that mimesis 'calls up emotions and other feelings' which resemble what we would actually feel if we experienced the events ourselves. In counterpoint, Beyst (2012) argues that music has become understood as an 'abstract', non-mimetic art but instead proposes that absolute music *is* mimetic and states that the auditory appearance that we hear in a musical source does not emanate from the performer themselves but comes from the playing of instruments in three-dimensional spaces. Thus, the singer or musician are merely the 'bearers' of the sound (*ibid.*). Salzman and Desi (2008: 9) observe that the Aristotelian notion that music is mimetic had to be abandoned before new music theatre could develop. Andrewes attempts to outline an 'inherently coherent definition of music theatre' although to satisfy his 'own specifications', It can be argued that this is not achieved with any clarity and Andrewes does not compose a satisfactory conclusion of these findings. It is undeniable that Salzman and Desi (2008) have carried out considerable research on their precept of 'new music theatre'. However, the study is maybe too broad often conflating opera, chamber music and music theatre. Filoseta (2006: 34) writes that 'to try and circumscribe the music-theatre phenomenon would not only be a hopeless task, it would also clash with the exploratory, open-ended sprit of the form'. However, it is important to identify the form's characteristics and aesthetics in order to fully understand the eccentricities and perceived weaknesses that make this art form unique. As Woodruff (2008: 18) asserts, 'any

work of theatre is the product of other arts as well' […] 'although in other contexts these are arts in their own right. The art of dance supports the art of theater'.

2.4 Background

Michael Hall suggests that music theatre practice can be traced back to *Ill combattimento di Tancredi e Clorinda* (1624) by Claudio Monteverdi which was the first work in an experimental style which featured soprano, tenor, baritone, five strings and piano (Hall, 2015: 4). The work is still performed by contemporary ensembles today, although could be argued as more of a precedent to musical theatre than music theatre. One of the earliest examples of 'new' experimental music theatre could be argued as Erwin Schulhoff's *Sonata Erotica* (1919). Schulhoff composed a five-minute, carefully notated 'orgasm' for female soloist (Rasula, 2006: 7) The piece clearly used both theatrical and musical elements to construct the piece, although there is no use of scenery and little use of properties which provides an example of the more humoristic music theatre, the score a likely precursor to the work by Cathy Bernstein. In the 1920s, Bertolt Brecht's concept of epic theatre, a kind of theatre which aimed to alienate the audience so that they could form a rational conclusion or judgement of the story's outcome. Music played a major part in Brecht's theatre, defining character and establishing the feel or mood, providing him a great sense of the power in the theatre (Marx, 1975: 283). Brecht first collaborated with Kurt Weill in 1927, the duo produced many operas together. In 1930, Becht and Weill began creating 'Lehrstück', music theatre work based on Japanese Noh plays. The most successful of these, *Der Jasager*[4] was performed by students, with a strong disciplinarian theme

[4] *The "Yes" Sayer*

(Marx, 1975: 289) although it could be argued certain Lehrstück pieces leant towards musical theatre, being more presentational than representational.

Walter Felsenstein (b.1901-d.1975) is often credited with coining the term music theatre (Musiktheater) however, it first appeared in print in the *New York Times* in the 1960s and it is not clear whether the term appears earlier (Salzman and Desi, 2008). Felsenstein used the term, in the German form, 'Musiktheater' to define his work with the Komische Oper, which often re-asserted certain values which were often disregarded in traditional opera work. Felsenstein gave many lectures on his subject and states in a lecture to the *Conference of the International Theatre Institute* (1965) that 'since [he] presented [his] ideas […], a number of theaters have adopted the principles of the music theater' (Fuchs, 1991). Felsenstein's traits can still be found in contemporary music theatre work, Birtwistle, like Felsenstein, is highly particular in the way he works, precisely calculated and 'rehearsed to the last detail' (Pounteney *in* Fuchs, 1991: *n.p.*). In the 1960s a call for renewal was developed during political and socioeconomic unrest. In Britain especially, the decade saw a significant shift in the perception of fashion, music, recreational drug consumption, sexuality and race. The artist experimentalists of the sixties who were looking to break away from limiting, traditional musical conventions were shunned by the musical establishment. However, the works by Boulez and Stockhausen were accepted with respect (Manufacturing Intellect, 2019). In America, there was increased financial support from the government, which helped to open new museums and regional theatres. Funding enabled artist ensembles to tour, increasing interaction and allowing younger people to interact with experimental art. Like in Britain, theatre became more popular and experimental theatre, which rejected traditional realism and embraced surreal imagery, choreography, and non-verbal sound, to shape

performance, based on Brecht's Epic theatre. Harry Partch (b.1901-d.1974) like many artists of his time, rejected Western tonality and created his own instruments for his theatre work.

2.5 Music Theatre in Britain

The experimental music scene in Britain began to become more political in the latter part of the 1960s, causing splits in attitudes. These included the creation and break-up of John Cardew's *Scratch Orchestra* (1969-1974), which created a new interest in experiments such as the *Portsmouth Symphonia* (1970-1979). This was a similar scratch orchestra which intended to play the notes of the score as written, even though some members could not read music (Nyman, 1999: 162). This often resulted in a dysfunctional and unique sound, which delighted experimental composers at the time (*ibid.*). It should also be noted that British composers revelled in treading a line between serious and humorous work (Hall, 2015: 6).

The emergence of music theatre in Britain is tracked mainly to the 1960s and onwards. John Hall (2015) attempts to describe the emergence of new music theatre in Britain since the 1960s, although it is difficult to provide a direct attribution. The main catalyst appears to be Anthony Gilbert who 'took the bull by the horns attacking the whole concept of traditional opera in the mid-twentieth century' (Hall, 2015: 16). Some notable pieces of this period include Terry Reiley's *In C* (1964) (Figure 2.2); *Naboth's Vineyard* (Goehr, 1968); *Mug Grunt* (Orton, 1972) and Pastorale (Wishart, 1980) (Figure 2.3).

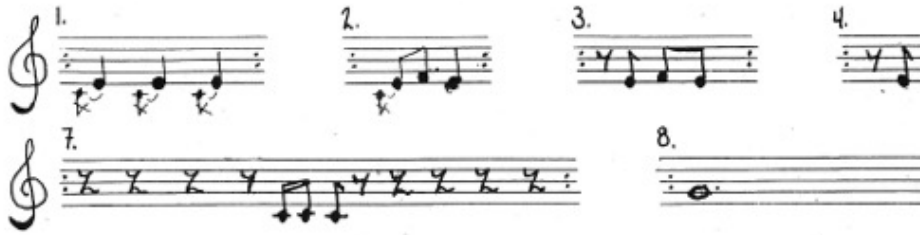


Figure 2.2: *In C* Notation (Reiley, 1964).

Many of these scores include stage directions which demonstrates the particularity of music as part of the dramatic action. Some of these scores are fortunate enough to contain photographs or front cover-style posters such as Figure 2.3.

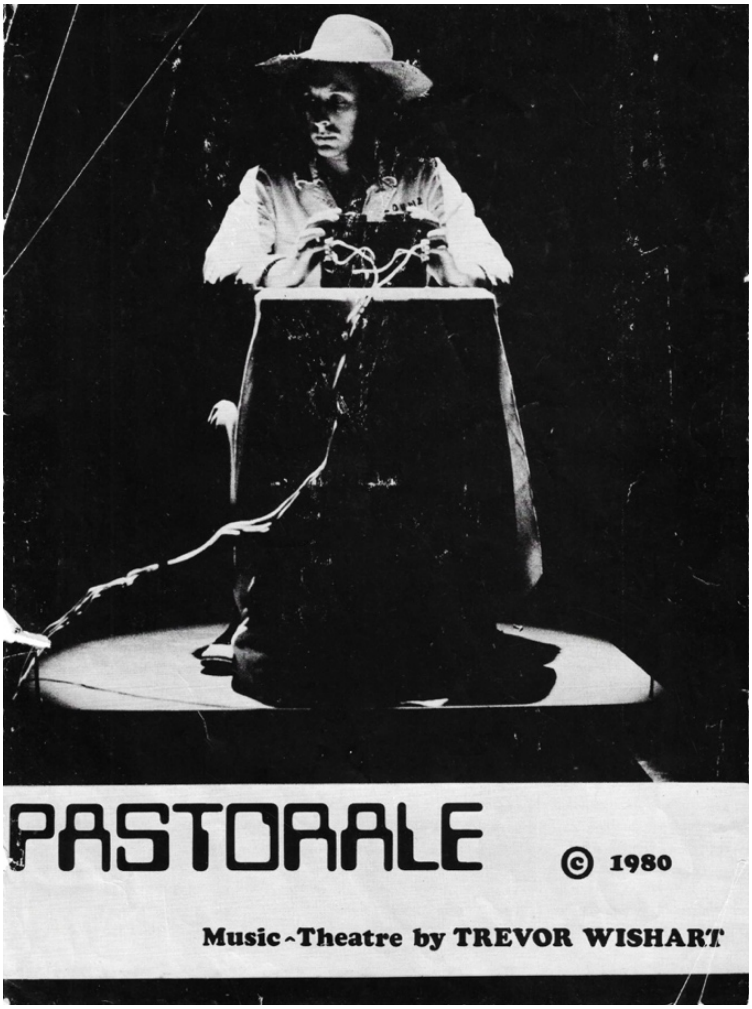


Figure 2.3**:** Promotional Flyer for *Pastorale* (Wishart, 1980).

Scores of this nature were also included intricate staging instructions (Figure 2.4) which may or may not have had an impact on further performances of the work.

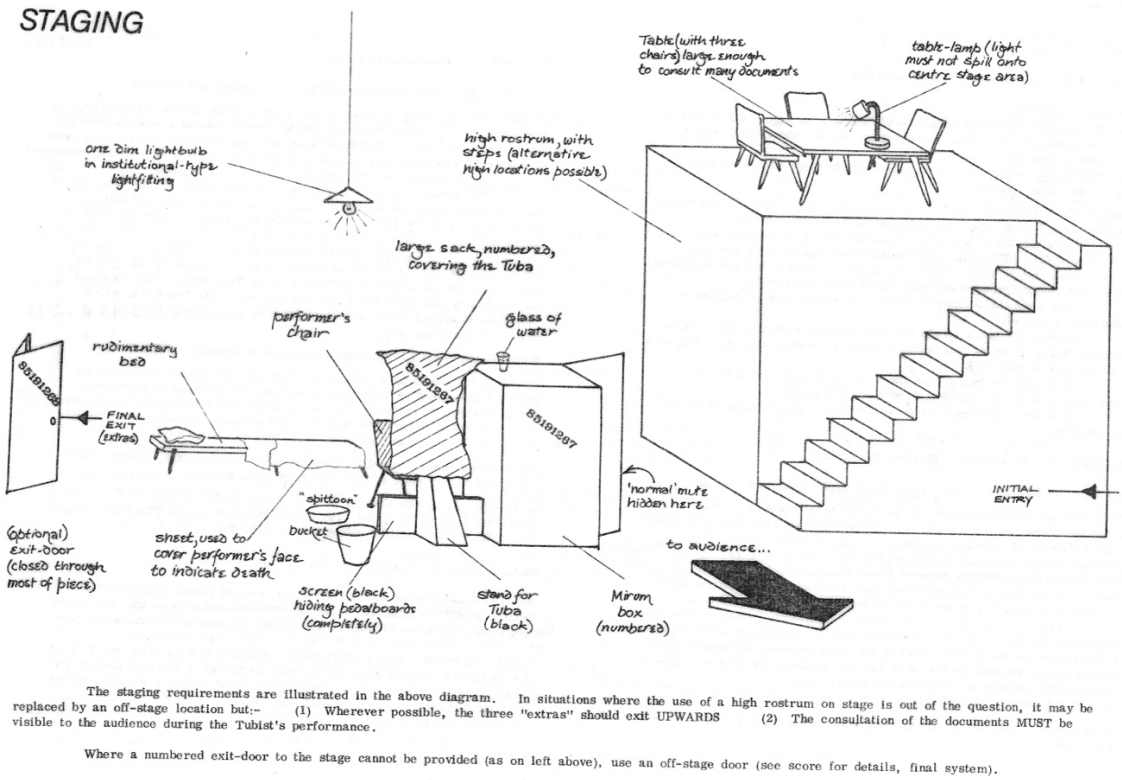


Figure 2.4: Staging Instructions for Tuba Mirum. (Wishart: 1978: *n.p.*)

Concert performances of music theatre at this time were common and allowed work to be performed in front of new audiences and allowed young composers to present their work as a regular occurrence. This would have offered opportunities for instant feedback and would have allowed composers to gage the emotional responses of their audiences. Figure 2.5 demonstrates the kind of pieces performed at such a concert.

U N I V E R S I T Y O F W A R W I C K

Wednesday, 24th October, 1973

'CLAP'

UNIVERSITY OF YORK MUSIC THEATRE GROUP

with

Tom Endrich, Jonty Harrison, Vic Hoyland,
Melody Lovelace, Roger Marsh, Susan Rands,
Bernard Rands, Steve Stanton

PIAF — VIC HOYLAND

"What will her voice be like? How will she express herself? How will she be able to bring all the sorrow of the night out of that narrow little chest? And yet she sings, or, more like a nightingale in April, she brings forth her love song. Have you ever heard a nightingale? He toils, he hesitates, he rasps, he chokes, he begins and falters; then suddenly, he finds the note. He sings and his voice overpowers you"

Jean Cocteau

"My sun shines inside me when night falls"

Piaf

Blue eyes, blue ties, blue quilt, blue skies.

* * * * * * *

MUG GRUNT — RICHARD ORTON

In this piece for the first time I have composed visual elements. The title is fully descriptive of its origins. It is a recollecti of activity and an examination of memory, as exposed in the followi

y e s t e r d a y
y e s t e r d a y
y e s t e r d a y
y e s t e r d a y
y e s t e r d a y
y e s t e r d a y
yes

Figure 2.5: Programme of Music Theatre Performed at University of Warwick featuring Tom Endrich, Jonty Harrison and Roger Marsh *et al.* (Endrich, Harrison, Hoyland, Lovelace, Marsh, Rands, Rands, and Stanton. 1973: *n.p.*).

Many young composers in this period were attracted to the University of York by Bernard Rands who was the founder of the University Music Theatre Group and is attributed to the 'explosion of innovation at York in the early seventies' by Roger Marsh (*n.d.*). Although there is little surviving evidence of the group's activities, apart from a few un-archived programmes kept in personal collections, they provide an insight into the innovations of these composers and the impact they had on the early days of the music theatre art form.

2.6 Music Theatre in Europe

This section describes the ways in which European composers have interpreted the music theatre art object. It is observed that music theatre in Europe is more widely produced and accepted.

In 1988, an article published in *Contact* detailed the new experimental music theatre emerging from Stuttgart. David Kosviner (1988) observes that 'the percussionist smashing a whole tea-service tray (tray and all) into a box' as part of György Ligeti's *Nouvelles Aventures* prompted a 'hysterical reaction' from its audience. This could be representative of audience attitudes to experimental theatre performance at the time. Similar behaviours and responses were observed in prior such performances such as John Cage's *Waterwalk* (1959) where Cage 'played' inanimate objects, which became musical through their contextual performance (Cage, 1966). Kosviner describes Ligeti's *Poème Symponique* (1962) in which five performers set off a hundred metronomes and the last ticking metronome awarded a bouquet of flowers in congratulation. This appeared to anger Kosviner, (1988: 33) who described this as a 'ridiculous and tasteless act', observed that it was not repeated at subsequent performances. Kosviner again describes the reaction of the audience who giggled and

conversed throughout the performance, with audience members ‘convinced that this was nothing but a gag’ (*ibid*.). Ligeti (1962: 3) describes the ‘music’ as a ‘single long phrase which could be characterized as a rhythmic diminuendo’. He then goes on to describe his theory behind the piece, which was ‘based on the interaction between individually determined periodic rhythms and a cumulative polyrhythmic overall structure’ (1962: 4).

Walter Felsenstein (b.1901 - d.1975) proposed the premise that when emotions in the theatrical work became overwhelming, the characters had to sing (used the musical mode), based on a natural progression from speech towards song (Drummund, 1982: 143), a practice often employed in musical theatre. Peter Paul Fuchs’ *The Music Theatre of Walter Felsenstein* (1991) contained several papers, interviews and documentations kept by Felsenstein himself. Although Felsenstein fails to offer a definitive explanation as to what music theatre referred to in the generic sense, he often uses it to describe his work at the Komische Oper. Although Joachim Herz claims that Felsenstein did not invent music theatre, but it was instead nurtured by composers such as Monteverdi, Gluck, Mozart and Verdi; Felsenstein instead simply asserted certain values which were neglected in day-to-day opera performance and placed them into a new system of great logic and consistency (*in* Fuchs, 1991: *np.*). In Pountney’s introduction, the text states that it was ironic to notice that though in the sixties, people attending radical theatre performances in the West went to great lengths to look tired and worn as if a badge of honour, as opposed to the East, where a smarter, less worn look was favoured. Pounteney (1975: *n.p.*) notes that Felsenstein delivered work with absolute precision, that everything was ‘rehearsed to the last detail [and] […] the ingredients were so precisely calculated’. In the Foreword of

the book, Fuchs discusses the essential ideas on which music theatre is grounded, which is that of teamwork:

> It is fundamental law that is the establishment of a correct relationship with the partner. The singing actor in music theater must not sing at his partner (or at the conductor which is worse) but convey a message to him, a message to which the other person naturally must react in psychologically meaningful ways. This message must never appear to the audience to be "studied" or "memorized". It must seemingly be created spontaneously, on the spur of the moment, giving the impression that the singing actor is not playing an assigned role but is creating this role as the action develops (Pounteney, 1975: *n.p.*).

Fuchs continues by describing Felsenstein's philosophy that the 'first and most important stage director is the composer' (*ibid.*), in that everything which happens on the stage should be based on an exact knowledge of the score Thus, if work is eligible to be music theatre, every detail of the musical score should be meaningful and interpreted, in some way, by the performer. For example, the expressiveness of the performer should not be interrupted, it begins from the beginning of the performance and not only when singing. Fuchs notes that the final 'indispensable' element of music theatre is the 'partnership with the audience'. Felsenstein was determined that the audience should not just be there to spectate in silence and be satisfied with the ending but be drawn into the action and become a part of it. In 1957, Felsenstein (*in* Fuchs, 1991: 1) wrote an article in which he described how he wished to give equal weight to "music" and "theater", thus removing the dividing line that exists between the terms "opera" and "theater".

The 2005 *Cambridge Companion to Twentieth-Century Opera* contains a chapter by Robert Adlington (2005: 225), in which he primarily discusses continental music theatre practitioners such as Stockhausen, Boulez, Ligeti and Kagel. Adlington also examines, to a lesser extent, the works of Maxwell Davies and Birtwistle. The chapter offers a brief history of avant-garde music and theatre

and observes that theatre became ‘unwittingly suffused’ with the spirit of music (*ibid.*). Adlington (2005: 231) discusses the more political aspect as music theatre aesthetics, stating that the art-form proved an answer to allow re-engagement with dramatic enaction, which refuted ‘bourgeois’ theatrical conventions and was also the ideal medium for overt political messages. What is most interesting about this chapter is how Adlington discusses evidence that music theatre’s emphasis upon the theatricality of musical performance also developed the contemporary classical music closer to the realm of contemporary popular music performance. Adlington uses Simon Firth’s example in which popular music performance involves performers enacting ‘a star personality’ and a ‘song personality’ (*in* Adlington, 2005: 236) and argues that much of music theatre involves a similar double enactment, by bringing into the foreground the theatricality of its own means by sometimes projecting drama of its subject (*ibid.*).

2.7 Previous Studies in Music Theatre

In 1968, the *United Nations Educational, Scientific and Cultural Organization* (UNESCO) conducted a study on the current state of music theatre (Bornoff, 1968). The study investigated the application of modern techniques in the creation of work for the stage, the transmission of stage work through radio, television and film and the creation of work for these media. The report begins the study by looking as Hall (2015) does, with Monteverdi for the creation of dramatic story (Bornoff, 1968: 17). The report questions the semantics of using the term ‘music theatre’ as opposed to opera, saying that music theatre had become more current in the last two decades and it ‘can’ mean a ‘production of a standard opera, which stresses its theatrical or dramatic aspect’ (*ibid.*). The

report argues that the music theatre of the 1960s did not seek to move audiences by acting on their emotions, but by moving them from 'a distance' through an 'alert but committed vis-à-vis' (Bornoff, 1968: 20). The report discusses Benjamin Britten's addition of elements, or aspects of the new music theatre. Britten used Japanese Noh plays as the basis for his piece, *Curlew River* (1964) and the integration of a chamber orchestra with the design of the set (Bornoff, 1968: 30-31). The report continues to discuss the housing of music theatre which had an influence on its contemporary production (Bornoff, 1968: 35). It was argued that electronic devices should be available to composers who wished to experiment with the distribution of sound which provoked 'sharply divided public reactions' (Bornoff, 1968: 39). The report comments that many music theatre works incorporated the performing musician in the stage action, and further claims that almost all make use of electronic components in their musical sound structure (1968: 37). It is noted that music theatre is still found to be using operatic language, although there is little evidence to support this claim. Adlington (2005: 227) makes a compelling argument that we cannot assume that the presence of the human voice is a prerequisite for music theatre. However, it could be argued that most music theatre pieces do contain some examples of speech or vocal technique. Adlington claims that *Match* (Kagel, 1964) has no vocal component, however this is technically incorrect. In the score's performance notes, Kagel notes the '[t]he words of page 16 must be spoken in the language of the country where the piece will be performed' (Kagel, 1964: 6). In video recording as well, grunts can be heard from the performers, again this could be argued a type of vocal event (Ensemble Offspring, 2011).

Wilkins (2011) offers a different perspective on the compositional shape of music theatre, often referring to sound theatre. Wilkins' thesis aimed to link

definitions of embodiment with the processes of creating and performing new sound theatre works that involve live interaction with media technology. Wilkins defines 'sound theatre' as a shift of play between music, image and text which incorporates elements, such as gesture choreography, audio/visual technology, into a compositional dialogue (Wilkins, 2011: 1). The basis for this body of research refers to 'a historical movement development', which is born out of the 1960s and 70s, where composers experimented with 'non-hierarchical' forms of music theatre (Wilkins, 2011: 7). Wilkins helpfully makes several references to scoring practices in sound/music theatre. These references also question what function script-scores can assume within an 'altered aesthetic context of new music theatre', in whatever form they could be presented (Wilkins, 2011: 8). Wilkins also questions whether there is a basis for musicological analysis (the urtext score or script) as a documentation of the author's intention for the future productions of the work, or as a 'performance text' that considers 'the whole situation of the performance?' (Lehmann *in* Wilkins, 2011: 79). Wilkins observes that the term 'script-score' has only recently been introduced in music theatre practice by practitioners such as Goebbels and Aperghis (*ibid*.). Wilkins also notes that a contemporary music theatre work involves many elements which involve light, sound, choreography, design and staging, all of which play an important part (*ibid*.).

> Philosopher Roman Ingarden refers to the score as the work‘s schema‘ […], the musical work existing both in the creative act of the performer and in its foundation in the score […] As Nattiez points out it poses the question of the score‘s role either as an intermediary, a simulation or a pretext for the work (*in* Wilkins, 2011: 9).

Wilkins (2011: 132) summarises her research findings quite succinctly by articulating that it is essential to place the body at the 'centre of discourse between music, theatre and media if we are to maintain contact with the physical

world and avoid the disorientation of purely virtual experiences'. The ultimate statement, which is highly agreeable, is that the roles between authorship (or composition) and realisation can be unconstructed boundaries in order to enable the emergence of a new work that extends our concepts of subjectivity. Thus, making it somewhat vital to adopt a more fluid approach toward the script-score of a work of sound/music theatre, whereby it is conceived as a living entity that can evolve within the context of future performance (*ibid*.). Thus, the term 'sound theatre' could imply some sort of museum of sound or a sterile collection which may be deemed as too restrained and lacking emotional feeling, mechanical in output.

A series of workshops carried out circa 2005/6 by Tim Coker (2006: 40-41) discovered that music theatre failed to capture the imaginations of sixth form college students in Essex. Coker showed the showed the students the 2004 production of *The Tempest*. The students were impressed by the lighting and staging of the opera and compared the score to that of a film. After a period of observation, the students became bored and described a of 'lack of contrast' and 'not being able to tell any of the characters' voices or score apart. They had liked the music Adès had written for Ariel but thought her voice was 'ridiculous' and 'weird' and left the room after this session squeaking parodies of Ariel's singing. Coker blames this on a lack of education and a lack of contrast within the musical language itself. He goes on to observe that that the work failed to give us 'the sound bites we crave' and that the work 'remained too intense and too dense for too long'. Although Coker specifically surveyed an opera in this instance, the similar results could be found should music theatre be surveyed. Experimental work of this nature tends to be repetitive and far too dense often employing overly complex musical language which alienates audiences from being able to

emotionally connect with the composer's message. Coker's workshops will form a basis for this research.

Rogers identifies that music theatre has expanded its 'sonic palette [which] often included tape, amplified voices and the spatialisation of sound using loudspeakers, inclusions that enhanced the confrontational relationship of new music theatre with its related historical cousins' (*in* Adlington 2019: 80). There appears to be a theme that music theatre is not merely a synthesis of *just* music and theatrical elements, but a range of different elements, drawn from a range of art forms. Perhaps one of the most important music theatre works of the 1960s, Maxwell Davies created *Eight Songs for a Mad King* (1969) inspired by the declining mental health of King George III. Recent research carried out found that there is a crucial link between the madness of the character and the Davies' music (2019: 13). Mesbahian (2019: 114) remarks that it might be impossible and contradictory to simultaneously capture and communicate madness, and that the King might be seen as an artist figure 'whispering the stifled wisdom of madness through the conduit of music to possibly challenge the hegemony of reason in today's world'. Mesbahian observes that avant-garde work has a tendency to welcome the new and unfamiliar which resonates with madness as a form of discord with society. Davies' diverse approaches to madness and his sympathetic attitude towards the topic reflect his social commitment, which is also evident in his environmental activism, anti-war political protests, criticism of Britain's education system, anti-consumerist stance, and support of gay rights (Mesbahian, 2019: 262). Davies' music theatre work *Eight Songs for a Mad King* is a particularly striking example of his exploration of madness. The work tells the story of King George III's descent into madness, and Davies' music captures the King's mental state in a powerful and moving way. The music theatre work's use

of dissonance, atonality, and other unconventional musical techniques creates a sense of unease and anxiety that reflects the King's disturbed state of mind.

As part of a 2008 conference, Jobst and Boerner (2010: 50) presented a study exploring measured satisfaction within opera/music theatre through the perception of artistic quality empathy and identification with the actors on stage. The study collected empirical data and was carried out as a field study at Dessau Opera House, Germany. The study aimed to investigate the audience's overall quality judgements and the difference in responses between 'experts' and 'non experts' (Jobst and Boerner, 2008: 233). This survey identified that 'integrative empirical approaches are still lacking' in visitor's response to performance (Jobst and Boerner, 2013: 391). This methodology consisted of the collection of quantitative data through three scales constructed as formative scales for general evaluation of the theatre, visitor's expectations, and mood (Jobst and Boerner, 2008: 395). Data was collected on a 5-point Likert scale, which ranged from 'strongly disagree' to 'strongly agree' (*ibid*.). Several independent variables were considered, including visitor emotional response to the performance. Boerner and Jobst (2008: 242) explained their definition of music theatre aligns with Walter Felsenstein's original vision, introduced at the Komische Oper:

> Boerner et al. attempted to validate Eversmann's four-factor framework. Because of a limited sample size, they could evaluate only the components separately and they reported that each component was uni-dimensional. They found that the cognitive dimension and the emotional dimension were significant predictors of the overall judgment of a performance whereas the perception and communication dimensions were not (Chan, Au, and Hoyan, 2019: 3).

The survey carried out yielded many limitations, such as only one opera was surveyed, and the self-rated scale could have potentially resulted in some bias as most of the participants were 'used' to opera conventions and did not identify if some participants were 'true lay-men' (2008: 243). As Chan *et al*. Observed in

their paper (2019: 2), Boerner and Jobst chose to 'include specific elements like stage setting specific to theater and orchestra specific to opera that are not applicable to other art forms'. Chan *et al*. critically analyse these aforementioned models as being useful for 'providing a comprehensive and detailed analysis of audience experience but make comparison across art forms difficult' (*ibid*.). Boerner and Jobst do not sum up or elucidate their findings at the end of their papers. Therefore, it is difficult to fully comprehend what their study discovered. It should also be noted that this study was conducted by researchers with cultural and behaviour management backgrounds and not musicological. It could be argued that by only interviewing 'professional theatre practitioners' (Chan *et al*. 2019) the object of the exercise may have been lost, as they are not a representative sample of a typical opera audience. Therefore, results could produce data which excludes a large majority of an audience.

2.8 The Problematic Music Theatre Score

There is a distinct lack of music theatre scores readily available in the UK. Several university libraries hold some collections, but these are not extensive. The largest of these collections is the University Library at York which holds several scores written by students such as Terry Reily, Richard Orton, and Trevor Wishart. Although there is a lack of a centralised collection for these valuable resources, these scores are problematic as far as this study is concerned. Although they remain as a good documentation of the music used within the works, many concentrate on the music processes to be performed and often fail to include original costume or stage direction and, in some cases, scores do not exist at all.

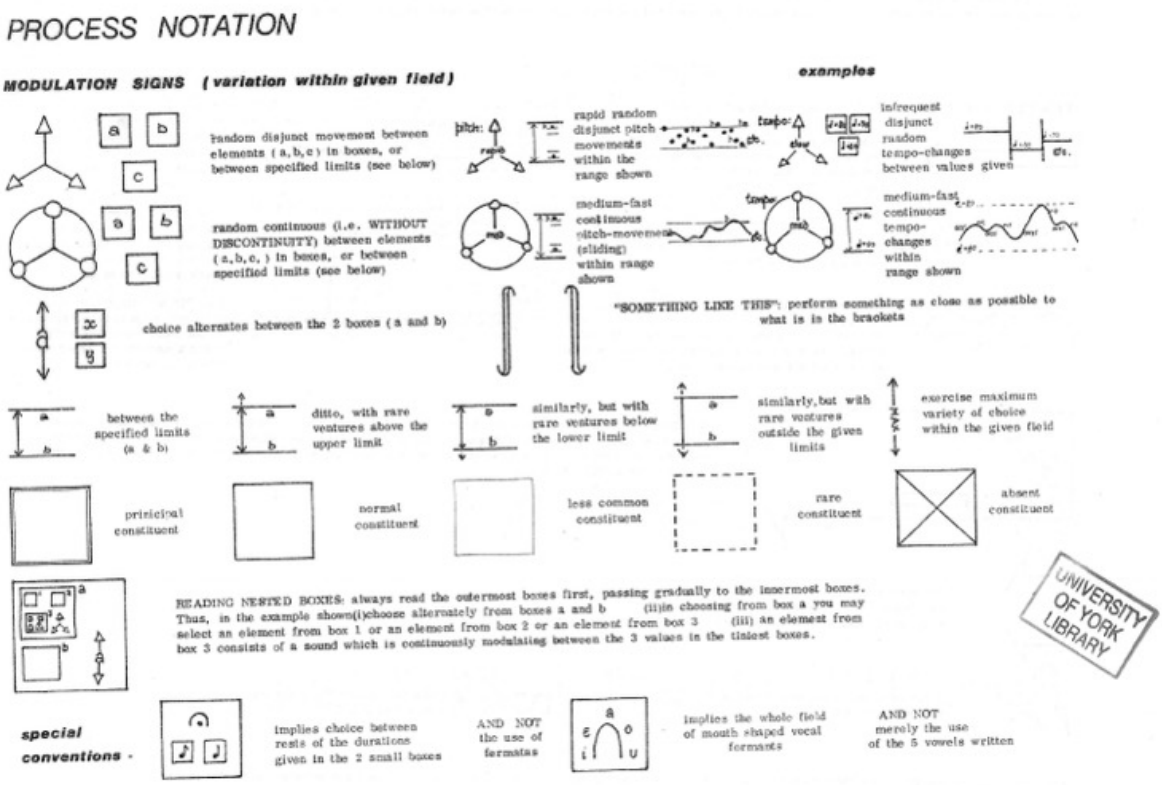


Figure 2.6: An Example of the Complex Notation Often Found in Music Theatre Scores (Wishart, 1978: *n.p.*)

The Western Classical tradition of score writing was altered significantly by experimental composers who basically threw the rule book out the window in order to communicate their new music. This meant often dispensing with the traditional stave and notation in favour of symbols and words (Figure 2.5). This often made the music irreplicable without the composer present in order to translate the score for new ensembles. A vast majority of music theatre creators of the past hundred years have remained firmly attached to conventional notions of text and score, as Schmitt (1982: 21) attests: 'the script is but a report on a performance, not itself the art object to be presented'. Composers such as Weill, Maxwell Davies, Kagel, Ligeti, Weir, Kagel, Bithell and Hübner have all produced

music theatre using some-kind of score, although it is not clear whether the theatrical elements were created around the music. Halfyard (1996: 135) observes that there is an obvious link between opera and music theatre as both are 'staged theatrical works' importantly, written by composers. However, music theatre is freed from the rigid requirements of the operatic genre. Although Halfyard's observation that music theatre is written by composers, in an interview with David Kosviner, Mauricio Kagel (1989: 34) emphasised that he composed *music*-theatre and not music-*theatre*, although Kosviner does not elaborate or elucidate this further. If music theatre scores cannot accurately reflect composers intentions, directions, and objections, and with no video documentation many music theatre works from the 1960s and 70s, have been lost forever.

2.9 Aesthetics of Music Theatre

Stephen Downes' edited book (2014) attempts to offer an elucidated overview of the aesthetics of music. Downes' (2014: 1) introduction offers a brief exploration of the subject as a whole. The chapter observes that there is no-self standing entry on 'aesthetics' in Grove Music Online. However, he identifies that the subject is 'pervasively relevant in musicology'. The chapter notes that:

> There is little literature in the history of modern philosophy that is more exasperating that that devoted to the aesthetics of music, when the standard of philosophical competence is high enough to be taken seriously, the standard of musical competence is usually (as with Kant and Hegel) too low for the exercise to be valuable. Hardly any writer troubles himself with examples or analysis, and almost all rest their case in some vast and vague abstraction… (Scruton, 1983: 34).

Rogers (*in* Adlington, 2019: 81) discusses 'a productive relationship between the aesthetics of new music theatre and other domains of collaborative experimentation in Europe and North America'. Rogers highlights the use of intermedial elements which 'became a prominent method of intervention into the

traditional relationships between music, text, and staging (*ibid*.). She observes that works such as *Sunken Garden* (2013) bathed the audience in sound as well as image (Scruton, 1983: 82). Rogers also makes an interesting observation that 'staged music theatre, when created from a fusion of disciplines, generate[s] a form of artistic *research*' (2019: 86). She also goes on to suggest that the exploratory nature of the art form can 'activate an audience', which could allow them to participate in the creation of the work's message (*ibid*.). This suggestion could be explored further, with the potential for research into work which can use its audience as a collaborating partner. Work such as *Mug Grunt* (1972) did not follow traditional notation and was expected to be performed from memory (Orton, 1972: 1), this would have allowed for a more genuine connection between performer and audience.

Figure 2.7: A Performance of *Mug Grunt* featuring (Left to Right) Roger Marsh, Tom Endrich and Bernard Rands (Unknown, *n.d.*).

A substantial amount of current literature suggests that music theatre leans towards ritualistic style tendencies (evidenced earlier in the chapter). Adlington observes that 'music theatre may expose the theatre of conventional classical performance rituals […] to which we more usually turn a blind eye' (2005: 236). Mesbahian's dissertation revolves around the themes of madness and ritual. She argues, agreeing that the avant-garde, and Davies, in particular, had a tendency to focus and engage with darker themes such as madness, the new and the unfamiliar (Mesbahian, 2005: 3) and in doing so, it can reveal a sense of social responsibility in his attitudes towards these themes and his methods of approaching it (Mesbahian, 2005: 4). Harrison Birtwistle stated that working with small music theatre:

> [is] completely different to work on this scale, I'm not saying it's superior but it's very very different. You feel very much part of it you're not so much in touch with a big piece, there's a mechanism you draw a double line [at the end of the score] then a sort of big factory takes over and you sort of lose it [with this piece] I knew I had things to say about it and that was important. On the big stage there's no such thing as close up. You can't deal with it like cinema for instance but with this piece it's the difference between a string quartet playing a piece of music to a full orchestra. When I have pieces done with an orchestra, very rarely do [the musicians] come up to me [to talk during their breaks] they get up for their coffee [and] there's a sort of barrier but with [a small ensemble] there's a question of detail in every aspect of the piece it's completely different it's a different way of thinking that doesn't mean that it can't be ambitious [but] it's a different ambition (British Council, 2015).

Birtwistle, unlike composers such as Boulez, found past theatre performance important in informing future practice with an interest in forms and techniques of tragedy, Baroque opera, and Wagnerian drama (Cross *in* Beard, 2012: 9). Birtwistle had a sectional approach to composition, devising new structures as he moved through a work, thus amplifying themes specific to each opera (Beard, 2012: 12-13). Birtwistle created stage works for children in the early 1960s, which foreshadowed later interests such as use of masks and ritual. These earlier

pieces consisted of primarily percussive instruments with woodwind such as flute or clarinet offering juxtaposition (Beard, 2012: 18). The practice of using a small ensemble is something which Birtwistle tends to favour in future music theatre work, as opposed to his larger operatic compositions.

> Birtwistle generates an exciting, intuitive soundworld from this, yet the main portion of the piece where I found myself surprised at his authorship was, i [*sic*] think, a byproduct of this same aural flux. Due to the ways in which Birtwistle uses the orchestra – or to be more specific, the ways in which he doesn't, eschewing contemporary music's obsession with extended techniques – there are times when this flux took on a kind of static quality. Most of all around the work's centre, when the orchestra gets seemingly caught in a generalised behaviour that seemed bland in contrast to what had come before. It's a minor quibble, possibly a churlish one, and i [*sic*] wonder in hindsight whether allowing the music seemingly to 'do its own thing' in this way, without constantly seeking attention, is actually rather refreshing (Cummings, 2017).

The practice of including musicians as part of the stage drama can also be traced to *Ill Combattimento di Tancredi e Clorinda* (1632) by Monteverdi, but Zachary Dunbar (2012: 197) proposes that the hybrid performer 'trained and worked in fifth century worked in fifth-century BCE Greek tragedy, in Zeami's fifteenth-century Noh theatre, in Sanskrit and Jingxi theatre, and in a John Doyle staging of a Stephen Sondheim musical'. It could be argued that the practice became more common in Brecht and Weill's collaborations, such as *Die Dreigroschenoper*[5] (1928). Based on Brecht's 'epic theatre' theory, the actors no longer embody and become the characters they portrayed but instead remind the audience they were performing a role (Hübner, 2013: 13). It has become a common theme and maybe an aesthetic that musicians become theatrical performers within music theatre. Adlington (2005); Bornoff (1968) and Warrack and West (1992) demonstrate that musicians take a more principal role in music theatre. Dunbar (2012: 197) writes that 'the figure of the actor-musician has

[5] *The Threepenny Opera.*

always occupied the space between music-making and theatre-making, while Rebstock (2017: 563) explains that there is a shifting of classical role and competency distribution in the context of opera and independent music theatre. Rebstock also discusses how traditional processes and rehearsal techniques are being changed to incorporate actors who sing, dancers who speak and sing, and musicians who have expanded roles beyond just musical performance. While opera typically separates the singer-performers on stage from the instrumental ensembles in the orchestra pit, independent music theatre aims to break down this separation and integrate performers and musicians more closely. This is something that Heile (2016: 1) also notes: 'in experimental music theatre […], by contrast, the physical and gestural elements inherent in the music-making are the action, and there is no (actual or virtual) separation between stage and instrumental ensemble'.

Julia H. Schröder (*in* Adlington, 2019: 35) identifies Mauricio Kagel's compositions which organised stage actions by instrumentalists which follow a reduced aesthetic in limited means, such as only with stage-effect machinery. Falk Hübner (2013) explores the theory of musician as a theatrical performer and how musician's roles have developed. Hübner draws similar examples between music theatre and dance practice, where both expansion of roles and contraction of roles have occurred. Hübner also looks to artists such as John Doyle for examples of the expansive theory in context, where instrumentalists in *Sweeney Todd* (London, 2004) were asked to perform on stage as a part of the action. Music Theatre pieces that have emulated the concept of the 'expanded musician' include *Thespian Play* (2009) and *Alltag* (2010) as well as *Eight Songs for a Mad King* (1969) and *Bow Down* (1977). On the subject of *Bow Down,* Sir Harrison shared some thoughts about the work in an email before he passed:

> Bow Down is an improvised piece based on the Scottish ballad of The Two Sisters. The music and text came from this dramatic idea and emerged during rehearsals. The score was produced after this process had been completed. There were two musicians involved and the rest of the cast were actors who did not have musical skills but used their natural talents to contribute to the final result. In the end there was no difference between the musically literate and illiterate members of the cast, so you are correct in thinking that the work revolved around the performers' abilities. If you wanted to contact the two musicians involved for further information, they were Jonty Harrison and Melinda Maxwell but I do not have their details unfortunately (Birtwistle *in* Rosner, 2020).

This led to the following response from Melinda Maxwell, who performed one of the oboe parts in the work:

> Bow Down happened a long time ago and so my memory of it is very faded. But, what I remember is that there were two professional oboists, myself as one of them. I think we played baroque as well as modern oboes. We sang occasionally. At least I remember the actors sang and perhaps we joined in. I think we played the odd percussion instrument too. There may have been some electronic element but I really can't remember.
> It was a collaborative venture. Any orchestration came naturally from the musical discourse and what was laid out in the score and also how we reacted to the drama in rehearsals. We sat altogether in a large semi-circle and the action took place in the inner space. It was a very immediate experience with both actors and musicians working together to make the narrative and musical flow of the drama. I suppose acts of orchestration came when we improvised something with (and sometimes without) the material that he gave us. Because we were oboists well versed in contemporary techniques some of these would probably have permeated the texture. And of course Sir H would also indicate how and what material to play (Maxwell, 2020).

This indicates that *Bow Down* was very much about including the instrumentalist as part of the drama, not just to accompany it. Maxwell also demonstrates the collaborative venture where the 'orchestration' (to use a heavy-handed term, in this context) emerged naturally from the musical discourse and reactions to the drama. The musicians and actors worked together to create the narrative and musical flow, with some improvisation and guidance from Birtwistle himself, who here serves more as a facilitator rather than a composer with specific requirements. Although they were not directly asked, there is a notable absence in mention of emotion in both responses from the composer/performer. Could it

then be argued that emotion is not necessarily a grounding factor to which music theatre is based? Therefore, can we then discard emotion as a direct aesthetic of music theatre?

With this in mind, Hans Werner Henze approached music theatre as a tool which allows the ability to act as a liberating 'vessel' from traditional music culture, where much emotion such as anger or frustration may linger:

> I would like the music to lay bare something of the history of the instrumentalists, which belongs to the history of the working people. I would like the instrumentalists to interpret themselves consciously, and to extend their scope, so that they see themselves as inhabiting a realm of increased possibilities – possibilities of self-realization and self-liberation […] (Henze, 1982: 216).

Matthias Rebstock discusses the aesthetics of Elena Mendoza's music theatre and how she chooses to follow 'fundamental aesthetic beliefs' (2019: 180). The paper states that 'music theatre only exists in the moment of its performance, in which all the theatrical elements come together in the presence of an audience' which suggests that a work of music theatre cannot exist outside of a performative context. The paper also highlights a major aesthetic of music theatre, which is the artistic decision to remove the 'traditional' separation of musician and performer (2019: 184). Mendoza also chose an 'open form' of notation, which allowed composed material to be combined at will by the musicians in accordance with certain rules (*ibid.*).

Modern musical theatre creators are also approaching the artistic work in a similar way. New musicals such as *The Band's Visit* (Broadway 2017) *Hadestown* (Broadway 2019) are including actor-musicians in order to tell their stories. As George C. Wolfe describes, 'musicals have a tendency to announce their emotional conditions as opposed to embody them' (Berinstein, 2008: 27'38")

whereas it is becoming clearer that music theatre tends to show emotion in a more abstract way.

2.10 Emergence of New Music Theatre

New texts published in 2020, edited by Robert Adlington have created a new discourse on the topic of music theatre. The latest publication is an examination of four case studies, three across the continent and one for London's hidden music theatre. *Freies Musiktheater in Europa/*Independent Music Theatre in Europe (2020) edited by Matthias Rebstock, explains the state of the art in the introduction. The book paints a somewhat saddening state of music theatre across Europe. However, there are still many places where experimental work can be found, the most notable of these being festivals and individual theatre companies. From the information presented in the four essays, it appears there is such theatre work being produced, but requires some excavating in order to find it. Hübner points out there are few undergraduate degree programmes available in the Netherlands, although there are postgraduate programmes in music theatre. These focus on contemporary music theatre, which is taught from a musical perspective (Hübner, 2020: 154). Rebstock writes that music theatre's sense of identity relies precisely on its experimental interrogation on interplay between all its component media, elements, and disciplines and secondly of all the working processes it involves. Music Theatre acts as a motor of interdisciplinary and transdisciplinary experimentation (Rebstock and ITI Germany, 2020: 17). Rebstock argues that the more transdisciplinary music theatre is the less visible it becomes as an art form on its own. Music Theatre in comparison to the 'independent' theatre and drama scenes in Germany has managed to identify itself only sporadically in public perception as a field of its

own and has therefore not been able to acquire comparable attention in cultural policy (Rebstock and ITI Germany, 2020: 19). Rebstock argues further that music theatre is not unified in terminology and artists respond to their work's categorisation, forcing them to become part of the 'scene' (*ibid*.). Thom Andrewes (2020: 111 - 148) also writes about the emerging music theatre scene in London. Andrewes refers to Elaine Mitchener and her new music theatre work *SWEET TOOTH,* which he observes Mitchener's 'performance style based on physical effects or the voice on the body and breath' (Andrewes, 2020: 142).

The latest PhD to specifically discuss music theatre is Neil Luck's 2020 thesis. Luck's thesis although a creative portfolio of new music theatre, provides some crucial primary data regarding responses from his work, providing two aspects of audience feedback from his music theatre work *Regretfully Yours, Ongoing* (2018) received the complimentary feedback such as: 'It was funny, it was painful, it was gloriously anti-spectacular, refusing all platitudes, and it was utterly cathartic' (Luck, 2020: 120) and the less complimentary: 'The piece overall seemed eager to be a narcissistic sugar-coating, aiming purely to saturate the senses' (*ibid.*). Luck describes that it was 'not his intention to upset people; nonetheless, the divided responses are a strong indication […] that this area of practice offers much fertile ground' (*ibid*.). With already existing data such from new music theatre performance, there is a strong indication that divided results can be predicted for any new studies into the art form.

2.11 Music Theatre as Psychological Exploration

Music Theatre has occasionally been used as a medium for exploring the depths of the human psyche. Two of the most prominent examples of this is Peter

Maxwell Davies' *Eight Songs for a Mad King* (1969) and *Miss Donnithorne's Maggot* (1974).

> Perhaps no composer of the twentieth century has shown as much fascination with the topic of madness as British composer Peter Maxwell Davies (Mesbahian, 2019: 10).

Eight Songs… delves into the mind of a delusional King George and his attempts to teach his caged birds to sing. The work showcases his descent into madness through music and performance. …*Maggot* also explores a similar decent into madness caused by rumour and speculation. This music theatre piece again, employed operatic aesthetics in order to achieve a wild, and somewhat chaotic event. Maxwell Davies extrapolates on this in his composer's note:

> This is essentially a work of music-theatre. There should ideally be a set consisting of a huge wedding cake in an advanced state of decay, the instrumentalists being integrated into the set. The mezzo-soprano soloist, Miss Donnithorne, must be dressed in a period wedding gown with veil, also in a state of decay. Additionally she tears little cakes (made of cardboard or paper, to make a lot of noise) or bits from the cake forming the set, in No. 2. In No. 8 she takes confetti from pockets in her dress and throws it about (Maxwell Davies, 1977: *n.p.*).

Bornoff's (1968: 20) observation that music theatre works do not aim to move audiences through psychological manipulation, but rather through a distant yet engaged relationship with the performance is a particularly fascinating perspective. It could be argued that Maxwell Davies manipulated his audience to feel as if they were in Miss Donnithorne's shoes and that they themselves were jilted. This piece strongly determines the emotions we are supposed to be feeling and allows the composer's emotion to wash over us. There appears to be scope to investigate whether there is any change of psychological impact on today's audiences with contemporary music theatre.

Other works have also explored the psychological depths of human experience, but there is a lack of current literature that explicitly demonstrates

how psychology is explored within these works. Moreover, little is known about how audiences respond to these challenging and thought-provoking performances. As music theatre continues to evolve, it has potential to serve as a vehicle for exploring the complexities of the human psyche.

2.11 Towards a Future Gesamtkunstwerk?

There is substantial evidence that the borders between new art forms are extremely blurred (Taylor, 2000; Rebstock and Roesner, 2012). Leo Dick suggests that Swiss thinking remains rooted in categorial conventions (2020: 247). Alison Oddey (2007: 217) argues that the current shift in theatre-making practices demands a new understanding of the way spectating performance has changed, the nature of spectating multi-media projects, the choreography of the spectators as artistic and directional control. Oddey (2007: 216) asserts that new cross-art forms make the spectator feel different, which makes them see and perceive things in novel ways.

> Rather these are artists experimenting with perceptions of the world as poetic texts, unique performance texts, inventing new definitions of wilderness and paradisical places, celebrating the multi-cultural and multi-forms of the interdisciplinary landscape that lead towards new art forms of theatrical communication, spirituality and a willingness to be silent (*ibid*.).

It could be argued that due to the ever-increasing experimentation in music and theatre arts, it may no longer be fitting to encapsulate art forms by rigid boundaries or titles.

2.12 Conclusions

This chapter has evaluated a substantial amount of literature examining and documenting the history and definitions for music theatre. Beginning with

Monteverdi's synthesis of music and drama to Mitchener's 2019 Jamaican British music theatre, this chapter has identified important academics and theatre practitioners, which will further allow for the discussion of music theatre development and tendencies.

This review has discovered that there is a modest, pre-existing knowledge base in the field of music theatre, although relatively little history still survives from 1970 onwards. It has therefore been challenging to fully determine the exact impact of music theatre creation on the wider artistic landscape. Therefore, this review has demonstrated a clear gap in research knowledge. It should be noted that there is a lack of a centralised collection or catalogue specifically dedicated to British music theatre. What exists instead is an extremely fragmented collection of scores and archive spread across university libraries across the country, which in themselves, are not always catalogued effectively. Another issue that this review has considered is the time sensitivity related to this particular research area. Many of the composers who created these music theatre works have since passed away, or have retired from music theatre completely, thus leaving many gaps in our knowledge of 60s era music theatre activity. Although this is not the main focus of this present investigation, it is important to highlight the time-sensitivity of this issue and that steps should be taken to prevent music theatre being lost to history completely.

This review has demonstrated the several differing, yet compelling arguments for and against the use of the music theatre hypernym, although this argument is that this study is concerned with music theatre as art form. This review has affirmed that this is an appropriate area to direct research efforts, as there is evidence of fresh interest being carried out and publications and conferences are proving there is still an interest in this subject area. This review

has identified sister art forms and their approach to instrumentation and orchestration. It has also observed that there could be an argument for an all-embodied art form defying borders and creating a borderless performance art form.

Eric Salzman (2002: 63) describes that music theatre is to opera as modern dance is to ballet, which could be agreed with as music theatre only tends to borrow operatic elements, not emulate, or even champion them. This might also indicate that there may be evidence to support some form of academic divorce from opera, particularly in academic literature.

This thesis will apply the following definition of music theatre going forward: Music Theatre refers to the art form championed by 1960s experimentalist avant-garde music composers, which synthesises multi-disciplinary practice such as, but not exclusively on, the use of music (organised sound) as a driving force and elements found in theatre such as drama, speech, movement, dance, and performance presentation elements such as lighting, and sound technology. It is also not uncommon for comedy or fine art to be incorporated. Music Theatre can be both immersive *or* alienating. Music Theatre appears to lend itself to offer either representational or non-representation approach to complex emotional material. Music Theatre is more likely to be smaller in production and is often devised by idiosyncratic ensembles or singular composers. Music Theatre is highly experimental in nature and although borrows certain technique from opera, it exists in the space between opera and musical. There are many ways of writing 'music theatre' however, following in Felsenstein's school of thought, this thesis will consider music and theatre as equal pillars and will style it as above. Like Watson, it makes sense to lean towards the egalitarian, unhyphenated, 'leaving agreement in capitalisation for

the syntactical context' (Watson, 2005: 12). Luck (2020) demonstrates that music theatre can divide audiences and there are some who understand the work and some who regard it as self-gratifying for the composer. This study could help to further knowledge of audience relationships with contemporary music theatrical aesthetics. This will allow for the formation of new praxis and practices and find new ways of engaging modern audiences with experimental music theatre performance, safeguarding the highly versatile art form.

Chapter Three

Psychology of Music

3.1 Introduction

The Psychology of Music is a captivating field that explores the intricate relationship between the human mind and the world of sound. This chapter provides an overview of its historical evolution, theoretical foundations, and contemporary relevance. It delves into cognitive processes, emotional responses, and the cultural dimensions of music. The study of the Psychology of Music has implications for diverse fields and invites readers on an intellectual journey into this captivating world.

This chapter will investigate the human psyche and physiological elements which make up our emotional systems and how music serves to reward and punish. This chapter will also explore the cognitive processes that govern our perception of melody, rhythm, and harmony, unveiling how our brains interpret and respond to musical stimuli. Additionally, it will uncover the intricate interplay between music and emotions, dissecting the mechanisms through which music can elicit, amplify, or mollify emotional states.

Furthermore, this chapter will illuminate the symbiotic relationship between music and culture, highlighting how musical expressions encapsulate and shape the identities of societies and individuals alike. By exploring the socio-cultural dimensions of music, we will gain valuable insights into its role as a mirror reflecting the values, beliefs, and aspirations of British culture.

The study of the Psychology of Music is not merely an academic pursuit; it has far-reaching implications for diverse fields, from neuroscience to therapy, from education to entertainment. It offers a rich tapestry of knowledge that can

be applied to enhance our understanding of the human experience and improve various aspects of our lives. This chapter serves as an introduction into the complex field of music psychology and its relevance to this present body of research.

3.2 Music (Theatre) Psychology

Although there is little literature which explores the general psychology of music theatre, music psychology has enjoyed a wide exploration which began to grow as a field in the 1960s, coincidently around the same time as the emergence of the new music theatre. *The Oxford Companion to Music* (2002: 1010) describes psychology of music as:

> The study of psychological basis of musical behaviour and experience. Such study has a long history, but its expansion is relatively recent and is illustrated by a growth in specialist journals (e.g. Psychology of Music (1973), Music Perception (1983), Musicae scientiae (1997)) and diversification into a number of sub-domains […].

Cox, Crickmore, Plummeridge, and Sergant (2012: 524) observe that little study of music psychology had been completed in British universities before 1960 and what little research produced was primarily the result of masters and doctoral degrees. It is difficult to establish exactly what was the catalyst for the boom in music psychology in the 1960s. However, Sloboda notes that the 1960s proved to be a 'dominant force shaping psychological investigations' (Cox *et al.,* 2001: 8). The main research outputs, during this time, were contributions from the United States of America, with predominant interests concerned with 'quantifying aspects of human perception establishing the limits of peripheral perception, difference limens and scalings for the five senses' (Cox *et al*., 2012: 524). It was not until 1967 that a two-week seminar in Massachusetts led to the creation of a national working group which was tasked with drawing clear goals and objectives

for the national curriculum. In the UK, the 1960s were a period of rapid change in educational provision with policy influenced by the Newsom Report (1963). In schools, the arts were given more prominence as a result of endorsement by Newsom (Cox *et al*., 2012: 525).

This year, Bellier, Llorens, Marciano, Gunduz, Schalk, Brunner and Knight (2023), published a new paper which used intracranial electroencephalography (iEEG) datasets from twenty-nine participants who had listened to *Another Brick in the Wall, Part 1* by the British band *Pink Floyd* song and applied a stimulus reconstruction method which had previously been used by speech researchers. This study was able to reconstruct music decoded the recognisable song by using neural recordings from brain pattern analysis and quantified the impact of different factors on decoding accuracy. This demonstrated that nonlinear decoding models provided higher accuracy in reconstructing the auditory spectrogram compared to linear models. The decoding accuracy was influenced by the number of electrodes used, with diminishing returns observed beyond a certain number. The researchers also found that the duration of the dataset had an impact on decoding accuracy, with a logarithmic relationship between dataset, duration, and decoding accuracy. The reconstructed song spectrogram was objectively identified and classified using a rank analysis approach. Furthermore, the study examined the encoding models to understand the neural dynamics of music perception. The results confirmed a right-hemisphere preference and a primary role of the superior temporal gyrus (STG) in music perception. Different components of the STG were identified, including onset, sustained, late onset, and rhythmic components, which were tuned to different musical elements of the song. The study also found that ablating specific sets of electrodes in the decoding models had varying impacts on decoding accuracy, indicating the

unique or redundant nature of the represented information. Overall, the study provides insights into the neural dynamics underlying music perception. The findings suggest that music can be reconstructed from human auditory cortex activity using nonlinear decoding models, and that the STG plays a crucial role in representing musical information. These results contribute to our understanding of music perception and have implications for future research on auditory processing disorders and brain-computer interface applications. This further demonstrates the current academic work in music psychology and neuroscience and the growing need to understand how significant music is to the brain and the human condition at large.

3.3 Liking of Sonic Experience

Schafer *et al.* (2013) demonstrated that people listen to music 'to regulate arousal and mood, to achieve self-awareness, and as an expression of social relatedness' (2013: 1). First proposed in 1874, Figure 3.1 traces the way people initially tend to like a song more as they hear it (Margulis, 2019: 104). Past a certain point, however, they tend to like it less with increasing exposure, sometimes ultimately liking it less than on the first hearing (*ibid.*). It could also be hypothesised that what might be a strong emotional sonic event for one person might not be for another.

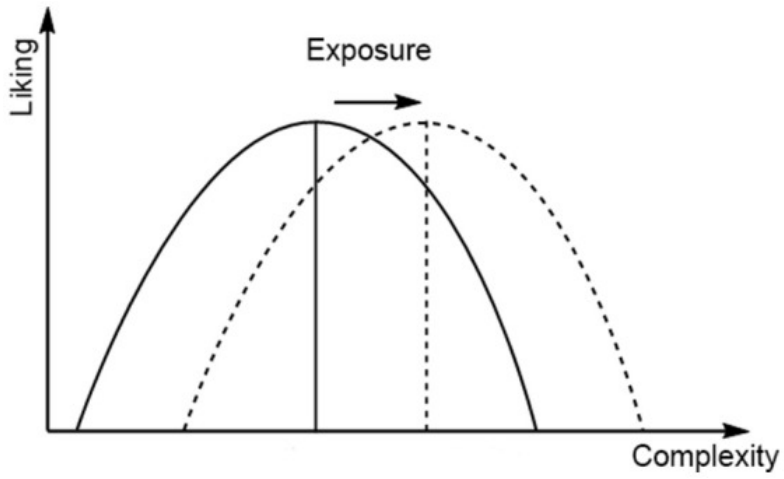


Figure 3.1**:** The Wundt curve, and its hypothesised movement to the right with increased exposure (*i.e.,* repeated listening) (Madison and Schiölde, 2007: 1).

A study found that familiarity is the single most important variable for explaining differences in liking among music, regardless of the complexity of the music (Madison and Schiölde, 2017: 1). The paper suggested that familiarity with musical style was the single most important variable for explaining differences in liking amongst music, regardless of the complexity of the music (*ibid*.).

3.4 Emotion

Emotion is an essential factor of human life and people experience emotion daily during interpersonal communication, work, and leisure (Mori and Iwanaga, 2017: 1). People also experience emotion in response to art, film, and music, with some emotion becoming intense which can be described as being 'moved' (*ibid.*). Emotions are reactions that human beings experience in response to events or situations. The type of emotion a person experiences is determined by the circumstance that triggers the emotion. Zahra (2012, 19) observes that if

emotions are subjective, how can they be defined in a way which makes them amenable to scientific investigation?

There have been several attempts to circumscribe emotions. In 1972 Ekman suggested that there are six basic emotions that are universal throughout human cultures: fear, disgust, surprise, happiness, and sadness. In the 1980s a new classification system known as the 'wheel of emotions' was introduced (Plutchik,1980).

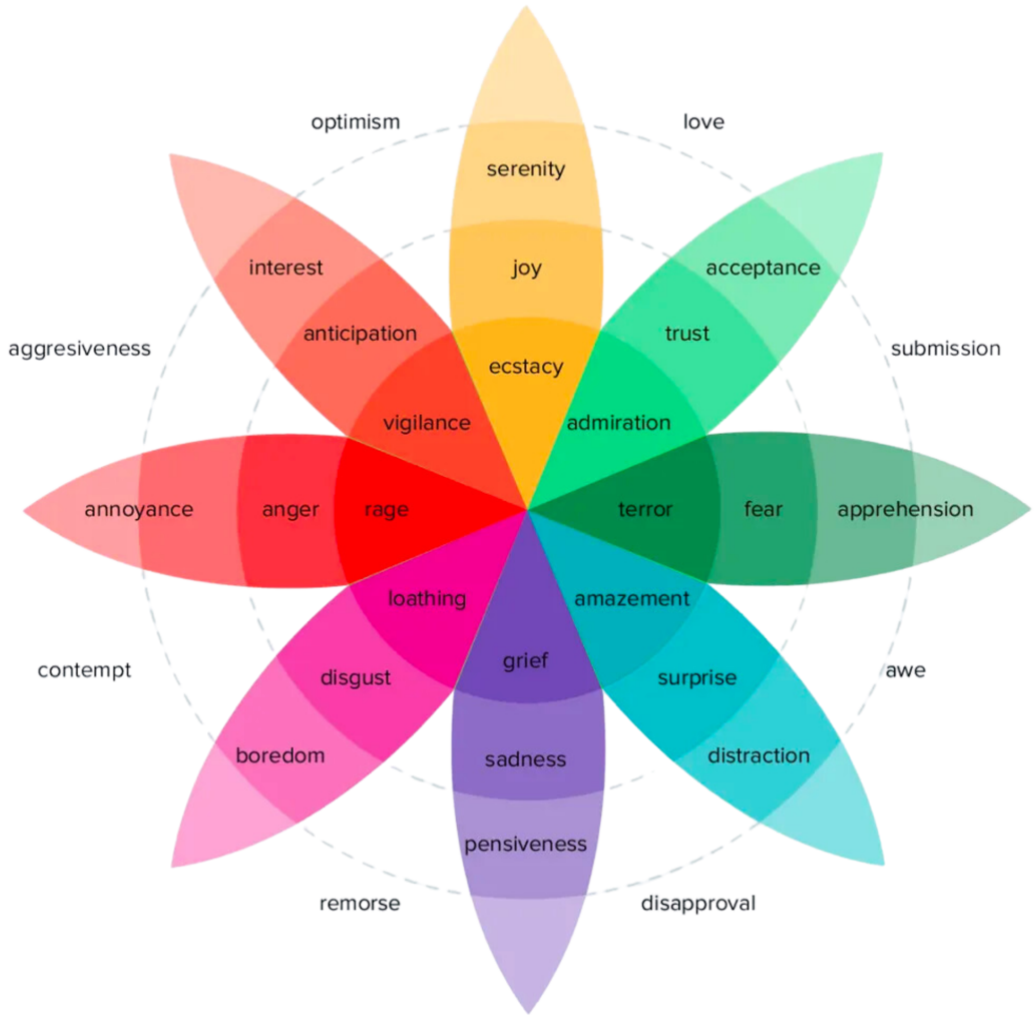


Figure 3.2**:** Wheel of Emotions (Wenzdai, 2020).

This model demonstrated how different emotions can be combined. In 1999 Ekman expanded his list to include a number of other basic emotions, including 'embarrassment, excitement, contempt, shame, pride, satisfaction and amusement' (Cherry, 2022). According to one Cespedes-Guevara, there are three types of appraisals involved in the elicitation of emotions:

> The third type of appraisal consists of evaluations of the aesthetic value of the music, and/or the musicians' ability, creativity, etc. (Juslin, 2013a; Scherer & Coutinho, 2013). In this case, we make use of personal and socially-shared aesthetic criteria to approve or disapprove the music's beauty, complexity, challenge, and the musicians' gestures, technique, flair, deviance from stylistic standards, etc. While the two types of appraisals described above increase the probability of experiencing a wide range of positive or negative emotions, the appraisals of aesthetic value tend to produce emotions such as admiration, awe, or on the contrary, disdain, contempt, or boredom (Cespedes-Guevara, 2016: 112).

Grewe, Nagel, Kopiez, and Altenmüller (2005) observe, that 'although […] emotion and reward systems are found in all humans, not everyone experiences intense emotional responses to music and previous studies vary in the reported rates of these reactions'. Therefore, it may prove difficult to gain a full understanding of emotional responses to music theatre without accessing a wide range of participants and sourcing a larger sample size for survey.

Music has always been a highly emotional artwork. There is significant discussion as to whether music actually induces genuine emotion in listeners (emotivist position) versus those who believe that music does not illicit genuine emotion but rather listeners perceive the emotion (cognitivist position) (Vempala and Russo, 2017: 1). The diagram (Figure 3.3) demonstrates how music listeners can mix perceived emotion with felt emotion to form an emotional judgement of the work:

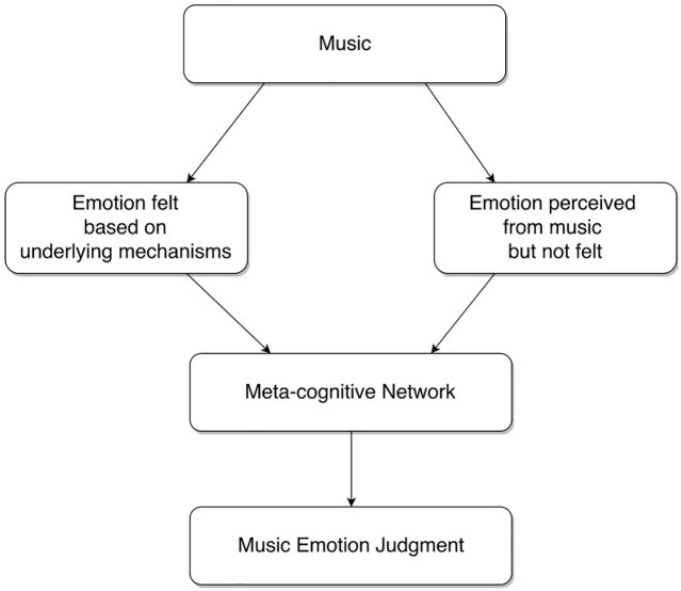


Figure 3.3**:** Meta-Cognitive Network of Emotion Judgement Combining Perceived and Felt motions (Vempala and Russo, 2017: 2).

This thesis does not seek to take a particular argument, but rather objectively discover to what extent observers exhibit responses to music theatre and whether they themselves demonstrate a particular view.

3.5 Aesthetic Emotions

Aesthetic emotions refer to the emotions and feelings that individuals experience when they engage with artwork or objects which are either aesthetically pleasing or not so aesthetically pleasing (Menninghaus, Wagner, Wassiliwizky, Schindler, Hanich, Jacobsen, and Koelsch 2019). A number of objects can trigger these emotions. These include human faces, movements, voices, singing or language use, as well as environments, animals, plants and built environment (*ibid.*). These objects are then interpreted by the beholder by evaluating their intrinsic pleasantness, novelty, and familiarity. This may then activate physiological

processes such as chills, amygdala activation or reward circuitry. The output of these emotions may result in laughter or tears, facial or bodily movement, applause, heckling and/or words of blame or praise (*ibid.*).

A comprehensive review of aesthetic emotion was carried out, which proposed a theory based on Kant's definition (Menninghaus *et al.,* 2019). The review describes aesthetic emotions as 'discrete emotions that, for all their differences in multiple emotion components, always include an aesthetic *evaluation/appreciation* of the objects of events under consideration' (Menninghaus *et al.,* 2019: 50).

3.6 Psychophysical Responses to Music

There are numerous studies which demonstrate psychophysical responses to music stimuli. A psychophysical response to music includes chills and tears (Mori and Iwanaga 2017), facial electromyography, skin conductance, respiration, and heart rate (Merrill*,* Omigie, and Walk-Fuhrmann, 2020).

The literature surrounding the study of psychophysical responses to music is complex and the field often presents conflicting results. There are two schools of thought in regard to emotions in art – the emotivist position and the cognitivist. The emotivist position determines that listeners not only recognise emotion, but also feel it. This is supported by physiological responses when listening to music which are similar to responses which concur with real emotion (Vempala and Russo, 2013: 1). According to the cognitivist position, music does not directly induce emotion in its listeners. Observers may recognise an emotion in music without actually feeling it (*ibid*.). Juslin and Sloboda (2011: 297) observe that a larger number of empirical studies that incorporated measurements of psychological responses support the emotivist position.

Brain imaging studies have demonstrated that chills activate reward related brain regions such as the ventral striatum, orbitofrontal cortex and ventromedial prefrontal cortex and are accompanied by rewarding dopamine release in the caudate nucleus and nucleus accumbens in the striatum (*in* Mori and Iwanaga 2017: 2). In layman's terms, this process is our brains aesthetically evaluating artwork, which determines how much value we place in the work and whether we like or dislike the work and if we do, the brain rewards us. This theory could be applied into music theatre responses where audiences are working to comprehend theatrical considerations as well as complex musical language.

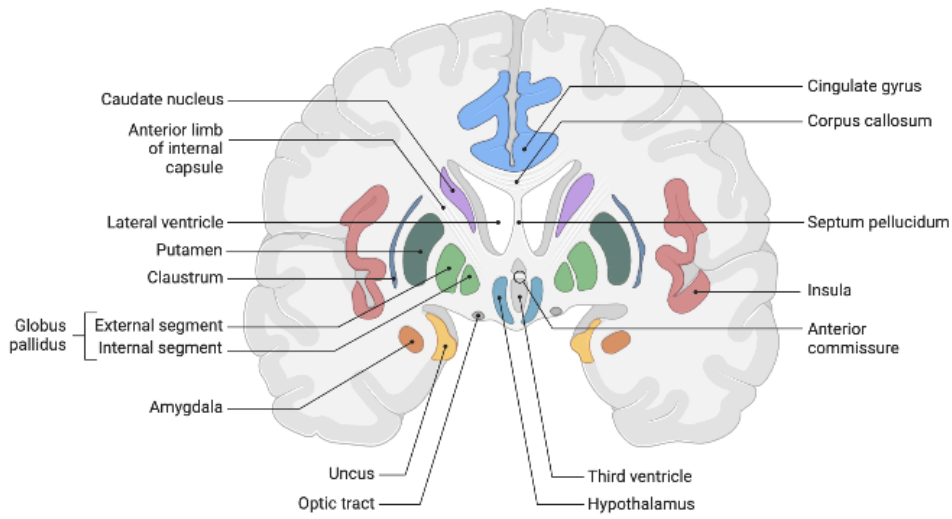


Figure 3.4**:** Coronal Section of the Brain (Cut at Basal Ganglia).

Mori and Iwanaga (2017) found that self-reported chills increased electrodermal (EDA) (variation of electrical properties of the skin) activity and subjective arousal, and that a song which induced chills was perceived as being both happy and sad.

Data recorded from electroencephalogram (EEG) studies (Chabin, Gabriel, Chansophonkul, Michelant, Joucla, Haffan, Moulin, Comte and Pazart, 2020: 8) found that there was an increase of theta activity in the prefrontal cortex

when arousal and emotional ratings increase. This data suggested that theta activity in the right temporal region of interest could be related to music enjoyment. Chabin *et al*. (2020: 9) do however, note that the insula and the auditory cortex are adjacent structures that could have also been involved. This could lead to an uncertain conclusion, suggesting that high-definition electroencephalogram (HD-EEG) could provide relevant information about musical pleasure and pleasurable musical chills, with the development of wireless mobile EEG systems and when applied in social and live contexts.

A 2021 paper identifies that literature and knowledge base of music-evoked chills (MECs) is rapidly expanding and that it is becoming 'increasingly difficult to gain a comprehensive and integrated psychological picture of what MECs entail' (de Fleurian and Pearce, 2021: 890). Although this literature review is substantive, it highlights a significant gap in bridging aesthetic emotion theory and experiments in music listening and music theatre, the two entities being surveyed separately and not as a synthesis. De Fleurain and Pearce (2021: 914) explain that MECs can be elicited by acoustic, musical, and emotional stimulus-driven properties and that their preliminary framework for future research provides a set of minimum criteria and potential experiment approaches (*ibid.*).

The amygdala in the brain has been demonstrated to be quite sensitive (Bonnet, Comte, Tatu, Millot, Moulin, and de Bustos, 2015). It was concluded that the sensitivity of the amygdala to variations in the intensity of positive emotions, and with the demonstrated literature on negative emotions, showed the role of the amygdala in the perception of emotional intensity (2015: 10). The amygdala is located in the limbic system and responds to subcortical structures, such as memory formation, emotion pleasure, and hormone production (Vaskovic, 2023). The amygdala has been established to have a major implication in the emotional

process. The advancement in functional imaging techniques have demonstrated that the amygdala may not only respond to positive, but also negative or unpleasant emotions (Bonnet *et al*., 2015: 2). Previous research found evidence of music-induced activity changes in the amygdala alongside the hippocampal formation without the experience of MECs (Schaefer, 2017: 9-10).

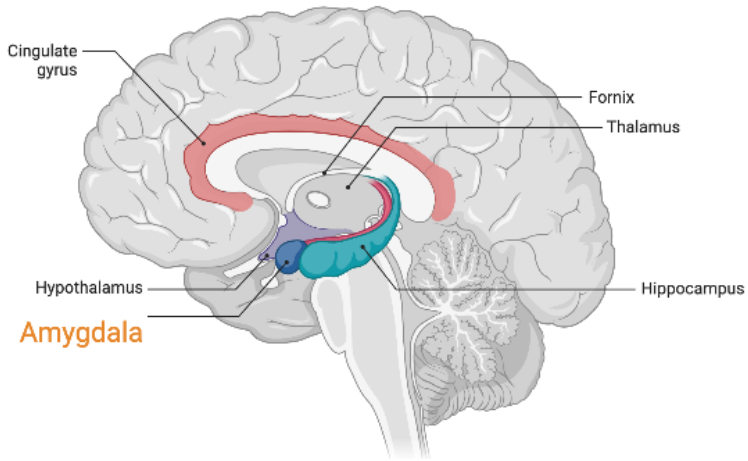


Figure 3.5**:** The Limbic System showing the Location of the Amygdala.

Arjmand, Hohagen, Paton, and Rickard (2017) observe that the amygdala 'appears to demonstrate valence (Figure 3.6) specific lateralisation with pleasant music increasing responses in the left amygdala and unpleasant music increasing responses in the right amygdala' (Brattico, 2015; Bogert, Numminen-Kontti, Gold, Sams, Numminen, Burunat, Lampinen, and Brattico, 2016). It is also pointed out that the pattern of data in these studies suggest that frontal lateralisation is mediated by the emotions *induced* by the music, rather than just the emotional valence they perceive in the music (supporting the emotivist argument) (Arjmand *et al*., 2017). According to the American Psychological Association (APA), valence is the value associated with a stimulus, as expressed

on a continuum from pleasant to unpleasant or from attractive to aversive (Russell, 1980). It is recognised that valence is one of the most important scientific concepts at the heart of emotion experience (Charland, 2005: 83). Figure 3.6 shows the valence-arousal continuum.

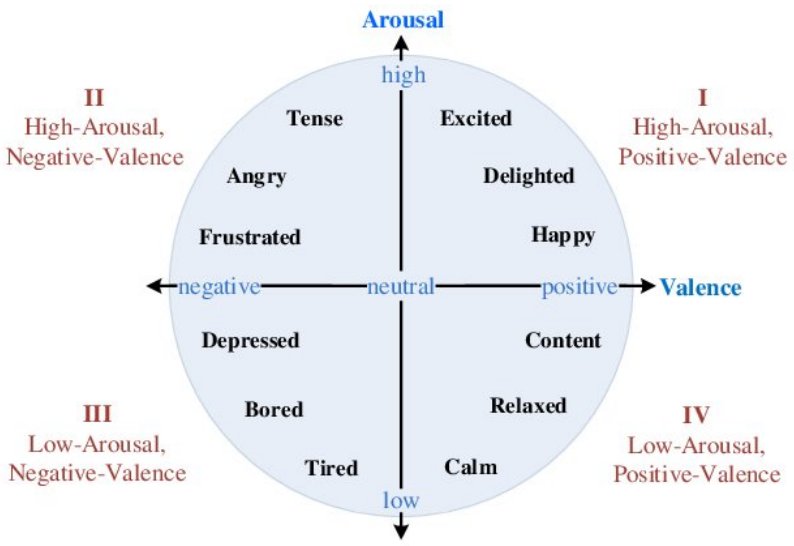


Figure 3.6: Two-dimensional valence-arousal diagram (Yu, da Silva, Albeanu, and Li, 2016: 541).

Sergerie, Chochol, and Armony (2007) demonstrated that the amygdala responds to both positive and negative stimuli, with a preference for faces depicting emotional expressions instead of pictures. A comprehensive review of music-evoked emotion studies in which he highlights that the amygdala is central in the emotion network (Schaefer, 2017). Schaefer (2017: 9) notes that the amygdala has been shown to be responsible for processing memories and fear, or more commonly known as the ‘fight or flight’ response. These observations

have demonstrated the pivotal role the amygdala and the emotion processing of music.

3.6.1 Cardiac Stimulation in Response to Music

Heart rate is based on the number of beats per minute and is recorded using an electrocardiogram (*in* Juslin and Sloboda 2010: 284). High arousal or stimulative music tends to cause an increase in heart rate or pulse rate, while sedative music tends to cause a decrease (Trappe and Voit, 2016). There have been instances where research has provided evidence that heart rate can increase or decrease when listening to any music (*in* Juslin and Sloboda, 2010: 285). Van Dyke, Six, Soyer, Denys, Bardijn, and Leman (2017) observe that music is frequently used as a means of relaxation, but also used as a means of arousal in sports. This study found no links between increases in tempo and heart rate change nor small decreases (2017: 2). Dimitriev*,* Olga, and Aleksey (2022) also found that there was no significant change in the measures of heart rate in responses to traffic noise and lullaby (2022: 1). In the van Dyke *et al.* (2017: 12) investigation, thirty-two participants were exposed to musical stimuli. The evidence demonstrated that people passively listening to non-vocal, ambient music increased an increase in heart rate. However, slowing down the music could regulate the arousal effect of listening to music. This disagreed with previous studies that musical tempo could enhance heart rate (*ibid.*).

A study carried out by Trappe and Voit (2016) found that musical genre could have an effect on cardiac stimulation. 60 subjects were assigned to listen to compositions by Mozart, Strauss and ABBA for 25 minutes. The study found that Mozart and Strauss markedly lowered participant's blood pressure and heart rate while ABBA did not (Trappe and Voit, 2016: 1). This is attributed to 'emotional

factors' and that the addition of vocals activates different regions in the brain leading to different sensations (Trappe and Voit, 2016: 351).

3.7 Psychological Arousal

Arousal in a psychological sense refers to the state of being physiologically alert, awake, and attentive. Arousal is controlled by the reticular activating system (RAS) which is positioned in the brain stem and projects to other brain areas, including the cortex (Faraguna, Ferrucci, Giorgi, and Fornai, 2019: 1). Zuckerman's arousal theory (1984) considered that people differ in how much stimulation they require in order to feel motivated and alert. This may need to be taken into consideration when analysing participant answers.

Figure 3.7 shows the neural pathways in the brain structure which cause arousal:

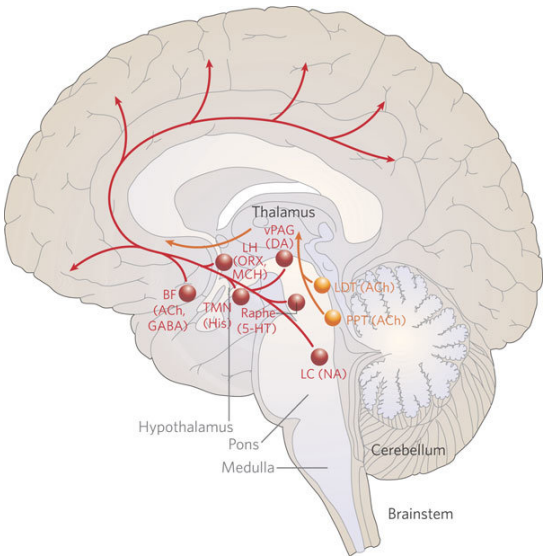


Figure 3.7: Key Components Demonstrating Ascending Arousal System (Saper, Scammell and Lu, 2005: 1258).

Several studies have been mounted to demonstrate arousal whilst listening to music (Lim *et al*., 2018) and although music is known to evoke emotional

response which can be associated with physiological arousal (Olsen and Stevens, 2013). Arousal is based on an early emotional response (Kelly, Andrick, Benzenbower, and Devia, 2014). Kivy's arousal theory that music has a tendency to arouse the emotions that it expresses (*in* Kingsbury, 2006: 83) has been contested. Kingsbury (2006: 87) argues that arousal theorists, find that it is difficult to explain how music makes us feel the emotions it portrays and that 'when we say that something expresses an emotion it remains an open question whether or not it has any tendency to arouse that emotion'.

3.8 Self-Reporting Methodologies

There appears to be no agreed concurrence of method for reporting emotional responses, particularly in music. There are many examples of methodologies which could be employed, these too numerous to detail here. This review will highlight the best models which may be of use later.

Instrument	**Example**
Likert Scales	Likert ratings of emotion concepts
Adjective checklist	Selection of appropriate adjectives
Visual Analogue Scales	Continuous rating scales without intermediate steps
Continuous response versions of self-report instruments	Continuous evaluations of emotion concepts using a computer interface
Non-verbal evaluation tasks	Arrangement of emotional stimuli according to their similarity without the use of verbal labels.

Experience sampling method	Structured report of ongoing activities related to emotion and their causes and effects.
Diary study	Detailed daily report of the central emotional episodes and their causes and effects.
Free/phenomenological report/narrative method	Description of the personal experience. The actual format and focus may vary greatly (retrospective reports over a lifetime of experiences, writing about the recent important emotional episodes, etc).

Table 3.1: Types of Self-Report Instruments and Methods (Zentner and Eerola, 2010: 189).

The above table (3.1) demonstrates both closed-response formats and moves down to more open ones (Zentner and Eerola, 2010: 188).

3.8.1 Aesthetic Response Scales

There has been a considerable amount of research effort put into creating aesthetic emotion scales in music. Schindler, Hosoya, Menninghaus, Beermann, Wagner, Eid, and Scherer (2017: 5-10) collated an exhaustive list of previous attempts to measure aesthetic emotions in visual and auditory arts, as well as advertisements and consumer products. Schindler *et al*. (2017: 33) detail their creation of an aesthetic emotional response scale which consists of fourty-two

phrases which can be used to assess ‘emotion profiles across different domains, such as music, painting, literature, [and] nature experiences’. The scale covers prototypical aesthetic emotions, such as the feeling of beauty, being moved and awe in addition to epistemic emotions such as interest and insight and emotions indicative of humour and joy (Schindler *et al*., 2017: 1). The scale is designed to rely on self-reporting of emotions by participants, on which the authors comment that responses may be influenced by ‘genre expectations, the emotions expressed in the artwork, social desirability, or response tendencies in addition to actually felt emotions’ (Schindler *et al*., 2017: 32). The authors also observe that vernacular (language) may also be a variable factor.

3.9 The British, and the Culture of Emotions

The British have a complex relationship with emotions, often regulating and suppressing them. While they tend to avoid public displays of emotion (often referred to as ‘British stoicism’), they attract media attention and debate when emotions are shown. The Queen's response to public grief after Princess Diana's death exemplifies the expectation of dealing with emotions privately and with ‘quiet dignity’ (Social Issues Research Centre, 2004). Having a cultural understanding of British emotions in a general sense may prove important when attempting to survey British participants.

A literature review carried out by Lim (2016) found that Westerners had a higher experience of high arousal emotions, more than low arousal emotions. However, Evason (2016) observes that the British do not always give away their emotions via facial expressions. This comprehensive understanding of the research process can be incredibly beneficial for researchers. By having a more comprehensive understanding of the process, it may be possible able to establish

stronger connections and rapport with participants. This, in turn, may lead to more comprehensive and reliable data collection. With this enhanced understanding, researchers are equipped with the tools and knowledge necessary to conduct their research in a more effective and efficient manner, ultimately yielding more meaningful results.

3.10 Conclusions

There is a substantial gap in the realm of research when it comes to understanding the intricate psychology behind music theatre performance. Within this uncharted territory, lies opportunity for extensive investigation. Delving into this unexplored area could yield invaluable insights into how audiences engage with and respond to challenging and experimental performances within the realm of music theatre. The pressing question here, is how effectively individuals are able to assimilate their emotions when confronted with such unique and thought-provoking productions?

The potential benefits of such an inquiry are manifold. Firstly, it would significantly contribute to the wider body of knowledge surrounding music theatre, enriching our understanding of this complex and multifaceted art form. Secondly, it has the potential to enhance academic output, as it would undoubtedly generate a wealth of new data and theories. This boost in academic output would be especially timely, given the recent resurgence of interest in music theatre praxis.

In essence, investigating the psychology of music theatre not only promises to deepen our comprehension of a fascinating aspect of performing arts but also holds the potential to invigorate the academic discourse surrounding this field. This endeavour could serve as a catalyst for a renaissance in music theatre

studies, offering fresh perspectives and innovative ideas to propel the art form into a new era of creativity and understanding.

Chapter four will provide a comprehensive discussion of the selected research methodology, research questions, hypotheses, and research approach that have been chosen for this body of research. This chapter will delve into the detailed development of the methods of data collection, processes, and research limitations, providing a thorough understanding of how the data was gathered and analysed. Furthermore, the chapter will thoroughly examine the advantages and disadvantages of the nominated research tools, sampling technique, and data analysis methods employed in this study. It will also highlight the ethical considerations and limitations that were encountered during the implementation of the research methodology. By providing a detailed exploration of all these aspects, this chapter aims to provide a comprehensive understanding of the research methodology employed in this study.

Chapter Four

Research Methodologies

4.1 Introduction

197 participants were recruited in total across four surveys (Experiment A (*n* = 48), Experiment B (*n* = 36), Experiment C (*n* = 13) and finally, Experiment D (*n* = 100). Three online questionnaires and one laboratory experiment, which surveyed participants for observation, heart rate monitoring and interview.

This research aimed to discover how strongly audiences responded emotionally to experimental music theatre stimuli and whether it was possible to demonstrate absence of emotional attachment due to a lack of aesthetic appreciation. The research methods were informed by music-psychological experiments and measures of artistic aesthetic appreciation. This research was approached using the emotivist position that argues music evokes genuine emotional responses in listeners, as opposed to the cognitivist position, where listeners perceive emotions expressed by the music (Lundqvist, Carlsson, Hilmersson, and Juslin, 2009: 1).

This chapter will provide a comprehensive overview of the chosen research methodology, research questions, and approach for this body of research. It will delve into the intricate details of the development of the methods of data collection, including the various processes involved and any potential limitations that may arise. Furthermore, it will thoroughly examine the advantages and disadvantages of the nominated research tools, as well as the sampling technique and data analysis employed in this study. Additionally, the chapter will extensively explore the ethical considerations that were taken into account during

the research process, shedding light on the potential limitations posed by the chosen research methodology.

4.2 Research Approach

This project called for a deductive research approach, which is a systematic process consisting of theory, hypothesis, test, and result. In a deductive research approach, a hypothesis is derived from existing theory, and then the empirical world is explored, and data are collected to test the hypothesis. On the other hand, an inductive approach involves starting with as few preconceptions as possible, allowing theory to emerge from the data (O'Reiley, 2012: 2). This research approach was made to not only test existing theory but also to facilitate the development of new theory. By encouraging more academic and artistic interest in the music theatre art form, this research approach has the potential to foster new insights and discoveries.

4.3 Research Philosophy

For this project, a pragmatic research approach was chosen. Primary motivation was derived from Yardley and Bishop's (2008: 358) argument that 'it is not simply advantageous but actually *necessary* for psychologists to use both qualitative and quantitative methods in order to gain a complete understanding of humans'. The motivation for the use of a mixed-method approach was re-enforced by Williamon, Ginsborg, Perkins and Waddell (2021: 19) who state that 'a great deal of music education, psychology, and performance science research can [already] be described as pragmatic, motivated by the researcher's desire to bring about some form of change'. This text also provides a succinct definition: 'an epistemological approach to the generation of knowledge using a logical attitude

(Williamon *et al*., 2021: 442).' The persuasion that 'pragmaticism addresses concerns of both qualitative and quantitative researchers, by pointing out that all human inquiry involves imagination and interpretation' (Yardley and Bishop, 2008: 355). They further argue that human inquiry must be grounded in empirical, embodied experience' (*ibid*.).

4.4 Research Framework

The framework was built from several previous studies primarily in psychology. To build a solid and justifiable research framework, this study drew on social science methods which involved the use of selected stimuli and asking participants to self-report their emotional responses using online survey (Armajad *et al.,* 2017). The use of the self-report model presented participants with musical stimuli which the researchers had found to give participants chills (musical evoked chills) (MECs) in previous questionnaires (Banister and Eerola, 2018). Their previous experiment lasted one hour, and participants were subjected to three stimuli (Banister and Eerola, 2018: 6). Questionnaires are a common method of collecting data on emotion without access to medical grade equipment such as fMRI scanners (Juslin and Laukka, 2004; Lilljestörm, 2011).

Several studies have been mounted to identify the effect of music on heart rate (Rickard, 2004; Lundqvist, 2009), although none in music theatre yet. Juslin and Sloboda (2011: 285) identify that 'few studies have been conducted on the effects of performing music on heart rate'. However, they identify that there are experiments which date back to 1906. Juslin and Sloboda (2011) also recognise that 'high arousal or stimulative music tends to cause an increase in heart rate'. Therefore, it will be important to find the resting heart rate of each participant before exposing them to stimuli. Much of the latter two experiments (C and D)

were based on collecting data using the Aesthetic Emotions Scale (AESTHEMOS) (Schindler *et al.,* 2017). This scale drew on theoretical accounts of aesthetic emotions with 'specific domains of music, literature, film, painting, advertisements, design and architecture' (Schindler *et al.,* 2017: 1). This scale became a framework which contained 21 subscales with two items, which were designed to assess the 'emotional signature' of responses to stimuli and their perceived aesthetic appeal (*ibid.*). Although a highly useful tool, it was quickly discovered that a slight alteration was required for these experiments (See Appendix D and E for compassion).

4.5 Research Rationale

Music and emotion is becoming increasingly popular as a research topic (Juslin and Laukka, 2004: 217). There have also been many calls for further research in music theatre. Mattias Rebstock (2020: 281) argues that 'our understanding of independent music theatre would […] benefit from a more detailed inquiry into the domains from which individual composers have emerged'. Bornoff's 1968 report argues that music theatre work did not seek to move us by acting psychologically on audience emotions, but instead moved audiences from a distance through a dedicated *vis-à-vis*, and the opportunity to test this theory with contemporary music theatre performance.

This present research was born from an interest in how non-experts perceive experimental music theatre performance, and how this impacts audiences emotionally. The aim of this research is to further discover how audiences respond emotionally and, to a lesser extent, aesthetically to experimental music theatre performance. This will contribute to the ongoing but inadequate discourse of music theatre in the United Kingdom and Ireland. This research will aim to

demonstrate how contemporary audiences go about emotionally comprehending experimental performance work, and what emotional valence is achieved when asked to observe stimuli where little to no context was provided.

This research has contributed to the synthesis of praxis and ideas relating to music theatre knowledge, as well as revealing psychological arousal to experimental and unfamiliar musical language and performance. This study has also identified future recommendations for broadening research into this area. By broadening realisation of current intimate knowledge of the psychology of experimental arts praxis, composers and practitioners can begin to fashion more meaningful work relevant to modern audiences. Thus, the possibility arises for opportunity to increase social mobility in through the performance arts.

4.6 Research Methods

Two research methods were chosen in which to collect data. It was decided to initially use a questionnaire to enable the collection of data from a wide demographic of people from varying backgrounds. Once this had been evaluated, smaller more intimate studies were carried out, drawing data from both artistic research and psychological research backgrounds.

4.6.1 Questionnaire

A questionnaire was chosen as the initial method of data collection. Questionnaires allow researchers to statistically interrogate large data samples (Willig and Stainton-Rogers, 2008: 4) and can be administered without the presence of a researcher (Cohen, Manion and Morrison, 2000: 245). Visted, Sørensen, Osnes, Svendsen, Binder, and Schanche (2017: 2) observe that:

> As self-report questionnaires may measure the subjective experience of emotion regulation, psychophysiological assessment may be valid assessment of the somatic processes underlying emotional processing.

There were many benefits to using this research method as it allowed for the collection of data from snowball samples, for which the research team had little control over when it was/when they were disseminated to groups of people such as Facebook connections and Twitter followers. The questionnaire allowed for a well-ordered way of collecting both quantitative and qualitative data, with the added benefit of being electronic. Data could be quicky re-organised and answers could be examined while the survey was live. There are many advantages to using a questionnaire method in musicological and psychological research. Pattern (2017) identifies that questionnaires are low cost and do not come with any time constraints, allowing participants to complete them at will. Using questionnaires, however, can include some disadvantages. Kelly, Clark, Brown, and Sitzia (2003) observe that there is a lack of researcher control in the responses, and large amounts of data can be neglected. There is also a possibility that the data collected could lack depth of details on the topic of investigation. A further disadvantage is that there is no policing of participant answers, which could lead to carelessness or the provision of irrelevant information. The application for this project will allow participants to consider their responses before submitting them to the researcher. This will allow them to assimilate their responses and chose one which they feel is most appropriate.

4.6.2 Laboratory Experiments

Original motivation for these were based on Tim Coker's workshops (2006). Coker showed the students a video stimuli of an opera and gaged their opinions of the work. This helped Coker to understand how the students aesthetically

appreciated the opera and what their initial responses were. This study aims to emulate this methodology and improve upon it, delving deeper into audience psyche and discovering aesthetic emotional responses, arousal, and valence.

Observation is a useful research tool employed to collect quantitative data through systematic means. This method is required when researchers need to learn information about the interaction of a group (Kumar, 2014: 173). Kumar notes that observation is appropriate in situations where full and/or accurate information cannot be elicited by questioning (*ibid*.). Goodwin and Goodwin (2004: 294) identify that that there are two types of participation: participant and naturalistic. Participant observation refers to when the researcher participates in the activities of the group being observed. This allows the researcher first-hand insights, which may remain hidden to a more distant observer. Naturalistic observation refers to when the researcher is not involved with the group activity, but remains as a passive observer, watching and listening and drawing conclusions to participants in their everyday environments (Goodwin and Goodwin, 2004: 293). The latter type of observation was chosen to allow for a more objective approach to collecting data. There are several limitations to employing observation as a data collection tool. Kumar (2014) observes that individuals may change their behaviour when they are aware that they are being observed whether the change be positive or negative and could occur for several reasons (*ibid*.). When this manifests, it is known as the Hawthorne effect. Kumar also notes that there is a possibility of observer bias which could occur if the observer is not impartial, this could mean there becomes no easy way to verify the observation and the inferences drawn from them (*ibid*.), he also notes that the interpretations drawn from observations may vary from observer to observer and that there is a possibility of incomplete observation and/or recording. This

could occur when the observer takes detailed notes, thus missing some of the interaction. There are many benefits to employing observation as a data-gathering technique. Simpson and Tuson (2003: 16) cite the direct access to the interactions which are the focus of research. Records made will be more accurate and detailed than data from any other source.

Type of observation	**Advantages**	**Limitations**
Participant observation including practice-led research, potentially using data derived from self-documentation	• Useful when exploring creative processes via introspection • Can be qualitative and/or quantitative • Provides context based and detailed descriptions • Is particularly useful for unexplored phenomena	• Introspection can be unreliable. • Findings from single case studies cannot be generalised • The researcher must develop astute skills of observation in order to find ways to capture real-life settings in an open-ended way.
Semi-structured observation including micro-ethnography and	• Useful when taking the role of more objective ("outsider") observer	• Can be difficult to recruit participants as fully informed consent cannot be obtained until research

conversation analysis	• Allows for uncertainty at the outset about what is to be observed and possibility of adapting and refining observation tools • Can be qualitative and/or quantitative	questions and methods have been refined and specified • Findings may not be generalisable
Structured observation	• Necessary when taking the role of objective observer • Undertaken once behaviours of interest have been identified and operationally defined, and a coding scheme has been developed • Provided issues of validity have been addressed and a proportion of observations have been checked for	• Planning the research must be carried out meticulously and can be challenging and/or time-consuming • There is no possibility for new insights to emerge that are not covered by the observation scheme

	reliability, findings are robust	

Table 4.1**:** Advantages and Limitations of three Approaches to Observation (Williamon *et al*., 2021: 99).

These observation techniques will allow the researchers to observe behaviours and determine information which the participant may not be willing to share. This will also demonstrate to the researchers any physical reactions to the music theatre work which may be involuntary such as foot tapping, facial expressions, or visible confusion. Lilljestörm, (2011: 17) succinctly contributes to the present justification thus:

> One advantage of the experimental method is that it makes it easier to apply a broader range of measures, including psychophysiological measures, which can help to validate self-reports of emotions. Measures such as heart rate and skin conductance have proved useful for measuring autonomic arousal, which is strongly linked to the experienced intensity of musical emotions […].

4.6.3 Facial Reaction Recording

To enable the capture of data on a localised scale, the use of individual and facial recording was chosen. No previous study has been carried out to attempt to identify key indexes indicating emotional responses specific to music theatre. The theoretical idea for this experiment was to record participants' facial responses to negate the need for them to self-report on their emotions. Instead by observing in real time, participants could concentrate on the artwork stimuli they were being asked to watch. As Juslin and Sloboda (2010: 763) indicate: 'landmark studies by Ekman and colleagues suggested that facial emotion recognition is universal for a number of basic emotions'. Hodges also agrees 'that facial expressions are

among the more obvious indicators of emotions' (*in* Juslin and Sloboda, 2010: 291). He also discusses that objective measurements can be made through electromyography, which involves placing electrodes on the zygomaticus (smile muscles), corrugator (frown muscles) and orbicularis oculi (muscles under the eyes) (*ibid*.). Due to the lack of resources available for this study, and to retain as personable approach as possible, this technology was not used for this study, therefore a manual analysis was used instead, relying on researcher observations from each experiment.

4.7 Research Timeline

The research timeline was loosely based on the academic year. The pilot questionnaire ran from January – March 2021, the second from September – December 2021 and the laboratory experiments were carried out in May 2022. The final questionnaire ran from October to January 2023. The thesis was written throughout the research process.

4.8 Stimuli Selection

Choosing the most appropriate music theatre examples was a challenging task. Several stipulations were created for a performance to be used in the questionnaires. The decisions which lead to the use of video stimuli has been explained in more detail in 4.9.

1. Qualification

Does it qualify as 'music theatre' as defined by Anthony Gilbert (*in* Hall 2015: 17): 'music theatre' should be concise, contain no stage fripperies, no large orchestra, no divas, no gigantic arias. It could include the spoken

word, ideally be done in the round, and music and theatre should be integrated for the clear purpose of putting across a socio-political message. In its purest form, the idea of plot could be dispensed with, in which case the content could be abstract. Although this was to become the base to work from, this was not strictly adhered to for example, stimulus 2 used a large orchestra but could still qualify as 'music theatre' as it met several of the other criteria.

2. **Availability**

   Was a high-quality video recording of the performance readily available online? Recordings would need to be above 720p and must also be of sufficient length to select excerpts from.

3. **State of the Art**

   The work must have been created and performed within the last ten years.

4. **Relevancy**

   Does the music theatre work help to progress the research objectives?

5. **Potential to Illicit Emotions**

   Did the work have the potential to elicit both negative and/or positive emotions in participants?

6. **Societal Context**

   The stimulus recordings should primarily be of British or Irish origin. This was to allow for participants to evaluate work created at home that may be slightly more familiar and performed in English. For the laboratory experiments, and beyond, at least one example should be chosen as an example of continental music theatre and should contain no spoken word. This was to allow participants a contrast to home performance.

By following these stipulations, a consistent cross sample of work could be chosen. This checklist was applied for all surveys. A control stimulus was used to provide a baseline for comparison with the experimental stimulus. By using a control, it was possible to ensure that any changes in the experimental group were due to the participant's emotional responses and not to other factors. This helps to increase the validity and reliability of the results obtained from the study.

4.8.1 Pilot Questionnaire Stimuli

Stimuli were selected which were most likely to trigger a form of emotional response. A mixture of topics and composers were chosen to demonstrate the range of music theatre performance. Tables 4.2, 4.3, and 4.4 list the works and stimuli extracts used.

	Piece Title	Production	Composer	Timestamps	Notes
S1	*SWEET TOOTH (2018)*	St George's Bloomsbury	Elaine Mitchener	21:19 – 22:32	Control variable
S2				07:11 – 08:03	
S3/4				38:52 – 40:53; 42:17 – 43:00	
S5	*BRETHERN (2019)*	University of York, York	James Whittle	04:18 – 02:31	
S6				18:53 – 19:58	
S7				19:02 – 20:00	

Table 4.2: Stimuli for Pilot Study

SWEET TOOTH (2018) is a new music theatre work which explores the sugar slave trade and the emotional impact on slaves. Each movement applied various music genres such as Kumani singing and sea shanty which demonstrated the clash of cultures. The work used movement, props, and lighting to set the scenes and was extremely emotive in its portrayal. The second piece chosen was *BRETHRN* (2019) which was written in response to the ongoing refugee crisis. This piece used a combination of lighting and movement to demonstrate a feeling of togetherness and family or lack there off.

4.8.2 Experiment A Stimuli

	Piece Title	Production	Composer	Timestamps	Notes
S1	*Baby you and me girl (2010)*	ARCO Collective	Adam de la Cour	00:00-04:13	
S2	*SWEET TOOTH (2018)*	St George's Bloomsbury	Elaine Mitchener	38:52 – 40:53	Control variable
S3				04:02 - 07:25	
S4	*KISSING THE SHOTGUN, GOODNIGHT (2017)*	Battersea Arts Centre	Christopher Brett Bailey	02:03 – 03:59	

Table 4.3**:** Stimuli for Experiment A.

Each piece was chosen as it offered something different to the observing participants. This was to demonstrate the broad spectrum of music theatre work and how it can vary in subject and scope. *Baby you and me girl* (2010) is a music theatre work which uses unconventional instruments and sexually suggestive vocalisations alongside suggestive movement. There is a distinct absence of plot. *SWEET TOOTH* was again chosen as the control variable and as a demonstration of the most representational music theatre work. The third piece chosen for this experiment, *KISSING THE SHOTGUN, GOODNIGHT* (2017) employed the use of electric guitar and violin. This piece crosses the line between music theatre and rock concert as there is a sense of non-representational plot and heavy use of lighting effects and smoke, which fully immerses the audience.

4.8.3 Experiment B and C Stimuli

	Piece Title	Production	Composer	Timestamps	Notes
S1	*SWEET TOOTH* (2018)	St George's Bloomsbury	Elaine Mitchener	39:52 – 40:33	Control variable
S2	*The Site of an Investigation* (2019)	New Music Dublin	Jennifer Walshe	25:00 – 28:00	
S3	*Penumbra* (2014)	Terry Longshore Performance	David Bithell and Terry Longshore	7'50" – 11'09"	

S4	*'mr* (2018)	Musikfabrik	Samuel Solís-Serrano	00'00"-01'44"	

Table 4.4: Stimuli for Experiments C and D.

SWEET TOOTH was again chosen as the control variable. *The Site of an Investigation* (2019) was the largest piece of music theatre employing an orchestra. The vocals were performed by the composer and had several interesting visual elements such as the performer's movements around the stage and the percussionists building and destroying a stack of paper cups at the back. *Penumbra* (2014) was an example of a purely instrumental work, with stimulating visual projections. Finally, 'mr (2018) was the only example of European music theatre and was included to offer a juxtaposition against the British and Irish pieces that had been surveyed. This piece was for solo violin with additional vocalisations from the performer. This piece was particularly stimulating visually as the performer was covered in luminous, aboriginal body paint.

4.9 General Research Limitations

There were several problems which occurred during the collection of this data. Initially, it was difficult to survey intermedial or immersive music theatre performance due to the nature of the study, particularly with many of the experiments taking place online. Performing research during an international pandemic (Sars-Cov-2) also came with its own limitations, such as the need to adapt research for primarily online data collection, which meant that live performance was not able to be surveyed.

Some participants failed to demonstrate any significant indication of emotional reaction. This may be indicative of the nature of the music theatre stimuli or that certain participants did not necessarily possess the emotional literacy to fully explain their feelings.

There is a weakness in employing an interpretivist approach which was determined by the nature of the research. Some results from interviews and focus groups could be interpreted as bias, as the results were not based on empirical data but instead on the analytics of the researcher.

Music Theatre is not wildly performed in Plymouth, therefore online methods were deemed more appropriate for this study. There were arguments for and against surveying live music theatre performance, which are listed in the following table (Table 4.5).

Advantages	**Disadvantages**
Participants can be surveyed at any time and can take their time assimilating the stimuli they have observed.	Participants are asked to give answers directly after watching and listening to performance and are expected to assimilate their thoughts in a short period.
Can reach a wider audience who may not already be familiar with this genre of work.	Relying on audiences who are already attending this genre of work.
Research can be carried out remotely.	Research could potentially disrupt the performance.
Participants can re-watch parts of the performance they find interesting.	Participants can only watch the performance once.

No costs involved.	Potential cost barriers, restricting access.

Table 4.5: Advantages and Disadvantages of Surveying Live Performance.

More specific research strengths and weaknesses are discussed following each research procedure.

4.10 Data Analysis

Data analysis is the process of cleaning and elucidating the data collected. The aim of data analysis is to describe the objects or events to which our data refers, not just describe the data itself (Dey, 1993: 30). Qualitative data are never 'gathered fresh from the world (Foster and Parker, 1995: 165), rather they are always a result of collaborative effort from researcher and participant' (Dyer, 2006: 137). Thematic analysis refers to the identification of themes either originating from data, or imposed from theoretical concepts (Hayes, 2021).

Analysis of data in this study began with the process of coding. Coding is the process of 'identifying concepts and [are] categorised which can then be dimensionalised' (Grbich, 2007: 74). Qualitative data was summarised using Notion.ai. This was then coded to highlight significant emotional reactions and then analysed manually, which was then placed into thematic categorisations. Quantitative data was analysed using Analysis of Variance (ANOVA) and t tests to highlight statistical variances and significances. Means, and standard deviation were calculated using Microsoft Excel, (see tables 5.1 and 5.18 for the mathematical breakdown tables, for which these calculations were required).

Approximate mean age, from grouped data for Experiments A and B were calculated with the following equation[6]:

$$\bar{x} = \frac{\sum(f \cdot Xm)}{\sum f}$$

Standard deviation for all experiments was calculated with the following equation:

$$s = \sqrt{\frac{\sum(m - \bar{x})^2}{n-1}}$$

(Hayes, 2021: 301).

4.11 Ethical Considerations

Ethical approval was awarded by the Faculty Ethics Committee in April 2021. A second application addressing the laboratory studies was submitted in November 2021 and granted in December 2021.

The survey software used was supplied by Jisc and was General Data Protection Regulation (GDPR) compliant. Questionnaires began with a Participant Information Sheet and ethical warnings were clearly displayed on the front page. Observation can be intrusive (Urquhart, 2015: 1), however, the participants were not subject to particularly challenging questioning, similar warnings were put in place to warn them of the potentially triggering material which was contained within the excerpts. Participants were explicitly informed about the tasks they were expected to perform, how they would retain their anonymity, the voluntary nature of the studies and their right to withdraw. Informed consent was collected for all three studies via the online survey platform. This study was carried out to British Psychology Society Code of Ethics (2021).

---

[6] $\boldsymbol{f}$ = frequency; $\boldsymbol{Xm}$ = mean Σ = sum; x = sample mean.

4.12 Experiment A – Pilot Questionnaire

Initially, a pilot questionnaire was used to test questions out and gage initial reactions to experimental music theatre performance. This allowed for the collection of data from a wide range of demographics of varying musical backgrounds. There was no pre-requisite or screening process to answer the questions. The survey was designed to be very accessible, with a clean layout and complimentary colours.

Page 5: Audience Response

This part of the survey uses a table of questions, view as separate questions instead?

How likely are you to attend the following live art performance? ✱ *Required*

Please don't select more than 1 answer(s) per row.

Please select exactly 9 answer(s).

Please don't select more than 9 answer(s) in any single column.

	Most Likely	Very Likely	Likely	Un-Likely	Very Un-likely
Opera	☐	☐	☐	☐	☐
Chamber Opera	☐	☐	☐	☐	☐
Musical Theatre	☐	☐	☐	☐	☐
Immersive Theatre	☐	☐	☐	☐	☐
Straight Play	☐	☐	☐	☐	☐
Music Recital	☐	☐	☐	☐	☐
Popular Music Concert	☐	☐	☐	☐	☐
Music Theatre	☐	☐	☐	☐	☐
Ballet	☐	☐	☐	☐	☐

‹ Previous Next ›

Figure 4.1: Example of Layout and Aesthetic Colour Scheme for Experiment A.

The question-type varied however, they consisted of single and multiple-choice options to unlimited answer boxes. The questionnaire made use of multiple-item scales in a reversed-score fashion and made use of Likert scales. They were additionally split into three studies, which helped to determine the direction of the research project and provide a rationale for the ongoing research.

4.12.1 Sample Recruitment

The questionnaire surveyed 48 participants (n = 48)[7], aged between 18 and 74 (*S.D.* = 1.12). Several methods were used to recruit participants. By using snowball sampling, implied that the overall population has an equal chance of being part of the study (Faryadi, 2019: 771-772). Initially targeted invitations to participate were send to student members of the University of Plymouth who were reading for the BA in Music, as well as the outgoing MA Music cohort. A further targeted group at the university included all postgraduate research students. Finally, the call to participants was placed in both the staff and student bulletins, which would be seen by all those who read the email.

[7] Information on gender was not collected.

Elucidating Orchestration as an Aesthetic of Music Theatre

CALL FOR PARTICIPANTS

We are looking for anyone who has an interest in contemporary music or theatre performance to participate in a questionnaire investigating audience responses to experimental music theatre work as part of a PhD research project.

You will be asked to watch/listen to several excerpts of music theatre and answer some simple questions about what you have seen. The survey should take around 30 minutes to complete.

If you wish to participate anonymously, please visit: https://plymouth.onlinesurveys.ac.uk/understanding-orchestration

For further information please contact:

Ryan Thomas Green
ryan.green@plymouth.ac.uk

MPhil/PhD Music
School of Humanities and Performing Arts

UNIVERSITY OF PLYMOUTH
School of Humanities and Performing Arts

Figure 4.2: Initial Call for Participants.

The next two groups chosen were the Standing Conference of University Drama Departments (SCUDD) email list, along with the 'Musicology-all' email list also provided by Jisc. Further participants were recruited through social media using a technique known as snowball sampling. Faryadi defines snowball sampling as the selection of a 'few individuals of the target population. After they have provided you with the necessary information, [you] ask them to suggest suitable people to participate in a similar interview or survey' (2019: 773). Facebook and Twitter were the only sites used for this. The number of potential participants that could be recruited from these is unquantifiable. In addition to Faryadi's proposal that participants suggest further potential, people chose to 'share' the link to their own social media 'walls', which resulted in further snowball sampling as users

had the choice to participate or not. It should be noted that there was a lack of enthusiasm shown towards online surveys, particularly when there is no tangible or monetary reward for doing so.

4.12.2 Research Design

A questionnaire was chosen as it seemed the most appropriate method of demonstrating stimuli and recording initial emotional reactions. The online questionnaire could be self-administered by the participant and was designed using 'Online Surveys' a platform provided by Jisc. A combination of Likert scales, open questions and tick-box style answers were used. Questions were phrased using simple syntax with the avoidance of complex words which may have confused participants. This design would act as a blueprint for future research efforts.

4.12.3 Research Procedure

The first pilot questionnaire opened with the participant information page which pre-emptively thanked participants for agreeing to take part. They were told the title of the study, the page then explained how the data collected was used and whom to contact for more information. Participants were then told that they should expect the survey to take around thirty minutes and that it would require careful consideration and listening skills. They were then asked to answer the questions honestly and in full. Following this, the page explained that their data would remain anonymous and that they may withdraw at any time. Finally, participants were made aware that the survey contained video extracts from music theatre work which portrayed slavery, physical violence, abuse, swearing, and themes which some participants may find upsetting. Additionally, they were informed that

if they felt that they are not able to participate, they were free to leave the survey at any time.

The questionnaire opened with generic demographic questions, such as age, highest academic qualification held and whether the participant could play a musical instrument, for which a list of various instruments was presented with the option to add a response if their instrument was not listed. There was also a 'none' option for those who did not play. The next set of questions aimed to discover whether participants had attended performances of theatre genres. The options included opera, chamber opera, musical theatre, immersive theatre, straight play, music recital, popular music concert, music theatre, ballet and other. These were not pre-defined, allowing participants to interpret these themselves, there was also an option to add their own, if necessary. Next, the participants were asked how likely they would be to attend live art performance, the list being the same as the previous question. The final question of this section asked participants of their understanding of the term 'orchestration'. Here they were presented with the following options: the instruments selected for a piece of music; the way the instruments are employed in order to perform a piece of music; the writing of original music; how music is performed; the combination of instruments used in a piece of music; I am unsure and 'other'. They were allowed to choose as many options as they wished. This was the end of the pre-study questions. Following this the participants clicked on to a new page which informed them of the first music theatre study. Figure 4.3 demonstrates the design and layout used for this questionnaire.

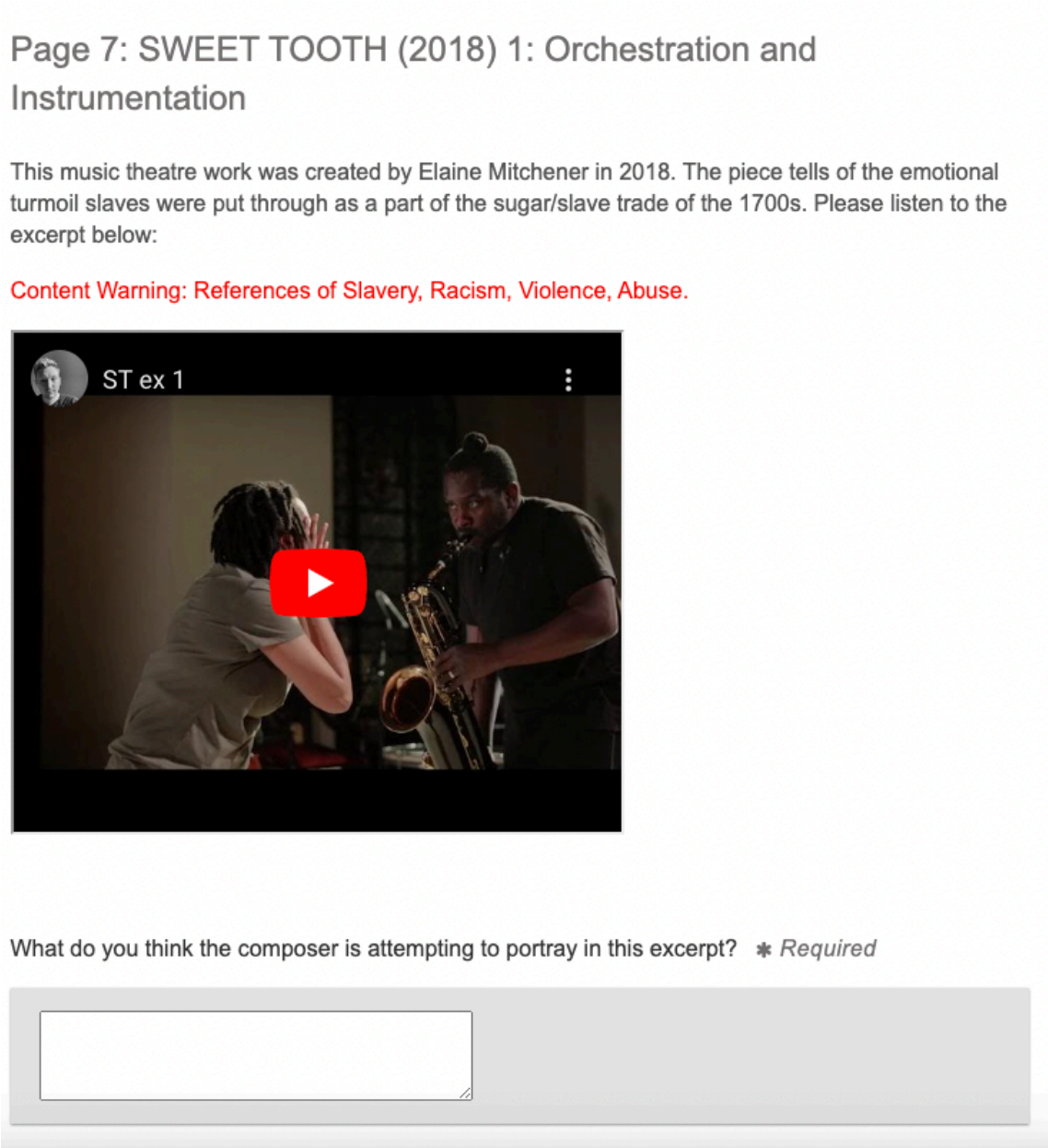


Figure 4.3: Example of Stimulus with Questions Immediately Following.

The first stimulus (S1) was Elaine Mitchener's 2018 *SWEET TOOTH*. Participants were told that the piece tells of the emotional turmoil slaves were put through as a part of the sugar/slave trade of the 1700s. They were then asked to listen to the excerpt, once they had watched the clip they scrolled down the page to the questions. The first asked: 'What do you think the composer is attempting to portray in this excerpt?', then, they were asked 'In your opinion, what is the relationship between the instrument and the performer in this excerpt?'. After this,

they were asked to choose from several options, describing how effective they thought the orchestration was in this excerpt. The three options being: 'the orchestration is effective and helps to paint a picture'; 'the orchestration is not effective and un-emotive' and 'I am not sure'. Participants were then given the option to add any additional thoughts they had. They were then asked to identify the instruments they had heard in the excerpt; they were to choose from: saxophone; piano; drum kit; timpani; tambourine; clarinet; accordion and voice. The final question of this page asked participants to describe how the instruments sounded (the timbre) in this passage and to choose all that applied. The options were: shrill; warm; smooth; thin; rounded; breathy; bright; woody; metallic; harsh; piercing; reedy; strong; flat; resonant and brassy. Finally, there was an option to add any additional thoughts.

The second set of questions for *SWEET TOOTH* dealt with aesthetics. Participants were asked to watch another short excerpt (S2) from the piece. They then read a definition of aesthetics:

> Aesthetics in theatre are concerned with principles which help to make-up a piece of theatre such as sound, staging, dance, instrumentation, set/lighting design, which contribute to how a piece feels or looks.

Following this they were asked to describe how the instruments added to the overall aesthetic of the excerpt. Their options were: they create a sense of misery; they create a sense of tension; they create a sense of despair; they create a sense of safety; they create a sense of danger; they create a mutual soundscape; they create a sense of happiness; they help me to care about what is happening; they do not help me care about what is happening; they make me feel ambivalent about what is happening. There was then an option for additional thoughts. Following this, participants were asked to consider what kind of atmosphere the composer was trying to create, again selecting all that applied: soothing; exciting;

relaxing; stimulating; calming; enlightening; frightening; invigorating; healing; empowering; stirring; rousing; exhilarating; uplifting; mysterious. Next, the study asked participants to describe their aesthetic response to a final excerpt. Once again, participants were invited to use as many words as required. The options were: admiration; adoration; aesthetic appreciation; amusement; anger; anxiety; awe; awkwardness; annoyance; boredom; calmness; confusion; craving; disgust; empathetic pain; entrancement; excitement; fear; horror; interest; joy; nostalgia; relief; romance; sadness; satisfaction; sexual desire; surprise; other.

The final study of this questionnaire was concerned with the second case-study *BRETHREN*[8] (2016). Participants were once again asked to watch and listen to a short clip and answer questions based on what they had seen and heard. The first question asked how the instrumentation helped the composer to demonstrate the concept of family or 'collecting', which was purposely left open to interpretation. The second question asked participants to think about how the instruments were being used as characters. They were then asked if they agreed whether there was a perceived sense of family created by the instruments, the three options being: 'there is a distinct sense of family'; 'there is a no sense of family' and 'I'm not sure'. There was then an open answer box for them add additional thoughts. As in the previous study, participants were then asked about the timbre in this passage and to choose all options that they felt applied. The options were: shrill; warm; smooth; thin; rounded; breathy; bright; woody; metallic; harsh; piercing; reedy; strong; flat; resonant and brassy. Following this, there was an option to add any additional comments. The next page once again dealt with aesthetics. Participants were invited to use as many words as required, which were the same as in the previous study. Following this, they were asked to

[8] It was coincidence that both pieces were stylised in capitals.

consider the atmosphere the composer was attempting to create and to choose their aesthetic response.

The ultimate page of the questionnaire asked for participant feedback from a drop-down menu box. The options were very easy; somewhat easy; not very easy; quite difficult and very difficult. Once the participant had clicked 'finish', they were shown a de-brief page which thanked them for taking part in the study and provided an email address for further information.

4.12.4 Strengths and Weaknesses

This survey was not particularly successful in its aims as it failed to reach a wide enough sample. This could be attributed to the ongoing pandemic and a more intricate knowledge being required of how to disseminate the survey to a wider population. This questionnaire did, however, help to determine the path the research would take and helped to clarify the aims of the project going forward. The most effective element of this design was that participants were exposed to experimental music theatre and were able to record their emotional reactions in the moment or after a brief moment of assimilation. The questionnaire also allowed participants the opportunity to express how they felt without being influenced by the researcher.

4.13 Experiment B

A second online questionnaire was commissioned, but with a heavier focus on self-reporting emotional responses. The questionnaire surveyed 36 participants (n = 36)[9], aged between 18 and 65.

[9] Information on gender was not collected.

4.13.1 Research Design

The questionnaire was split into several sections. The first section asked demographic questions, the second asked about pre-study variables which determined the varying types of environments each participant was working in. The third, fourth and fifth sections contained the case study questions and finally the sixth section asked participants about their survey experience.

3.13.2 Participant Recruitment

Participants were recruited in a similar way to the previous questionnaire. A mixture of invitation and snowball methods were once again used to attract a wider sample as possible. 36 participants (*N* = 733) were recruited. This questionnaire saw a particularly high drop-out rate.

4.13.3 Research Procedure

The second questionnaire opened, once again, with the participant information page which pre-emptively thanked them for agreeing to take part. The page explained that the data collected will form part of a doctoral study and how the researcher could be contacted. Participants were informed that the survey should take around thirty minutes to complete and would require careful consideration and listening skills. They were also asked to answer this questionnaire honestly and in full. They were then informed that the information collected would be anonymised, and that they may withdraw at any time. They were informed that data would be stored on University of Plymouth systems, which were secure and could not be accessed by anyone outside of the research team. Finally, there was a note that some works may contain graphic depictions and content warnings were marked in red. Following the consent page, the traditional demographic

questions appeared. It was decided to slightly alter these from previous studies, this time to collect a new set of data. The questions consisted of age, ethnic background and highest academic qualification held. Musical background was measured (Chin and Rickard, 2011) by asking participants to choose one of the following: I play a musical instrument (formal training); I play a musical instrument (no formal training); I am a music researcher; I am a music historian; I have no formal training; I have studied music; I am a composer; I am a singer and other. Another new addition was 'how did you hear about this survey?' allowing for the identification of where participant traffic came from. The next set of questions, as before, aimed to discover whether participants had attended live art performance genres. The options included opera, chamber opera, musical theatre, immersive theatre, straight play, music recital, popular music concert, music theatre, ballet, and other. These were not pre-defined, allowing participants to interpret these themselves, and they could choose as many as necessary. There was also an option to add their own, if required. Next, participants were asked how they would self-describe their aesthetic appreciation for experimental music-driven theatre performance. They were told that 'Aesthetic Appreciation is how we enjoy a stimulus such as an art form and recognise its beauty'. The five options presented to the participants were: I have little aesthetic appreciation because I don't know much about the art form; I have little aesthetic appreciation because I don't like the art form; I have a high aesthetic appreciation because I am highly aware of the art form; I have a high aesthetic appreciation of the art form because I derive pleasure from all art forms, and I have no strong opinion either way.

For this study, it was decided to attempt to identify variables which had not previously been considered. These included, how the participant was feeling, their environment, where they were whilst they completed the questionnaire, and

their heart rate. Time was taken to understand the conditions that participants were in to be able to identify potential distractions or variances in answers. This time, the aim was to emphasise to the participant, that they were about to take part in an important study and that they should be adequately prepared. This questionnaire was also partitioned into three studies.

Study A asked participants to watch *baby you and me girl* (2010). The first question asked how this stimulus made the participant feel. The options were borrowed from the previous questionnaire: admiration; adoration; aesthetic appreciation; amusement; anger; anxiety; awe; awkwardness; annoyance; boredom; calmness; confusion; craving; disgust; empathetic pain; entrancement; excitement; fear; horror; interest; joy; nostalgia; relief; romance; sadness; satisfaction; sexual desire; surprise, and other. Next, participants were asked to describe what they were thinking about while watching the piece. Following this they were asked: Were there any moments within the excerpt which were particularly emotional for them. Further expanding that they should identify if any moments made them laugh, cry or sigh etc. Finally, they were asked to describe how they felt after watching the piece.

Study B revisited *SWEET TOOTH*. When asked, participants were given the following options to select, again as many as they wished. Shivers; tightening of the chest; shallower breathing; increased heart rate; hair standing on end; goosebumps; wincing; tears in the eyes; anxious behaviour (restlessness); crying; lump in the throat; other, and none. Next, participants were asked how the instrumental use in the excerpt made them feel: admiration; adoration; aesthetic appreciation; amusement; anger; anxiety; awe; awkwardness; annoyance; boredom; calmness; confusion; craving; disgust; empathetic pain; entrancement;

excitement; fear; horror; interest; joy; nostalgia; relief; romance; sadness; satisfaction; sexual desire; surprise and other.

4.13.4 Strengths and Weaknesses

This survey was slightly more successful in its aims to demonstrate aesthetic emotional responses from audiences, however, again failed to reach a large enough sample population. The questionnaire lent heavily into the survey of aesthetic emotional responses (like/dislike) rather than psychological responses (sadness/happiness). This is not necessarily a negative observation, rather than something to be aware of and that the self-report method might not be the best for collecting physiological data of this nature. By using open questions, the survey also opened itself up to allow critique of the art works rather than encouraging participants to concentrate on their emotional responses. The survey also spent a significant amount of time evaluating the instrumentation and ensemble's roles of the performance. A further study would need to disregard individual roles and focus on the emotional core of the artworks. There appears to be a fine line between aesthetic and psychological emotion and there is no reason why the former cannot inform and influence the latter and finding a reliable way of surveying this, is yet to be discovered.

The online questionnaires retuned a high drop-out rate. Mildred Pattern acknowledges, questionnaire response rates are often low (2014: 2). Of the 394 page landings to the first questionnaire, only forty-eight participated, with twenty-seven participants dropping out at various points throughout. A certain dropout rate was anticipated due to the nature of some of the provocative material portrayed in the video stimuli, but this felt excessive. It was pragmatic that the quality of answers in this questionnaire was preferred over volume of answers.

Once this survey had ran for three months, it was decided to re-approach the research methodologies and attempt laboratory studies, where individuals would sit for semi-structured, informal one-to-one interviews. This would follow a similar structure to the online questionnaire, but with the researcher as a guide and more facilitated questioning would allow for the collection of more in-depth data on valence and emotional arousal.

4.14 Experiment C - Laboratory Experiments

This process involved inviting participants into a darkened laboratory in simulated theatre-like conditions. The purpose of this study was to allow more probing research into aesthetic responses, and emotional arousal to experimental music theatre stimuli. The study was carried out in four distinct sections.

13 participants (*N* = 19) (6 withdrawals) (*n* = 13) (6 female, 7 male, age range 18-64, *M* age = 33.46 (*S.D.* = -3.12)) were invited to attend the Interdisciplinary Centre for Computer Music Research (ICCMR) Studio which is located in The House building on the University's City Centre Campus.

4.14.1 Recruitment

13 (*N* = 19, *n* = 13) participants were recruited in a similar way for the individual psychological experiments. These were solely recruited primarily from the University of Plymouth staff and student population; a call was placed in staff and student bulletins requesting participation. Once this process was completed, potential participants were asked to visit a webpage in which to apply for the experiments (the page also assigned them with ID numbers). This was presented in the form of a questionnaire similar to those used in previous data collection.

This pre-survey consisted of seven pages[10] which contained easy to answer questions, better utilising time at the beginning of the laboratory experiments.

4.14.2 Design

Although slightly novel in its research design, the investigation was based on traditional psychological and music listening experiments. This included working in a controlled environment with the only variable being the participant themselves. The studio curtains surrounding the walls blocked out natural light. Participants sat in a wicker chair one meter from the screen and speaker installation. The ambient temperature of the studio was around 25 centigrade or above due to the experiments taking place in the summer months. Between each session, windows were opened to reduce the temperature, and increase air circulation in the room. Figures 4.4 and 4.5 demonstrate the prepared the laboratory space.

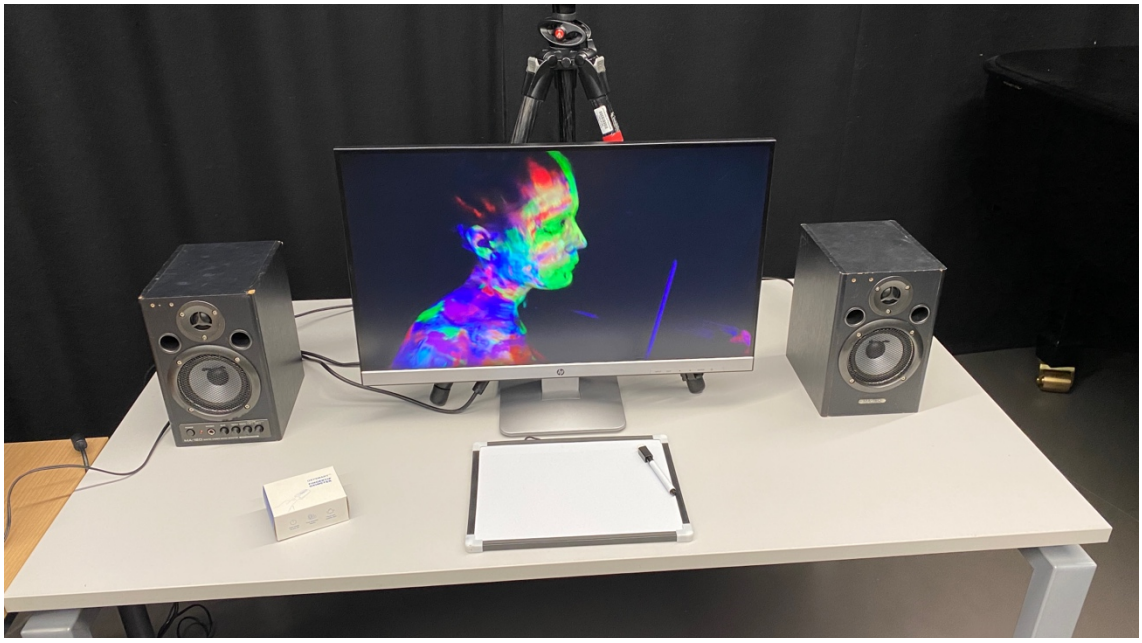


Figure 4.4: Desk layout in front of Participants.

[10] See Appendix A

Figure 4.5: Layout of the Laboratory Space

The researcher sat to the participants' left at a desk controlling the stimuli playback. The camera controls were also remotely worked from the same computer.

Stimuli were observed through a 61x35 (24 inch) Hewlett Packard (HP) screen and sound was played through two loudspeakers (Roland Active). Heart rate (electrocardiogram (ECG)) data was collected using a Viatom Pulse Oximeter (with Bluetooth). This was connected via Bluetooth to an Apple MacBook Pro M1 (2020) notebook using the operating system macOs *Monterey*. Heart rate was monitored live with the manufacturer-supplied software *vihealth,* version 2.30.11 (3). Facial responses were collected using a Canon 550D digital single-lens reflex camera (DSLR) which had enhanced low-light performance. This contained a secure digital memory card, the contents of which was uploaded to the University's One Drive at the end of each data collection day. Due to video

images of participants faces being too dark, later experiments used a light (Aperture MC LED) to more clearly view facial responses.

4.14.3 AESTHEMOS Scale

To enable the creation of data relating to aesthetic emotion, the Aesthetic Emotions Scale (AESTHEMOS) was used (Schindler, Hosoya, Menninghaus, Beermann, Wagner, Eid, and Scherer, 2017). The scale consisted of 42 phrases which can be used to assess 'emotion profiles across different domains, such as music, painting, literature, nature experiences' (Schindler *et al*., 2017: 33). This is the first time this scale will have been tested for use to assess synthesis art such as music theatre. Participants were given each 'emotional feeling' statement and their response recorded by the researcher. This scale was developed and altered to suit the research aims in later experiments.

4.14.4 Research Procedure

Participants were informed that their face would be recorded using a low-light camera throughout the experiment. Participants were also given bottled water and informed that they were allowed a break at any point, all they had to do was raise their hand and the experiment would be paused. They were also told that in the event of a fire alarm, the experiment would be stopped, and we would make our way outside of the building. Once the administrative process had been completed, they were told that the experiment had begun, and an oximeter was attached to their finger and the lights were dimmed, as if a live performance was about to begin. Participants were asked to give a brief account of their background in music and their day-to-day relationship with music. Allowing for laboratory adaption and to allow their heart rate to reach a resting level.

In the main section of the experiment, each participant watched four excerpts of music theatre video, each one twice, the first with the heart rate monitor on their finger, the second viewing, without. Once each performance had finished, the participant was asked if they were ready to answer the questions.

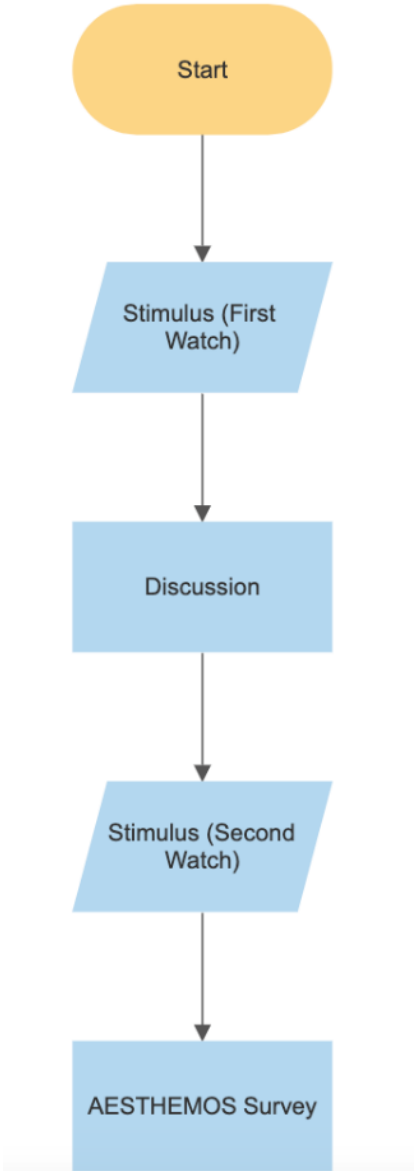


Figure 4.6: Flowchart Showing the Research Procedure.

The first inquiry was general, examining how they felt and what they thought of the piece. Then they were then asked to report if there were any moments which stood out to them emotionally. This could then be cross-checked with the heart-rate data and observation notes. The questions then concentrated on certain moments which were noted in the observation, as they could possibly lead to interesting discussion. There were set questions[11], and additional questions were asked by the researcher, when deemed appropriate. They were asked if their aesthetic appreciation changed following the observation of the stimuli, this then allowed for further discussion. They were also asked whether they would like to know more about the music theatre performance and why. Following this, they were asked to watch the same stimuli again, once this was completed, the participant was given an AESTHEMOS scale to aesthetically evaluate the artwork. This whole process was repeated three more times with different stimuli.

Once the experiment was declared over, they were thanked for their participation and handed a de-brief sheet which contained information available from Black Minds Matter and mental health resources (in relation to the challenging *SWEET TOOTH material*). Again, they were invited to ask any questions.

4.14.5 Strengths and Weaknesses

There were a high number of dropouts due to final examination week and sickness. This indicates that external factors such as academic stress and health issues may have influenced the participants' ability to fully participate in the experiment. Moreover, the experiment was easy to replicate, which adds to its

[11] See Appendix D.

reliability and validity. To ensure the robustness of the findings, the experiment was carried out twice, starting from scratch the second time. This not only strengthens the overall experimental design but also allows for a more comprehensive analysis of the results. By conducting the experiment in a controlled laboratory setting, a more consistent and controlled environment was created. This helps to minimise the impact of extraneous variables that could potentially affect the results. The controlled setting also allows for better control over confounding factors, enhancing the internal validity of the experiment.

However, it is important to acknowledge the weaknesses of this experiment. One significant weakness is the potential for researcher bias and influence. Since the researcher had control over the direction of the conversation and could ask leading or open-ended questions, there is a possibility of influencing the participants' responses. This could lead to biased or inaccurate data. Furthermore, in such controlled conditions, participants may exhibit behaviours that they perceive the researcher is expecting, rather than expressing their genuine feelings or opinions. This introduces the risk of demand characteristics, where participants alter their behaviour to align with perceived expectations, compromising the validity of the results. In conclusion, while the experiment had strengths such as its replicability and controlled environment, it also had weaknesses related to potential researcher bias and demand characteristics. These weaknesses should be considered when interpreting the findings and highlight the importance of further research to address these limitations.

4.15 Experiment D

The final study was created based on previous surveys and development over the course of the research project. The study produced data which captured audiences' aesthetic emotional response to experimental music theatre stimuli. 100 participants (*n* = 100) were recruited from various places both inside the University and some were recruited via the Prolific[12] platform, ensuring answers were not influenced by the researcher. The model for this was based on self-reporting (Armajad, Hohagen, Paton and Rickard, 2017).

> With clear rules for both participants and researchers, Prolific is a valuable alternative to other crowdworking platforms in our view. Prolific benefits from transparency in several ways: On the one hand, subjects know that they are recruited to participate in research. They are aware about expected payments, treatment, rights and obligations in such an environment. On the other hand, researchers have higher transparency about the subject pool than on other platforms, and can screen it in a range of dimensions before inviting subjects (Palan and Schitter, 2017: 26).

This study was highly successful in its return and quality of data returned, in a short amount of time. A combination of tried and tested recruitment methods with a reduction of task expectation and clarity all helped to produce a valid and comprehensive study.

4.15.1 Research Design

Although similar in design to the laboratory experiments, the decision was taken to reduce the AESTHEMOS scale from forty-two emotional statements to twenty-five in order to simplify understanding for the participants and to decrease the answering process time, so that participants had a short window in which to assimilate their thoughts. This also helped to reduce confusion with some of the

[12] Prolific is an online service which helps researchers find suitable participants for their research.

more complex emotions and make the overall process less taxing on participants so that they could spend more energy concentrating on the stimuli presented to them. In this questionnaire, demographic questions were asked at the very end in an attempt to reduce early withdrawals, as participants have already invested their time into the answers (Dobosh, 2017: 1704).

4.15.2 Participant Recruitment

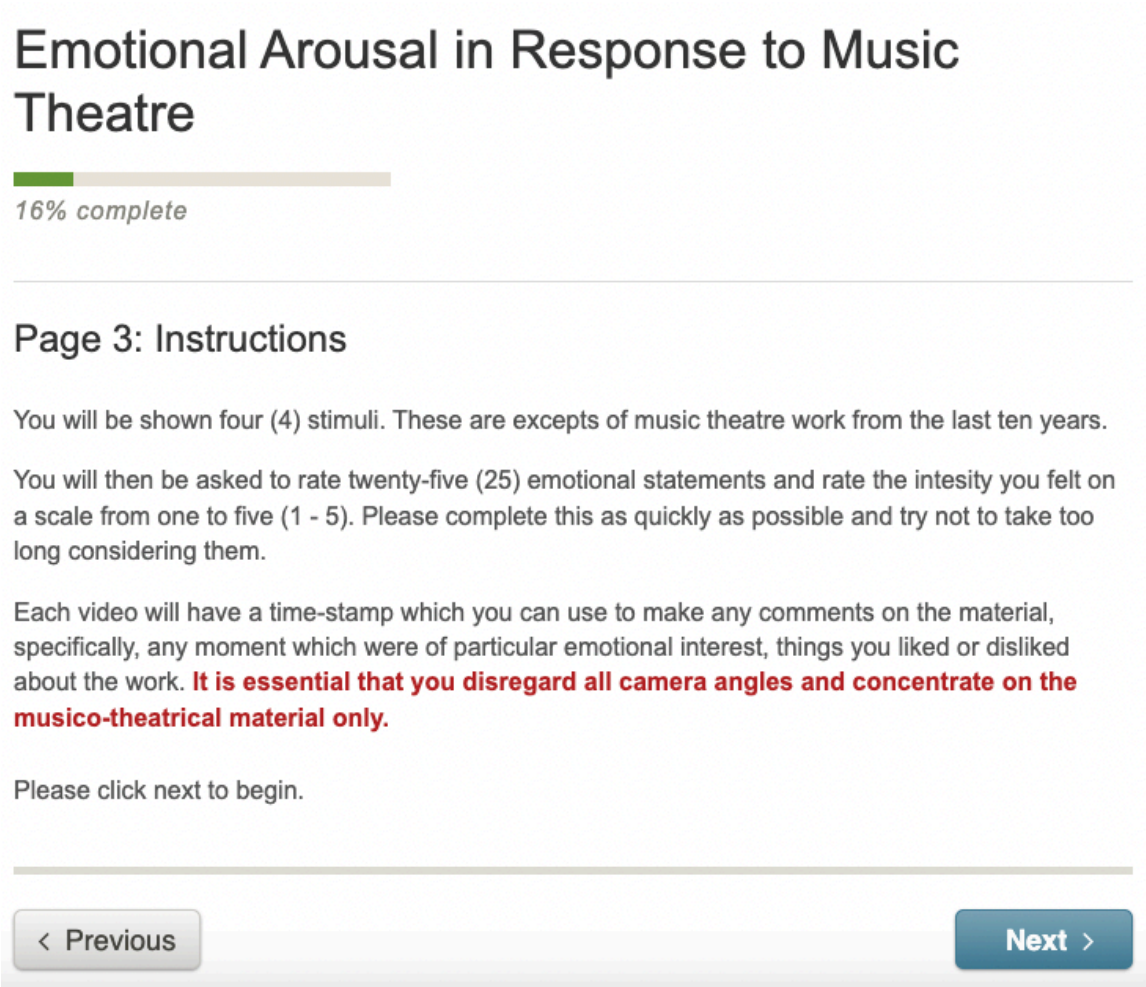
According to Prolific, the average completion time for the questionnaire was around 20 minutes (*M* = 20.15 minutes). Participants were paid around £3-4 for completing the survey. Not all participants were recruited via Prolific, many being recruited by snowball methods, in similar fashion for previous surveys[13]. Many included personal invitation, university bulletins and electronic mailing lists. There were no pre-requisites to completing the questionnaire. A phenomenon occurred where 50% of participants classed themselves as non-musicians and 50% classed themselves as having some musical background. This allowed for two groups of data to be analysed and observations and overall comparisons to be made.

4.15.3 Research Procedure

This final questionnaire asked participants to watch the same four video stimuli as in the laboratory experiments. They were then asked to respond to twenty-five questions based on the AESTHEMOS scale (Schindler *et al.*, 2017). They were asked to briefly describe how the work made them feel, and once this had been completed, they were asked four demographic questions including age; ethnic

[13] Only 65 participants were paid for their participation. Those recruited outside of Prolific were not paid.

background; gender identity; highest qualification held and musical background (Chin and Rickard, 2011). The final question asked participants to report how they used music on a quotidian basis, such as specified music-listening time or while working. Figure 4.7 demonstrates the research procedure as shown to participants on the questionnaire.



Emotional Arousal in Response to Music Theatre

16% complete

Page 3: Instructions

You will be shown four (4) stimuli. These are excepts of music theatre work from the last ten years.

You will then be asked to rate twenty-five (25) emotional statements and rate the intesity you felt on a scale from one to five (1 - 5). Please complete this as quickly as possible and try not to take too long considering them.

Each video will have a time-stamp which you can use to make any comments on the material, specifically, any moment which were of particular emotional interest, things you liked or disliked about the work. **It is essential that you disregard all camera angles and concentrate on the musico-theatrical material only.**

Please click next to begin.

< Previous

Next >

Figure 4.7: Research Procedure Explanation in Context.

Page 5: Response S1

This part of the survey uses a table of questions, view as separate questions instead?

2. Please rate the intensity you felt each of the aesthetic emotions below: * *Required*

Please don't select more than 1 answer(s) per row.

Please select at least 25 answer(s).

Please don't select more than 25 answer(s) in any single column.

	1 - Not felt at all	2 - Felt, but very little	3 - Felt, moderately	4 - Felt, very strongly	5 - Felt, an overwhelming amount
It was beautiful	☐	☐	☐	☐	☐
I was challenged intellectually	☐	☐	☐	☐	☐
I was delighted	☐	☐	☐	☐	☐
I was calmed	☐	☐	☐	☐	☐
I was curious	☐	☐	☐	☐	☐
I liked it	☐	☐	☐	☐	☐
It fascinated me	☐	☐	☐	☐	☐
It made me feel something wonderful	☐	☐	☐	☐	☐
I felt invigorated	☐	☐	☐	☐	☐
I was baffled	☐	☐	☐	☐	☐
It was ugly	☐	☐	☐	☐	☐
I was moved	☐	☐	☐	☐	☐
It was sad	☐	☐	☐	☐	☐
I felt energised	☐	☐	☐	☐	☐
It made me angry	☐	☐	☐	☐	☐
It bored me	☐	☐	☐	☐	☐
It relaxed me	☐	☐	☐	☐	☐
It amused me	☐	☐	☐	☐	☐
It made me aggressive	☐	☐	☐	☐	☐
It surprised me	☐	☐	☐	☐	☐
It touched me	☐	☐	☐	☐	☐
It unsettled me	☐	☐	☐	☐	☐
It motivated me	☐	☐	☐	☐	☐
I was in awe	☐	☐	☐	☐	☐
It made me smile	☐	☐	☐	☐	☐

Figure 4.8: AESTHEMOS test in Context.

4.15.4 Strengths and Weaknesses

This experiment proved to be the most productive in terms of reach and quality of data. Although this study was limited in its aims, it produced data from a much wider sample which reached new participants outside of the university population. It may have been beneficial to survey participant perception of the overall art form; however, this was not the focus of this study. This tried and tested method has reached its limits while evaluating aesthetic emotions in music theatre, and there appears to be little room for further development without constant recapitulation.

4.16 Conclusions

This chapter has explained how the selected research tools have been chosen and applied in this body of research. A pragmatist approach was chosen so as not to limit the options and to collect both quantitative and qualitative research data. This chapter has discussed the use of a grounded theory, the use of mixed methods approach and how qualitative and quantitative data was collected. The research tools selected for this study questionnaire, interview and observation were bound by an interpretivist approach, their strengths and weaknesses have been identified and evaluated.

Overall, the research methods were appropriate for this type of research. A mixed-methods approach which bridges the gap between music psychology and artistic-appreciation methods can be combined to answer the research questions. The strengths of the methodology allow for participants to self-report their emotional and aesthetic responses to music theatre. Weaknesses demonstrate that participants may not fully realise or reveal their true emotional responses due to cultural pressure or due to a lack of appropriate lexicon.

Overcoming these potential barriers can be seen as challenging, but efforts to engage with participants in an honest and empathetic manner are of great importance. The nature of the experimental performance work has the possibility to evoke varying emotions, therefore the safety of the researcher must be considered. Participants may share personal information and being aware of this must remain priority. Ethical considerations have been approved by the Faculty Ethics Committee. The results and findings of all the experiments are discussed in the following chapter.

Chapter Five

Results

5.1 Introduction

This research aimed to discover to what extent audiences responded emotionally to experimental music theatre stimuli, and whether contemporary audiences perceive music theatre as an appropriate tool for communicating artistic concepts. 197 participants were recruited across four experiments (Experiment A (*n* = 48), Experiment B (*n* = 36), Experiment C (*n* = 13), and Experiment D (*n* = 100)) to determine the levels of emotional response to experimental music theatre stimuli. These surveys included three online questionnaires and one laboratory study for observation, heart rate monitoring and discussion. These experiments were designed to demonstrate the extent of emotional arousal in response to experimental music theatre performance and measure aesthetic appreciation. The research methods were informed by music-psychological experiments and measures of artistic aesthetics. This study was conceived to address the gap of a lack of current academic literature measuring emotional response to experimental music theatre. These results aim to contribute to the psychological understanding of how audiences perceive experimental music performance.

This chapter will demonstrate the outcome of results realised research. The results are presented in four sections. Two online questionnaire surveys, which took place between Spring 2021 and Autumn 2021 and a set of laboratory experiments which took place in May 2022 and finally, an online questionnaire which ran in early 2023. The results are split into to four sections, to represent

the four surveys (Experiment A (5.2), Experiment B (5.3), Experiment C (5.4) and finally Experiment D (5.5).

5.2 Pilot Questionnaire (Experiment A)

The proof-of-concept study was to initially test the hypothesis that music theatre is inadvertently alienating to non-familiar audiences, whether this is due to its complex musical language and perceived associations with opera and Broadway/West End musical theatre. 48 (*n* = 48) participants were recruited (aged 18-74). (*M age* = 44) (*S.D.* = -2.77). The questionnaire was completed using participants' own devices in their homes or workplaces. Table 5.1 uses the following equation to calculate the mean age.

$$\bar{x} = \frac{\sum(f \cdot Xm)}{\sum f}$$

Age Bracket	f	Xm	$f \cdot Xm$	$\bar{x}$	$(m \cdot \bar{x})$	$(m \cdot \overline{x^2})$	$f(m \cdot \overline{x^2})$
18-24	9	21	189	36.76	-15.76	248.3776	-141.84
25-34	17	29.5	501.5	36.76	-7.26	52.7076	-123.42
35-54	13	44.5	578.5	36.76	7.74	59.9076	100.62
55-64	6	59.5	357	36.76	22.74	517.1076	136.44
65-74	3	46.3	138.9	36.76	9.54	91.0116	28.62
74+	0	0	0	36.76	-36.76	1351.2976	0

Table 5.1: Age range of Participants with Statistical Breakdown.

All participants held an academic qualification above GCSE. 14 (29.2%) participants reported that they did not play a musical instrument. All participants reported that they had already seen several types of music-driven theatre (MTD)

(Figure 5.2) the most common being popular music concerts (14.4%) and musical theatre (13.1%).

MDT Genre	***f***
Opera	32
Chamber Opera	18
Musical Theatre	40
Immersive Theatre	25
Straight Play	37
Music Recital	38
Popular Music Concert	44
Music Theatre	33
Ballet	34
Other	5

Table 5.2: Previous Attendance of Performance Genres.

None of these options were pre-defined, inviting interpretation from the participants themselves. All participants had sufficient knowledge of what it is like to observe live performance of some description. The most attended performance art was popular music concert. Five participants answered ‘other’. One participant observed online performances during the ‘COVID year’ (presumably 2020) which they considered a new type of performance genre. Other answers included ‘folk/ethnic performance’ (PID: 73424210) and ‘free form/experimental/poetry performance’ (PID: 74026331). Following this, participants were asked for their understanding of the term ‘orchestration’. Most participants indicated towards the

most accurate answers, these being ‘the way the instruments are employed in order to perform a piece of music’ and ‘the combination of instruments used in a piece of music’. Only one participant was unsure and did not attempt a contextual guess.

5.2.1 Case Study A

A majority of participants reported that they were able to identify key themes in the work while observing Stimuli 1. Many spoke of pain, suffering and emotional turmoil. Many suggested that the music evoked feelings of oppression, fear, and desperation. Some suggested that the sonic landscape evolved as a result of a clash of culture and that there was a distinct sense of absolute destruction of human dignity and volition. Some participants realised the saxophone as a depiction of a slave owner, verbally assaulting and that it felt post-human contributing to the overall diaspora. Overall, the discourse centred around similar themes, this could be attributed to the pre-determined context provided to the participants. Figure 5.1 demonstrates a word cloud (Hayes, 2021: 332) created to highlight the most frequent words used by participants, this word cloud only includes words which were mentioned more than twice and with prepositions filtered out, for clarity.

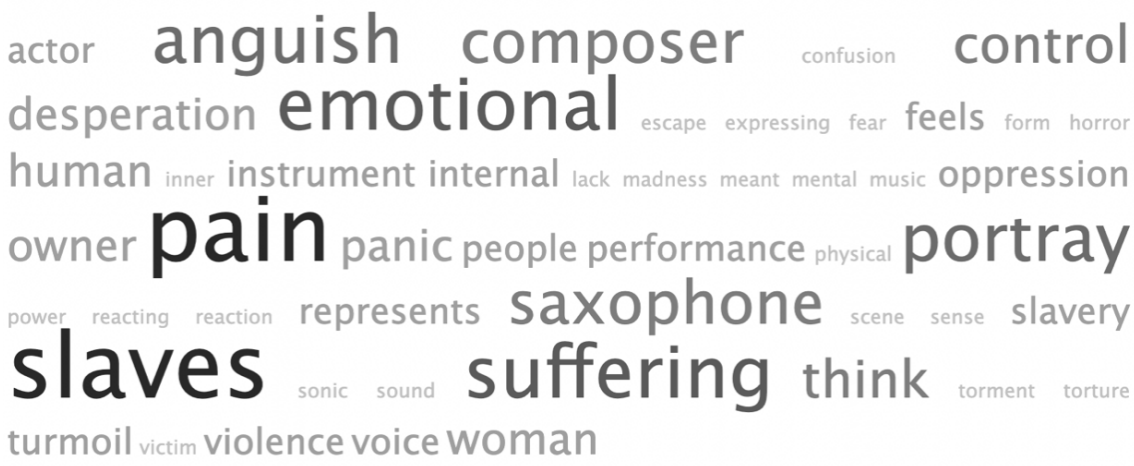


Figure 5.1: Word Cloud demonstrating Highest Word Frequencies in Response to Stimulus 1.

When asked about their perceptions of the relationship between instrument and performer, most decided that the saxophone could be seen as an oppressor and the performer (Mitchener) as a 'victim' (Figure 5.2), while others saw them as collaborating or in dialogue. The saxophone was often seen as a complex mix, representing the voice or emotions of the performer, imitation, mockery, or torture. Participants agreed, for the most part, that there was a sense of aggression or tension in the relationship between the two.

Figure 5.2: Mitchener and Yard lock eyes during performance of *SWEET TOOTH* (Mitchener, 2018: 20:21).

Participants were then asked to reflect on how effective (this was not defined further), they felt the orchestrations were in this excerpt. The majority (92.5%) described the orchestration as effective and agreed that it helped to conjure an

image in the mind. One participant argued that it was not effective and was un-emotive and one reported that they were unsure. One noted that watching the excerpt made them feel uncomfortable and they wished they could cut it short, noting that the slaves could not (cut it short) and were trapped in 'it'. Another participant commented that the piece was 'brilliantly done' and that it was 'unsettling and unexpected'. Participants collectively agreed that the timbre created was harsh, piercing, shrill and strong. Some elaborated further on their emotions, noting that the music was not accessible for all, and that it was difficult to listen to. They argued that it conveyed the painful experience of slavery with high artistic integrity.

A majority of participants described that the aesthetics of Stimuli 2 created a sense of tension, despair, and anger. Participants found the use of extended techniques and changing dynamics created fear and confusion. The breathiness of the performer and physicality of Mitchener's character suggested being bound or constrained. Some found the performance haunting and unsettling. Others were distracted by the musicians being somewhat disengaged from the performer in this excerpt. The third and final stimulus of this section allowed participants to report their felt emotions. Although there was a wide range of reported emotions, the most significant include: 10.2% reported feeling empathetic pain, and 9% reported feeling fear and 9.6% reported that they felt anxious.

5.2.2 Case Study B

Participants reported that they were not able to connect emotionally as well with stimuli 3 and 4. Some participants were able to recognise the movement of performers and the theme of togetherness. Others found it difficult to discern what was happening and what the piece was about. Some were able to identify that

instruments were used to convey different personalities and emotions, with each instrument having its own sound and technique. A few described that this may represent a chaotic group or family, or individuals in a conversation or argument, and that the instruments may also embody the performer and their relationship with the instrument. The overall consensus was that a sense of family was identifiable, even if at times there was 'dysfunction' in the music. Many participants cited that there was an idea of 'speaking' or 'chitter-chatter' as if debating or part of a crowd. Some participants could not identify a link between movement and family, stating that they did not clearly portray family, or that the movement looked odd. Just under half of participants (37.5%) agreed that there was a 'distinct sense of family', while 45.8% noted that they were not sure. 11 participants left additional comments, with one participant commenting on the fact that they felt that the music theatre initially portrayed a sense of 'family' in relation to the refugee crisis. However, as they observed the second stimulus, they considered the 'instrumental families' such as strings or percussion. There were no notable responses when asked about timbre, but notable that a majority of participants chose words such as harsh, strong, or piercing as a main descriptor. One participant stated that they could not connect emotionally to this material in the same way they did with the *SWEET TOOTH* stimuli, with a comment regarding a lack of contextual knowledge supporting this. 'This didn't connect with me emotionally at all. Unlike the sweet tooth extracts - i've [*sic*] never seen either in full' (PID: 75220196). When asked about how the instruments added to the overall aesthetic of the piece (not defined), most participants answered that there was a sense of tension and danger, although they felt ambivalent about what was happening. Many participants described the atmosphere as frightening, the experimental nature of the music had a sense of urgency, perceptibly stirring

feelings within the participants. The answers in response to this stimulus (Stimulus 3) indicate that the music theatre work failed to capture their imagination as much as the previous example did. Overall, participants were left confused, with one person reporting they felt disgust. One left a comment, stating that they expected some kind of climax, which was not included in the video excerpts.

5.2.3 Experiment Conclusions

There is evidence to demonstrate that the different ways in which people can interpret the same piece of music theatre where context has been provided, which can be influenced by experience and background. Of the two pieces surveyed, *SWEET TOOTH* appeared to connect with participants more intensely than *BRETHREN.* Participants were able to quickly identify Mitchener's vision and emotions and reported feeling strong emotions in response to the work. *BRETHREN* was an example of a more abstract and representational work which offered a clear juxtaposition which audiences could not to fully connect with.

5.3 Experiment B – Online Questionnaire

This experiment was designed to test whether audiences recognised aesthetic beauty, and whether they were able to effectively self-report their emotional reactions to aesthetically challenging stimuli. 36 (n = 36) participants reported their age (*M age* = 41.51) (*S.D.* = 3.75), with the majority (30.6%) being in the 35-44 bracket. 94.3% of participants were white (69% English, Welsh, Scottish, Northern Irish, or British), (3.4% Irish), (27.6% Other White background) and 5.7% were Asian or British Asian (100% Other Asian Background). Table 5.3 demonstrates the calculations for mean ages and standard deviation.

Age Bracket	f	Xm	$f \cdot Xm$	$\bar{x}$	$(m \cdot \bar{x})$	$(m \cdot \overline{x^2})$	$f(m \cdot \overline{x^2})$
18-24	3	21	63	36.76	-15.76	248.3776	-47.28
25-34	9	29.5	265.5	36.76	-7.26	52.7076	-65.34
35-44	11	39.5	434.5	36.76	2.74	7.5076	30.14
45-54	5	49.5	247.5	36.76	12.74	162.3076	63.7
55-64	7	59.5	416.5	36.76	22.74	517.1076	159.18
65-70	1	67.5	67.5	36.76	30.74	944.9476	30.74

Table 5.3: Age Range of Participants.

Participants were asked to report the highest qualification they held, and all reported that they had some academic qualification above BTEC (Level 1). Participants were then asked about their musical backgrounds. 30.6% reported that they had received no formal training in music, while 69.4% identified some relation to music. A majority of participants reported that they had attended some form of music performance (Figure 5.4), with the most common answer being popular music (88.9%) with musical theatre (83.3%) the second most popular.

MTD	f
Opera	19
Chamber Opera	12
Musical Theatre	30
Immersive Theatre	13
Straight Play	27

Music Recital	24
Popular Music	32
Concert	29
Experimental Music Theatre	14
Ballet	21
Other	3

Table 5.4: Frequency of Attendance of Performance Genres.

All participants responded to this question, which demonstrated that the whole sample knew what it was to experience performance art in some way. This also indicated that there was a knowledge of the broad range of performance art available. When asked to report current variables in their environment, all participants reported that they were comfortable. 75% of participants were completing the questionnaire at home and 25% were at work. 44.4% were sat at a desk, 16.7% were sat in bed, 36.1% were sat on a settee or sofa and one participant reported that there was a cat with them on a chair. Participants completed the survey at differing times of the day from their own devices. 25% late afternoon, 22.2.% early afternoon, 19.4% in the evening, 16.7% at night-time, 11.1% mid-morning and 5.6% early morning. This data demonstrates that there was an inconstant environment and a significant variance between how and when the survey was completed.

5.3.1 Study A: The Emotional

The first stimulus was of a music theatre performance of *baby you and me girl....* (2010) (Stimulus 1). Participants were not told what the piece was about,

however, they were told the title of the work. Participants were asked to be aware of the overall aesthetic, the instrumental combination contribution to the piece, and how it made them feel.

When asked to select emotional variables, the sample reported a wide range of emotional responses. However, significant selections of awkwardness, boredom, confusion, and annoyance were the most frequently selected. Table 5.5 identifies the frequency in responses to each aesthetic emotion:

Variable Emotion (VE)	***f***	**Variable Emotion (VE)**	***f***
Admiration	0	Confusion	12
Adoration	1	Craving	0
Aesthetic Appreciation	3	Disgust	3
Amusement	11	Empathetic pain	2
Anger	2	Entrancement	5
Anxiety	6	Excitement	4
Awe	0	Fear	3
Awkwardness	17	Horror	1
Boredom	13	Interest	9
Calmness	1	Joy	1
Sexual desire	2	Annoyance	12
Surprise	5	Nostalgia	1
Sadness	3	Relief	1
Satisfaction	0	Romance	1
Other	4		

Table 5.5: Reported Emotions for Stimuli 1.

A valence arousal (based on the Russell, 1980 model) diagram was created (Figure 5.3) to demonstrate levels of emotional arousal in response to stimuli. Participants achieved strong, high negative arousal while observing this stimulus.

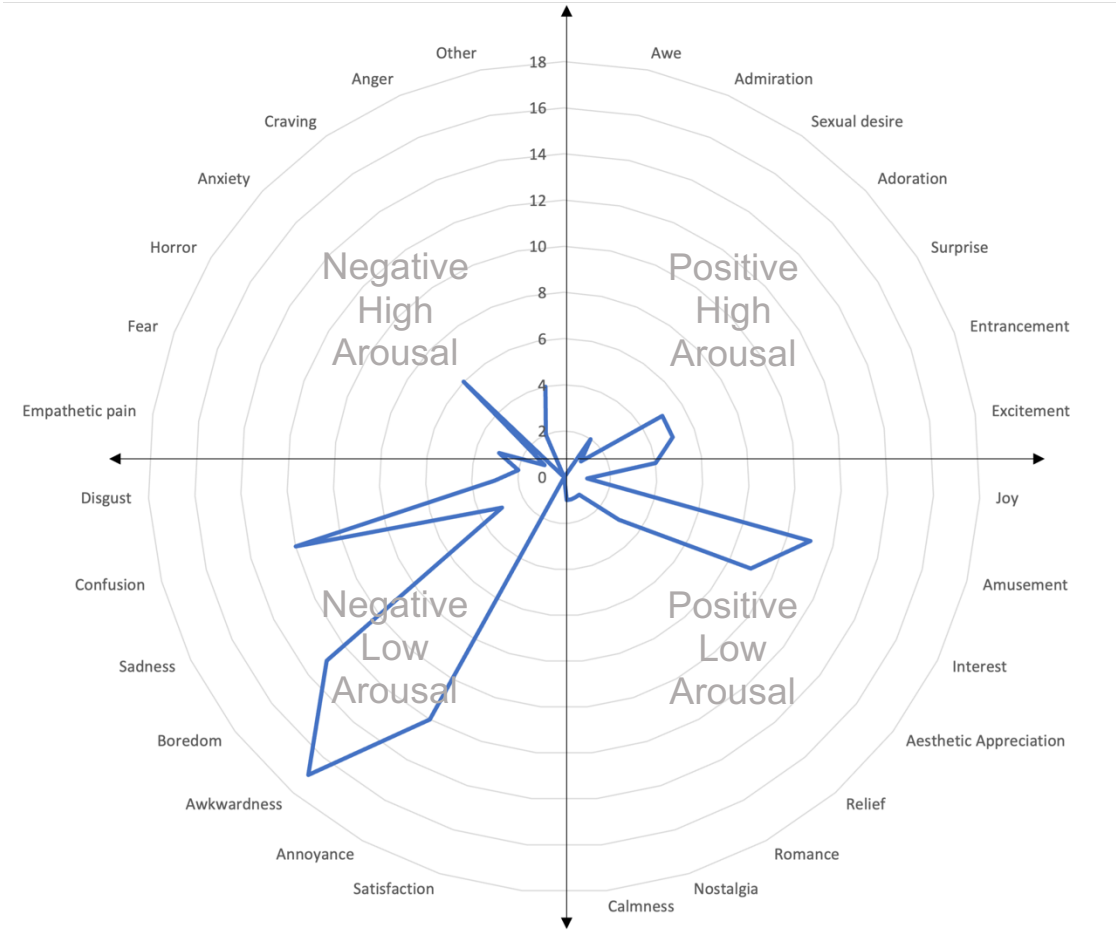


Figure 5.3: Valence-Arousal while Observing Stimulus 1.

Many reported that they felt some form of Aesthetic Appreciation, which could suggest that the piece stirred some-kind of artistic admiration. Four participants reported further emotion including apathy, and one stated that they 'found it disturbing and unsettling'.

Participants reported on what they were thinking while watching the piece. There was a wide range of answers presented here. Word cloud (Figure 5.4)

demonstrates the most frequent references with words that were mentioned more than twice, prepositions were filtered out for clarity. There was a significant mention of the word ‘indulgence’ and many mentions of wanting the piece to end.

Figure 5.4: Word Cloud demonstrating highest word frequencies in response to Stimulus 1.

When asked if they could identify any moments which were particularly emotional to them, participants reported amusement, sadness, discomfort, confusion, and annoyance. The inhalation of a microphone, sexual vocalisations, and hitting of the neck elicited the strongest emotional responses. Many participants indicated that they felt there were sexual connotations to these actions with many finding it immature or of poor taste. One reported that they wanted to like work such as this but were left with the impression that it is simply ego-gratifying indulgence of the performer. Many participants stated that they were relieved that the excerpt was over and that many had been left with confusion, fatigue, and some slightly agitated. A small number of participants stated that they were curious to know more about the piece.

5.3.2 Study B: The Physical

In the second part of experiment, participants were asked to watch an extended stimuli of music theatre work composed by Elaine Mitchener (2018). Context was withheld but for the title. Participants were asked to self-report any involuntary effects the piece had on them. A majority reported that they felt no physical effect (MECs) on their body while watching the piece (38.9%). Six participants (16.7%) reported that they jumped when they heard the off-stage 'thuds'. Table 5.6 identifies the frequency in responses to each aesthetic emotion:

Variable Emotion (VE)	***f***
Shivers	6
Tightening of the Chest	4
Shallower Breathing	6
Increased Heart rate	6
Hair standing on end	1
Goosebumps	1
Wincing	8
Tears in the eyes	0
Anxious behaviour (restlessness)	10
Crying	0
Lump in the throat	3
Other	6
None	14

Table 5.6: Physical Effects felt in Response to Stimulus 2.

This data in Table 5.6 suggests that the work was not able to stimulate psychophysical arousal in most participants. However, there is evidence presented that there was some form of emotional arousal in others, but it could not be demonstrated as to what extent. When asked to describe how the instruments in the piece made them feel, participants gave unanticipated answers. Many reported that their interest piqued at this point, although there was a wide selection of answers. Table 5.7 identifies the frequency in responses to each aesthetic emotion:

Variable Emotion (VE)	***f***	**Variable Emotion (VE)**	***f***
Admiration	1	Excitement	2
Adoration	0	Fear	7
Aesthetic Appreciation	7	Horror	3
Amusement	0	Interest	16
Anger	2	Joy	0
Anxiety	5	Annoyance	0
Awe	2	Nostalgia	2
Awkwardness	2	Relief	1
Boredom	4	Romance	0
Calmness	5	Sadness	4
Confusion	2	Satisfaction	2
Craving	1	Sexual desire	2
Disgust	1	Surprise	5
Empathetic pain	6	Entrancement	4
Other	4		

Table 5.7: Emotional Reponses to Instruments in Stimuli 2.

A valence-arousal (based on the Russell, 1980 model) diagram was created (Figure 5.5) to demonstrate levels of emotional arousal in response to stimuli. Participants achieved a much stronger, low positive valence arousal while observing this stimulus.

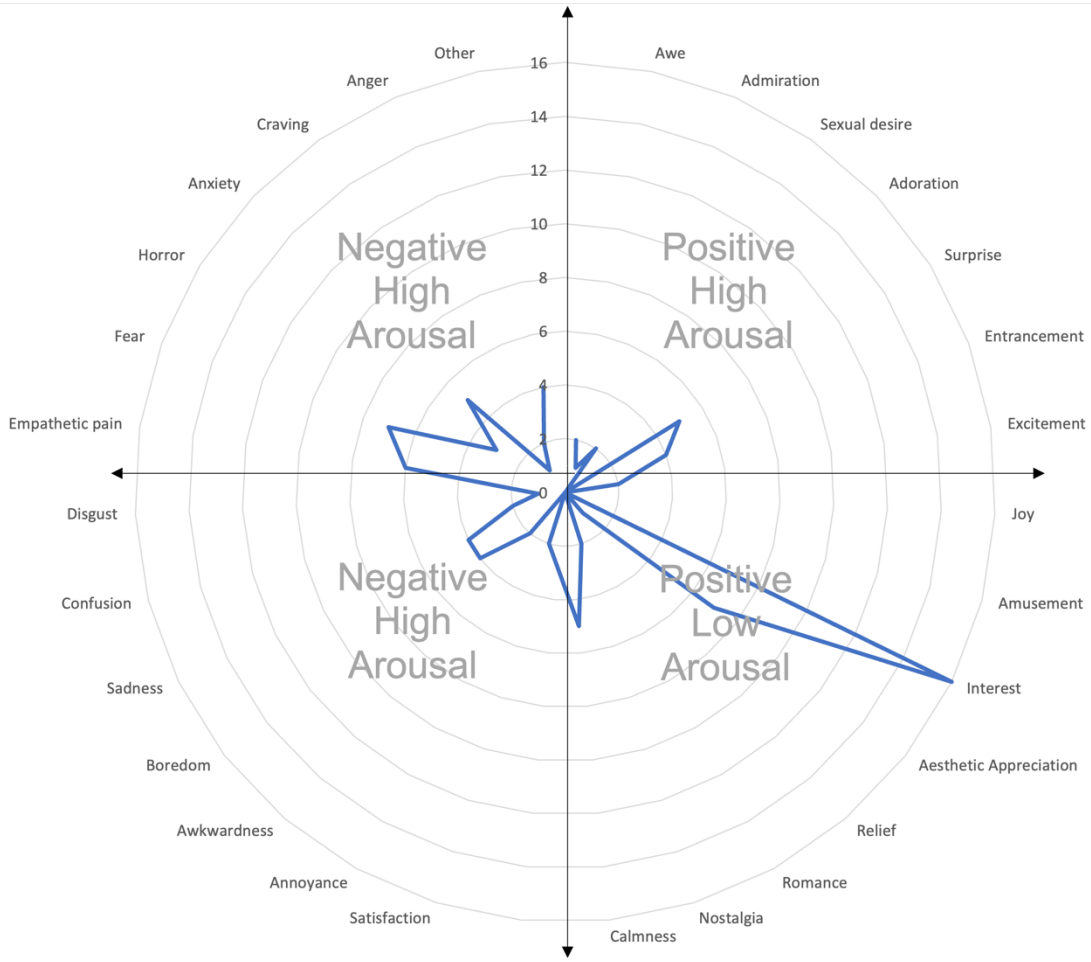


Figure 5.5: Valence-Arousal in Response Stimulus 2.

Four participants offered additional information, this included that they felt discomfort, and that it was ‘noisy’. One participant reported aesthetic appreciation for the canes, noting the breathing [from the performers] of a ‘person getting

whipped' which had a greater emotional impact, awe, disgust, awkwardness, empathetic pain, and horror.

When asked about the instrumental ensemble's role in the performance, they gave varying answers. Many participants felt that the piece was attempting to convey emotional suffering, to add tension, and enhance the drama. Some felt that the soundscape demonstrated the anguish of mental health issues and existed to impose the emotions of the performer onto the audience. Participants also felt that the instruments contributed to a heightened tension alongside the vocalist and that the ensemble added dissonance, created a sense of chaos, and highlights depiction of intimidation or violence. Participants felt that the presence of instrumentalists affected the aesthetic perception of a work, but not necessarily the value placed on it. Some found their presence distracting, while others appreciated the music-making and the emotional investment it contributed. Overall, participants agreed that their presence can modify the meaning of the performance. It was clear that most had felt some higher aesthetic emotional response when being able to see the performers, whether positive or negative. When asked whether aesthetic appreciation had altered after watching these excerpts, most participants (30.6%) indicated that their appreciation had stayed the same and 27.8% reported that they felt they had a greater appreciation for the art form than when they began the questionnaire. 25% decided that they still did not fully appreciate the art form and 16.7% reported that they were not sure.

5.3.3 Study C: The Psychological

In this experiment, participants were asked to watch an extended except of music theatre work (Stimulus 4). They were not told what the piece was about, other

than the title, *KISSING THE SHOTGUN GOODNIGHT*. This section only consisted of one stimulus (Stimulus 4).

When asked about aesthetics created by the instruments a majority of participants (58.3%) reported that they felt a sense of tension. Participants were asked to judge their emotion within the music. There was a consensus of impending doom, anxiety, anger, and tension. Participants felt that the instrumental performers affected emotional responses by emphasising certain notes or phrases, as they felt that expression affects arousal of emotions. Some respondents did not notice or were not affected by the emphasis. One participant felt that the instrumental performers deepened their emotional response and connection to the piece, while another felt that the instrumental additions were a distraction. Following the observation of the stimulus, 41.7% reported that their mood had improved, with 33.3% observing that it had stayed the same and 25% reporting that it had decreased. When asked to describe why they had chosen their answer, some linked it to their own past experiences. Generally, there were varied emotions in response to this stimulus. Some were left feeling empowered, stimulated, or energised, while others felt anxious, depressed, or bored. Some felt that the short duration of the video and the fact that it was part of a survey limited their emotional response, while others felt that seeing the performance live would perhaps have a greater impact. The music was described as having structure, coherence, and a pounding beat, with some likening it to heavy metal or movie soundtracks. When asked about the music and orchestration of the work, participants noted that the combination of violin and guitar was effective, with the amplified violin adding tension to the music. The distorted guitar texture and chord structure were also memorable. Some found the music calming or

engaging, while others found it boring or wanted it to end. This stimulus appeared to elicit a stronger emotional and aesthetic response in a majority of participants.

Finally, participants were asked to describe their aesthetic appreciation for music-driven theatre once they had completed all the tasks. The majority (44.4%) reported that they felt their appreciation had stayed the same, whilst 36.1% reported that they were more knowledgeable. 16.7% stated that their appreciation had increased and 2.8% stated that it had decreased.

5.3.3 Experiment Conclusions

Overall, all three pieces elicited emotional responses in participants. The music theatre work demonstrated also piqued interest. Evidence from this survey demonstrated that with more context, participants were able to form stronger emotional decisions about the work and to report emotional responses carefully. Music Theatre stimuli has demonstrated an ability to elicit strong positive and negative valence arousal in participants.

5.4 Experiment C – Laboratory Studies

This experiment was designed to examine audience emotional responses to observed music theatre in a controlled, laboratory-type environment, which resembled theatrical conditions (*i.e.,* darkened room with curtains). These experiments intended to test the hypothesis that audiences became emotionally disengaged with music theatre because of a lack of aesthetic appreciation. 13 participants (n = 13) (N = 19) (7 Male, 6 Female) ((Aged 18-70 M = 38.15, $S.D.$= -3.12) attended laboratory sessions at the university campus. Table 5.8 demonstrates the calculations used to find mean age and standard deviation:

Age Bracket	f	Xm	$f \cdot Xm$	$\bar{x}$	$(m \cdot \bar{x})$	$(m \cdot \overline{x^2})$	$f(m \cdot \overline{x^2})$
18-24	3	21	63	36.76	-15.76	248.3776	-47.28
25-34	4	29.5	118	36.76	-7.26	52.7076	-29.04
35-44	1	44.5	44.5	36.76	7.74	59.9076	7.74
45-54	3	59.5	178.5	36.76	22.74	517.1076	68.22
55-64	1	46.3	46.3	36.76	9.54	91.0116	9.54
65-70	1	0	0	36.76	-36.76	1351.2976	-36.76

Table 5.8: Age range of participants.

Participants were mostly of White ethnic background (84.6%), with 7.7% from Mixed or Multiple ethnic groups and 7.7% from Asian or Asian British backgrounds. Table 5.9 demonstrates that participants had an academic qualification above a BTEC qualification.

Academic Qualification	f
A2 Level (Adv. GCE)	3
BTEC	1
BSc Degree	1
PGCE	1
MA Degree	2
MRes Degree	1
PhD/DPhil Degree	3
Other (RSA Dip)	1

Table 5.9: Qualifications of Participants

Table 5.10 demonstrates that all participants reported that they had experienced some form of live performance genre:

MDT	***f***
Opera	7
Chamber Opera	5
Musical Theatre	13
Immersive Theatre	5
Straight Play	12
Music Recital	11
Popular Music	11
Concert	9
Experimental Music Theatre	6

Table 5.10: Frequency of Attendance of Performance Genres.

Table 5.11 demonstrates that 30.8% of participants reported that they had received no formal musical training, with 69.2% reporting that they had some relationship with music.

Frequency	***f***
I play a musical instrument (formal training)	2
I play a musical instrument (no formal training)	0

I am a music researcher	2
I am a music historian	0
I have no formal training	4
I have studied music	1
I am a composer	1
I am a singer	2
Other	1

Table 5.11: Frequency of Musical Experience.

5.4.1 Heart Rate Variability

Results produced by variable heart rate monitoring demonstrated that there were no significant changes in average variable heart rate stimulus to stimulus throughout the experiment (resting *M* = 79.38 bpm). There were minor increases and decreases between stimuli, with one or two anomalies (Table 5.12). Stimulus 2 was the most energetic in terms of tempo, and demonstrated some increase in heart rate, but only amongst a small number of participants. Table 5.12 demonstrates the rate of increase and decrease of resting heart rate to the stimuli. Figure 5.13 Shows that participants' heart rates decreased as the experiment progressed, with only a slight spike while observing the second stimulus. Participant 95999092 demonstrated excessive heart rate, which could be indicative of tachycardia (Heart.org). This could be attributed to prescription medication the participant reported taking (Methylphenidate, 25mg). Methylphenidate is a stimulant which is indicated for medicinal intervention for

Attention Deficit Hyperactivity Disorder (ADHD) (NICE, 2018), (Methylphenidate Adult ADHD, 2021). This anomaly is marked with an asterisks in Table 5.12.

Participant		Var (bpm)					*M*	*S.D.*
		R	S1	S2	S3	S4		
1	93884052	70	74	83	76	79	76.4	4.9
2	93887114	62	62	64	60	60	61.6	1.6
3	94674715	70	70	69	66	62	67.4	3.4
4	92209217	91	91	88	82	83	87	4.3
5	94201342	69	69	68	66	64	67.2	2.1
6	94279699	76	76	78	76	74	76	1.4
7	95848404	63	63	63	61	61	62.2	1.09
8	95997589	72	72	69	66	64	68.6	3.5
9	93197434	70	70	67	66	64	67.4	2.6
10	95999092	103	103	91	84	80	92.2	10.6
11	95798062	98	98	100	100	93	97.8	2.8
12	95798130	67	67	70	65	64	66.6	2.3
13	96327863*	121	118	116	115	114	116.8	2.7

Table 5.12: Average Variable heart rates in response to stimuli.

Table 5.13 demonstrates the variances in heart rate with more clarity.

Participant		Var (bpm) Variance				
		R	S1	S2	S3	S4
1	93884052	+4	+13	+6	+9	+4
2	93887114	62	-**	+2	-2	-2

3	94674715	70	-	-1	-4	-8
4	92209217	91	-	-3	-9	-8
5	94201342	69	-	-1	-3	-5
6	94279699	76	-	+2	-	-2
7	95848404	63	-	-	-2	-2
8	95997589	72	-	-3	-6	-8
9	93197434	70	-	-3	-4	-6
10	95999092	103	-	-12	-19	-23
11	95798062	98	-	+2	+2	-5
12	95798130	67	-	-4	-2	-3
13	96327863*	121	-3	-5	-6	-7

Table 5.13: Average Variable heart rate variation in response to stimuli -/+ bpm, **indicates no change.

A repeated-measures analysis of variance (ANOVA) test confirmed that there was no major statistical significance between participants (F4 = 0.29) (p>0.05). Figure 5.6 shows the decline in heart rates as the experiments progressed.

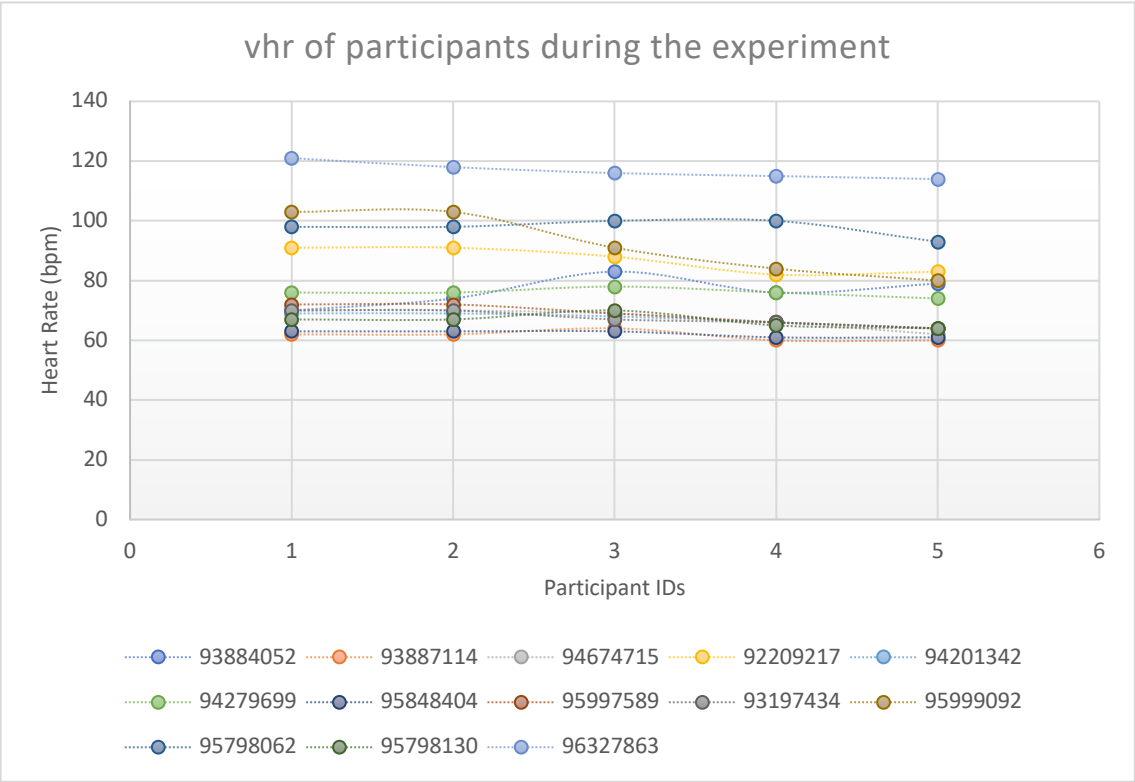


Figure 5.6: The Range of vhr Increases/Decreases while Observing Stimuli.

5.4.2 Facial Expression Analysis

Data collected from facial recording failed to demonstrate any specific emotional responses. Facial recognition software was not available during the period of data analysis. Additionally, poor lighting and quality of the images captured during the recording process, would likely contribute to the overall inaccuracy of any readings made. As a result, this data has been excluded from the present study. Instead, non-verbal data presented is the result of researcher observations instead.

5.4.3 Stimulus 1

Participants gave very similar feedback in response to the first stimulus. Some participants could not to connect with the work, citing issues with the way the work was filmed (PID: 94279699) and not being able to see the entire stage. Many of the participants observed that they could not find the source of the drum strikes and that it was disconcerting, and startling. However, most participants stated that they felt no particular emotion while watching the clip. One participant noted that the figure standing centre stage looked like they were about to choose someone, or they were making an accusatory statement (PID: 95798062). Relatively few reported that the work was violent and three made comments about breath but not their own, rather the breathing of the performers on the recording. Participants also could not identify any specific emotion when challenged directly, many cited that they were intrigued and that they only felt alienated due to lack of context provided. There was little citation of psycho-physical responses (MECs) to the music theatre. When it was revealed to them the subject matter of the performance, many demonstrated no significant response, except one or two appearing to make a connection. It appeared that context did not spark any considerable emotional arousal of this piece. Most participants stated that they would like to know more about the work. Table 5.14 demonstrates the frequency of each participant's answer. 1 = not at all and 5 = felt an overwhelming amount. For clarity, the mean has been included. Thus, the mean, the stronger the felt emotion.

Emotional Variable (EV)		**Frequency (*f*)**					***M***
		1	**2**	**3**	**4**	**5**	
1	I found it beautiful	3	4	2	4	0	2.54
2	Challenged me intellectually	2	2	3	4	2	3.15

3	Delighted me	4	2	3	1	3	2.77
4	Calmed me	5	2	3	2	1	2.38
5	Made me curious	1	0	0	4	6	3.62
6	Liked it	1	0	7	3	2	3.38
7	Fascinated me	2	1	6	2	2	3.08
8	Felt something wonderful	6	3	2	2	0	2.00
9	Invigorated me	5	4	2	2	0	2.08
10	Was mentally engaged	1	2	4	4	2	3.31
11	Baffled me	2	2	2	4	3	3.31
12	I found it ugly	6	1	3	3	0	2.23
13	Sensed a deeper meaning	0	1	1	7	4	4.08
14	Felt deeply moved	2	4	6	1	0	2.46
15	Made me feel melancholic	6	2	2	2	1	2.23
16	Energised me	7	6	2	1	0	2.23
17	Made me angry	8	2	2	0	1	1.77
18	Was enchanted	7	2	1	3	0	2.00
19	Bored me	6	2	4	1	0	2.00
20	Relaxed me	2	2	6	2	1	2.85
21	Felt a sudden insight	5	2	4	1	1	2.31
22	Amused me	5	1	3	4	0	2.46
23	Made me sad	8	3	0	1	1	1.77
24	Felt confused	0	4	4	3	2	3.23
25	Made me aggressive	9	3	1	0	0	1.38
26	Made me feel sentimental	8	4	1	0	0	1.46
27	Worried me	9	0	2	1	1	1.85

28	Made me feel nostalgic	10	0	2	0	1	1.62
29	Surprised me	1	1	6	4	1	3.23
30	Felt oppressive	7	3	3	0	0	1.69
31	I found it sublime	8	4	1	0	0	1.46
32	Spurred me on	7	1	4	1	0	1.92
33	Felt indifferent	6	0	3	0	4	2.69
34	Was impressed	1	4	5	2	1	2.85
35	I found it distasteful	12	1	0	0	0	1.08
36	Touched me	4	5	2	2	0	2.15
37	Was unsettling to me	4	6	2	1	0	2.00
38	Sparked my interest	1	1	2	7	2	3.62
39	Made me happy	3	7	2	0	1	2.15
40	Felt awe	8	2	3	0	0	2.15
41	Motivated me to act	11	0	0	1	1	1.54
42	Was funny to me	10	2	0	0	1	1.46

Table 5.14: Frequency of answers to AESTHEMOS test 1.

5.4.4 Stimulus 2

This stimulus divided participants decisively. Many cited that they were confused, with many referring to the two percussionists at the back of the orchestra building and destroying two cup towers.

Figure 5.7: Two Percussionists build a Tower of Cups (RTÉ lyric fm, 2019: 26’58”).

Several participants reported that they liked the music and that it was well orchestrated. Participants reported that they were energised by the driving music and some stating that they felt empowered (PID: 93884052). There were very few examples of MECs, or physical effects felt in response to the work. One participant tapped their foot on the floor (PID: 95997589). One participant reported that they felt the work to be derivative and reported an anger response to the work (PID: 93887114). Several participants observed that the performer’s vocals were flat, and one stated that they were expecting a much bigger climax or some form of background image to match the musical climax (PID: 95847511). Table 5.15 demonstrates the frequency of each participant’s answer.

Emotional Variable (EV)		**Frequency (*f*)**					***M***
		1	**2**	**3**	**4**	**5**	
1	I found it beautiful	3	3	4	2	1	2.62
2	Challenged me intellectually	2	5	3	2	1	2.62

3	Delighted me	1	3	6	1	2	3.00
4	Calmed me	5	5	3	0	0	1.85
5	Made me curious	0	1	6	4	2	3.54
6	Liked it	2	2	3	4	2	3.15
7	Fascinated me	2	2	5	2	2	3.00
8	Felt something wonderful	4	2	4	2	1	2.54
9	Invigorated me	2	3	5	2	1	2.77
10	Was mentally engaged	0	2	4	7	0	3.38
11	Baffled me	1	7	2	2	1	2.62
12	I found it ugly	9	1	0	0	3	2.00
13	Sensed a deeper meaning	2	1	5	4	1	3.08
14	Felt deeply moved	5	3	3	2	0	2.15
15	Made me feel melancholic	9	4	0	0	0	1.31
16	Energised me	3	3	3	3	1	2.69
17	Made me angry	6	2	3	0	2	2.23
18	Was enchanted	6	3	1	2	1	2.15
19	Bored me	8	1	3	1	0	1.77
20	Relaxed me	6	5	2	0	0	1.69
21	Felt a sudden insight	6	4	2	1	0	1.85
22	Amused me	2	2	1	8	0	3.15
23	Made me sad	9	2	2	0	0	1.46
24	Felt confused	3	4	2	3	1	2.62
25	Made me aggressive	9	0	2	1	1	1.85
26	Made me feel sentimental	11	0	1	1	0	1.38
27	Worried me	9	0	3	1	0	1.69

28	Made me feel nostalgic	11	0	1	1	0	1.38
29	Surprised me	5	5	1	2	0	2.00
30	Felt oppressive	7	3	3	0	0	1.69
31	I found it sublime	6	2	2	3	0	2.15
32	Spurred me on	8	2	1	2	0	1.77
33	Felt indifferent	9	2	1	1	0	1.54
34	Was impressed	4	2	2	4	1	2.69
35	I found it distasteful	9	1	1	1	1	1.77
36	Touched me	3	6	3	1	0	2.15
37	Was unsettling to me	7	3	3	0	0	1.69
38	Sparked my interest	1	4	6	2	0	2.69
39	Made me happy	5	1	3	2	2	2.62
40	Felt awe	6	3	2	1	1	2.62
41	Motivated me to act	7	3	1	1	1	1.92
42	Was funny to me	6	4	2	0	1	1.92

Table 5.15: Frequency of Answers in Response to AESTHEMOS Test 2.

5.4.5 Stimulus 3

The third stimulus failed to aesthetically connect with participants who felt the work to be disquieting and percussionist spent too long exploring the one musical idea. Many found the visual accompaniment boring and only began to take an interest when the third screen lit up. Some reported that they were hypnotised by the music, but others reported that there was a lack of contrast of musical ideas. A few enjoyed the work, but it failed to resonate emotionally with most. Only four

participants reported MECs. Those who did report, noted that they felt a physical tension in their upper body, and one reported butterflies in their stomach (Beltzer, Nock, Peters, and Jamieson, 2014) and one participant reported a 'tingle'. Table 5.16 demonstrates the frequency of each participant's answer.

Emotional Variable (EV)		**Frequency (*f*)**					***M***
		1	**2**	**3**	**4**	**5**	
1	I found it beautiful	0	5	3	3	2	3.15
2	Challenged me intellectually	3	1	4	4	1	2.92
3	Delighted me	2	4	3	3	1	2.76
4	Calmed me	2	2	6	1	2	2.92
5	Made me curious	0	1	4	5	3	3.76
6	Liked it	0	4	4	1	4	3.38
7	Fascinated me	2	2	4	4	1	3.0
8	Felt something wonderful	3	5	3	2	0	2.30
9	Invigorated me	6	2	3	1	1	2.15
10	Was mentally engaged	1	3	4	3	2	3.15
11	Baffled me	1	3	3	4	2	3.23
12	I found it ugly	10	1	1	1	0	1.46
13	Sensed a deeper meaning	2	0	5	4	7	5.23
14	Felt deeply moved	5	6	1	0	1	1.92
15	Made me feel melancholic	8	0	2	2	1	2.07
16	Energised me	5	5	2	1	0	1.92
17	Made me angry	10	1	2	0	0	1.38
18	Was enchanted	3	1	5	3	1	2.84
19	Bored me	6	2	3	1	1	2.15

20	Relaxed me	2	0	7	1	3	3.23
21	Felt a sudden insight	7	4	1	1	0	1.69
22	Amused me	7	2	3	1	0	1.84
23	Made me sad	8	1	1	2	1	2.0
24	Felt confused	6	1	2	4	0	2.30
25	Made me aggressive	11	2	0	0	0	1.15
26	Made me feel sentimental	6	3	2	2	0	2.0
27	Worried me	9	1	2	1	0	1.61
28	Made me feel nostalgic	8	1	0	4	0	2.0
29	Surprised me	4	3	4	2	0	2.30
30	Felt oppressive	8	2	1	2	0	1.76
31	I found it sublime	7	2	2	1	1	2.0
32	Spurred me on	7	4	2	0	0	1.61
33	Felt indifferent	6	2	4	1	0	2.0
34	Was impressed	1	7	1	1	3	2.84
35	I found it distasteful	11	2	0	0	0	1.15
36	Touched me	4	4	1	3	1	2.46
37	Was unsettling to me	4	4	1	2	2	2.53
38	Sparked my interest	1	1	5	3	3	3.46
39	Made me happy	4	4	2	0	3	2.53
40	Felt awe	6	4	2	1	0	2.53
41	Motivated me to act	10	0	1	1	1	1.69
42	Was funny to me	8	3	1	0	1	1.69

Table 5.16: Frequency of Answers in Response to AESTHEMOS Test 3.

Table 5.16 demonstrates that there was no statistically significant emotion felt by participants, as the data is equally distributed across the emotional variance. One participant reported that they remembered a musical phrase from the piece and was able to sing it back, even weeks after the experiment. The strongest emotions are simply aesthetic rather than emotional.

5.4.6 Stimulus 4

The final stimulus also divided opinion across the sample, although only a few were able to pinpoint any specific emotions, most of these being reported as 'happy'. Many described that they were distracted by the visuals, reporting that they enjoyed the visual aesthetic, but most did not connect the aboriginal art with the music. One participant observed that the performers' moaning provoked a negative response in them but could not elaborate further (PID: 92209217). When asked, only a small sample reported that the work alienated them in some way. A small sample of participants reported MECs or psychophysical effects such as wincing as a response to the squeaky violin pitches. Some participants made comments regarding the filming of the work, with some really enjoying the tight and close angles, with others criticising the technique. Of all the music theatre pieces surveyed, this piece appeared to be the most aesthetically engaging. All but one participant reported that they would like to find out more about the work. The diverse reactions highlighted how the work provoked visceral responses as well as more intellectual reflections on art and culture. Though polarising, the piece succeeded in generating discussion and further questions in the minds of audiences. Table 5.17 demonstrates the frequency of each participant's answer.

Emotional Variable (EV)	**Frequency (*f*)**	***M***

		1	2	3	4	5	
1	I found it beautiful	3	1	1	6	2	3.23
2	Challenged me intellectually	1	3	3	3	3	3.30
3	Delighted me	4	1	1	6	1	2.92
4	Calmed me	7	2	0	4	0	2.07
5	Made me curious	0	2	1	4	6	4.07
6	Liked it	1	2	1	5	4	3.69
7	Fascinated me	0	1	4	6	2	3.69
8	Felt something wonderful	5	2	3	2	1	2.38
9	Invigorated me	3	5	2	2	1	2.46
10	Was mentally engaged	1	2	2	6	2	3.46
11	Baffled me	1	1	6	3	2	3.30
12	I found it ugly	6	4	2	0	1	1.92
13	Sensed a deeper meaning	0	4	3	4	2	3.30
14	Felt deeply moved	6	3	2	1	1	2.07
15	Made me feel melancholic	7	2	3	0	1	1.92
16	Energised me	4	4	2	1	2	2.46
17	Made me angry	10	1	0	1	1	1.61
18	Was enchanted	5	2	4	2	0	2.23
19	Bored me	11	0	1	1	0	1.38
20	Relaxed me	7	0	4	2	0	2.07
21	Felt a sudden insight	7	3	2	0	1	1.84
22	Amused me	2	5	4	2	0	2.46
23	Made me sad	12	0	0	0	1	1.30
24	Felt confused	5	1	1	3	3	2.84

25	Made me aggressive	10	1	2	0	0	1.38
26	Made me feel sentimental	8	3	1	1	0	1.61
27	Worried me	9	1	1	2	0	1.69
28	Made me feel nostalgic	9	3	1	0	0	1.38
29	Surprised me	1	2	4	4	0	2.53
30	Felt oppressive	8	1	3	1	0	1.76
31	I found it sublime	6	0	4	2	1	2.38
32	Spurred me on	6	4	0	3	0	2.0
33	Felt indifferent	8	3	2	0	0	1.53
34	Was impressed	1	3	1	5	3	3.46
35	I found it distasteful	12	0	0	1	0	1.23
36	Touched me	4	5	2	1	1	2.23
37	Was unsettling to me	5	2	3	2	1	2.38
38	Sparked my interest	1	1	2	6	3	3.69
39	Made me happy	4	1	2	3	3	3.0
40	Felt awe	5	4	2	2	0	3.0
41	Motivated me to act	10	0	1	1	1	1.69
42	Was funny to me	7	0	5	1	0	2.0

Table 5.17: Raw data frequency table in response to AETHMOS test 4.

5.5 Experiment D - Questionnaire Results

This final experiment was designed to test emotional responses to music theatre of a wider range of participants of varying education and prior knowledge. These experiments intended to further test the predictions that audiences became

emotionally disengaged with music theatre because of a lack of aesthetic appreciation. 100 participants (*n* = 100) (64 Male, 32 Female, 1 Non-binary, 3 non-specified) ((Aged 18-70 (*M* = 38), (*S.D.*= 201) participated in an online questionnaire from their own devices. Table 5.18 demonstrates the calculations used for mean ages and standard deviation.

Age Bracket	f	Xm	$f \cdot Xm$	$\bar{x}$	$(m \cdot \bar{x})$	$(m \cdot \overline{x^2})$	$f(m \cdot \overline{x^2})$
18-24	21	21	411	38.175	-17.175	294.98	6194.59
25-34	26	29.5	767	38.175	-8.675	75.255	1956.64
35-44	21	39.5	829.5	38.175	1.325	1.755	36.868
45-54	17	49.5	841.5	38.175	11.325	128.25	2180.34
55-64	12	59.5	714	38.175	21.325	454.75	5457.06
65-74	1	69.5	69.5	38.175	31.325	981.25	981.255
75-80	2	77.5	155	38.175	39.325	1546.45	3092.91

Table 5.18: Age range of Participants and Calculations.

All participants had achieved some form of basic academic award, ranging from BTEC/T-level up to Higher Doctorate. The median and mean qualification was a bachelor's degree. 88% of participants were White, 4% Black, African, Caribbean or Black British, 4% Mixed or Multiple ethnic groups and 4% reported as other. Most participants described a quotidian relationship with music. Often citing consumption during work, travelling or exercise. Others citied that they practised performance daily. One participant reported that their music listening activity, positively contributed to Attention Deficit Hyperactivity Disorder (ADHD) management. There was no extraordinary data presented here.

An inadvertent phenomenon occurred where an equal split of participants described themselves as non-musicians and those who had some musical experience (50%/50%). This included players, researchers, composers, and teachers. This made the sample more representative and would produce results which gave opposing views on musicology. This has allowed for interrogation of the statistical differences between these two groups. A one-way ANOVA test revealed that there was little significant statistical difference between the two groups. Therefore, H_0 can be accepted as $F7 = 3.68$, $p>.05$.

5.5.1 General Observations Summary

Participants felt a wide range of emotional responses to the four works and demonstrated that they desperately wanted to know more context for the works they observed. Some described that they could not be satisfied until they had a comprehension of the wider artistic context. Participants appeared unable to identify specific aesthetics or elements which they particularly did or did not enjoy, and often gave generic answers. This could be an indicative trait of the dismissive nature participants applied with artistic output which failed to stimulate strong aesthetic appreciation. This may be accredited to them not possessing appropriate language or simply due to the lack of context provided. The musicians gave more specific answers, often critiquing musical playing technique rather than the theatrical elements and the opposite could be said for the non-musicians who gave more generic and generalised feedback. Observations of foot taping and neutral expressions were taken from experiments rather than the not so successful facial expression image data.

5.5.2 Stimulus 1

Overall, the reactions suggest that the performance was polarising and thought-provoking, with some participants reporting that they found the material challenging but unengaging. The use of unconventional sounds and lack of conventional accompaniments may have contributed to these particular responses. The reactions varied greatly, with some viewers finding the performance boring or pointless, and others found it intense and powerful. Some viewers were confused about the meaning behind the performance, while others interpreted it as a depiction of violence and slavery. Several participants reported being startled by sudden loud noises, while others found the natural sounds calming. Some reactions changed throughout the performance, with others describing that they started out feeling curious but became unsettled as the whipping sounds began. A few found the performance boring until the whipping began, which made it more engaging for them. Furthermore, some viewers found personal connections or memories triggered by the sounds, such as the participant who reported that they worked with basketmaking willow in their youth and was reminded of happy times. This highlighted the subjective nature of art and how it can evoke different emotions and experiences for different people.

Overall, the range of reactions emphasises the importance of diversity in artistic expression and the value of creating thought-provoking and challenging works which push boundaries and elicit strong emotions. The method of data collection allowed for a more rigorous approach to descriptive statistical analysis to be applied. Table 5.9 demonstrates the participant's responses to each emotional statement. Once again, the higher the mean, the stronger the emotional response.

	Emotional Variable (EV)	***M***	***S.D.***

1	It was beautiful	2.24	1.3
2	It challenged me intellectually	2.16	1.29
3	I was delighted	1.88	1.19
4	I was calmed	1.48	0.83
5	I was curious	2.73	1.37
6	I liked it	2.3	1.35
7	It fascinated me	2.44	1.41
8	It made me feel something wonderful	1.63	1.07
9	I felt invigorated	1.78	1.16
10	I was baffled	2.65	1.4
11	It was ugly	2.06	1.35
12	I was moved	1.52	0.9
13	I felt sad	1.31	0.49
14	I felt energised	1.75	1.11
15	It made me angry	1.69	1.2
16	It was boring	1.95	1.28
17	It was relaxing	1.35	0.79
18	It was amusing	1.55	0.89
19	It made me aggressive	1.5	1.07
20	It surprised me	2.55	1.0
21	It touched me	1.59	1.0
22	It unsettled me	2.69	1.55
23	It motivated me	1.58	0.98
24	I was in awe	1.75	1.13
25	It made me smile	1.71	1.13

Table 5.19: Mean and Standard Deviation of Data Captured from Participants in Response to Stimuli 1.

A paired t test demonstrated that there was no significant statistical difference between musicians and non-musicians in response to this stimulus $t(48)= 0.0104$, $p>.05$. Both musician and non-musician groups found this work to achieve low valence arousal. However, it could be concluded that non-musicians found the work slightly more emotionally resonating.

5.3.3 Stimulus 2

Participants enjoyed the orchestration and spoken word sections, while others found the singing and lyrics disappointing or confusing. The use of paper cups and the relevance of the performance to the subject matter were also questioned. Overall, reactions were mixed and ranged from energised and motivated, to bored and annoyed. This suggests that the effectiveness of this performance may depend on individual aesthetic appreciation and their views on the subject matter. Table 5.20 demonstrates the mean rank and standard deviation in response to stimulus 1.

	Emotional Variable (EV)	***M***	***S.D.***
1	It was beautiful	2.34	1.01
2	It challenged me intellectually	2.22	1.07
3	I was delighted	2.13	1.06
4	I was calmed	1.52	0.87
5	I was curious	2.87	1.23

6	I liked it	2.72	1.18
7	It fascinated me	2.52	1.31
8	It made me feel something wonderful	1.84	1.05
9	I felt invigorated	2.28	1.35
10	I was baffled	2.42	1.34
11	It was ugly	1.64	1.12
12	I was moved	1.82	0.98
13	I felt sad	1.44	0.8
14	I felt energised	2.32	1.3
15	It made me angry	1.65	1.03
16	It bored me	2.02	1.29
17	It relaxed me	1.4	0.81
18	It amused me	2.16	1.07
19	It made me aggressive	1.35	0.77
20	It surprised me	2.23	1.1
21	It touched me	1.75	1.09
22	It unsettled me	1.66	1.08
23	It motivated me	1.8	1.09
24	I was in awe	1.85	1.12
25	It made me smile	2.31	1.28

Table 5.20: Mean and Standard Deviation of Data Captured from Participants in Response to Stimulus 2.

A paired t test demonstrated that there was no significant statistical difference between musicians and non-musicians in response to this stimulus t(24)=1.8815, *p*>.05. Both musician and non-musician groups found this work to achieve relatively low valence arousal but felt that it achieved a larger aesthetic impact rather than a lasting emotional connection. Musicians achieved slightly higher valence arousal; this may be attributed to the presence of large orchestra, or increased tempo.

5.3.4 Stimulus 3

Participants, generally, found the music relaxing or interesting, while others were unsettled. The significance of the visual elements was unclear to many viewers, but some found them captivating or intriguing. The visual elements, such as the intertwined hands, were also a source of confusion for many viewers, with some finding them hypnotising while others found them pointless. Despite these mixed reactions, many viewers were still curious and intrigued by the performance, and some even found it inspiring or thought-provoking. Overall, the reactions to the music theatre performance were complex and varied, reflecting the subjective nature of art and the different ways in which people perceive and interpret it. Table 5.21 demonstrates the mean rank and standard deviation in response to stimulus 3.

	Emotional Variable (EV)	***M***	***S.D.***
1	It was beautiful	2.47	1.24
2	It challenged me intellectually	2.07	1.09
3	I was delighted	2.02	1.16
4	I was calmed	2.36	1.27
5	I was curious	2.71	1.18

6	I liked it	2.58	1.25
7	It fascinated me	2.4	1.36
8	It made me feel something wonderful	1.89	1.18
9	I felt invigorated	1.79	1.11
10	I was baffled	2.27	1.33
11	It was ugly	1.16	1.02
12	I was moved	1.69	0.91
13	It was sad	1.5	0.83
14	I felt energised	1.16	0.98
15	It made me angry	1.25	0.68
16	It bored me	2.38	1.38
17	It relaxed me	2.29	1.21
18	It amused me	1.62	0.99
19	It made me aggressive	1.16	0.54
20	It surprised me	1.82	1.04
21	It touched me	1.69	1.06
22	It unsettled me	1.87	1.25
23	It motivated me	1.45	0.89
24	I was in awe	1.66	1.08
25	It made me smile	1.64	1.07

Table 5.21: Mean and Standard Deviation of Data Captured from Participants in Response to Stimulus 3.

After carrying out a paired t test, it was observed that there was no significant statistical difference between musicians and non-musicians in response to the stimulus. The t-value (24) of 1.84299 with $p>.05$, revealed that the results were not statistically significant. Both groups rated the work as having low valence arousal, and they had little emotional impact as a result. However, it was noted that musicians seemed to have connected with the work slightly more than non-musicians. This could be attributed to their deeper understanding of the musical elements used in the work, which non-musicians may not have been able to fully grasp.

5.3.5 Stimulus 4

Many participants found the sounds unsettling, uncomfortable, or irritating, while others were intrigued or impressed by the musician's skill and the visual elements of the performance. Some felt that the piece was unique and different, while others found it boring or pointless. The performance left a strong impression on those who experienced it, with many feeling a sense of unease or discomfort. Some found the performance intriguing or inspiring, particularly in terms of the musician's skill and the visual aspects of the piece. Some participants likened the violin sounds to horror film music and some describing the work as barely qualifying as music. A couple of participants found the additional sonic sounds produced by the performer a distraction.

> Although the human sounds on the violin part were interesting and skillfully [*sic*] produced, I did not like the human sounds over the violin part, they distracted the listening of the violin´s part and made the music restless and distracting (PID: 106339809)

It is notable that most of the participants observed the musical performance more than the striking visuals. Participants found it difficult to make an emotional connection with this work, citing it as strange, disjointed, unsettling and jarring.

Figure 5.8: *'mr* in Performance (Ensemble Musikfabrik 2018) 0'57".

Overall, this collection of reactions serves as evidence that music theatre performance can elicit strong emotions and reactions from its audience, whether positive or negative. Table 5.22 demonstrates the mean and standard deviation statistical data from this experiment.

	Emotional Variable (EV)	***M***	***S.D.***
1	It was beautiful	2.24	1.3
2	I was challenged intellectually	2.16	1.29
3	I was delighted	1.88	1.19
4	I was calmed	1.48	0.83
5	I was curious	2.73	1.37
6	I liked it	2.3	1.35

7	It fascinated me	2.44	1.41
8	It made me feel something wonderful	1.63	1.07
9	I felt invigorated	1.78	1.16
10	I was baffled	2.65	1.4
11	It was ugly	2.06	1.35
12	I was moved	1.52	0.9
13	I felt sad	1.31	0.7
14	I felt energised	1.75	1.11
15	It made me angry	1.69	1.2
16	It was boring	1.95	1.28
17	It was relaxing	1.35	0.79
18	It was amusing	1.55	0.89
19	It made me aggressive	1.5	1.07
20	It surprised me	2.55	1.34
21	It touched me	1.59	1.0
22	It unsettled me	2.69	1.55
23	It motivated me	1.58	0.98
24	I was in awe	1.75	1.13
25	It made me smile	1.71	1.13

Table 5.22: Mean and Standard Deviation of Data Captured from Participants in Response to Stimulus 4.

A paired t test demonstrated that there was a significant statistical difference between musicians and non-musicians in response to this stimulus $t(24)=3.5195$,

p=.0018. To further illustrate the statistical difference, Figure 5.9 demonstrates that musicians, generally, achieved a much stronger emotional arousal in response to this stimulus over non-musicians.

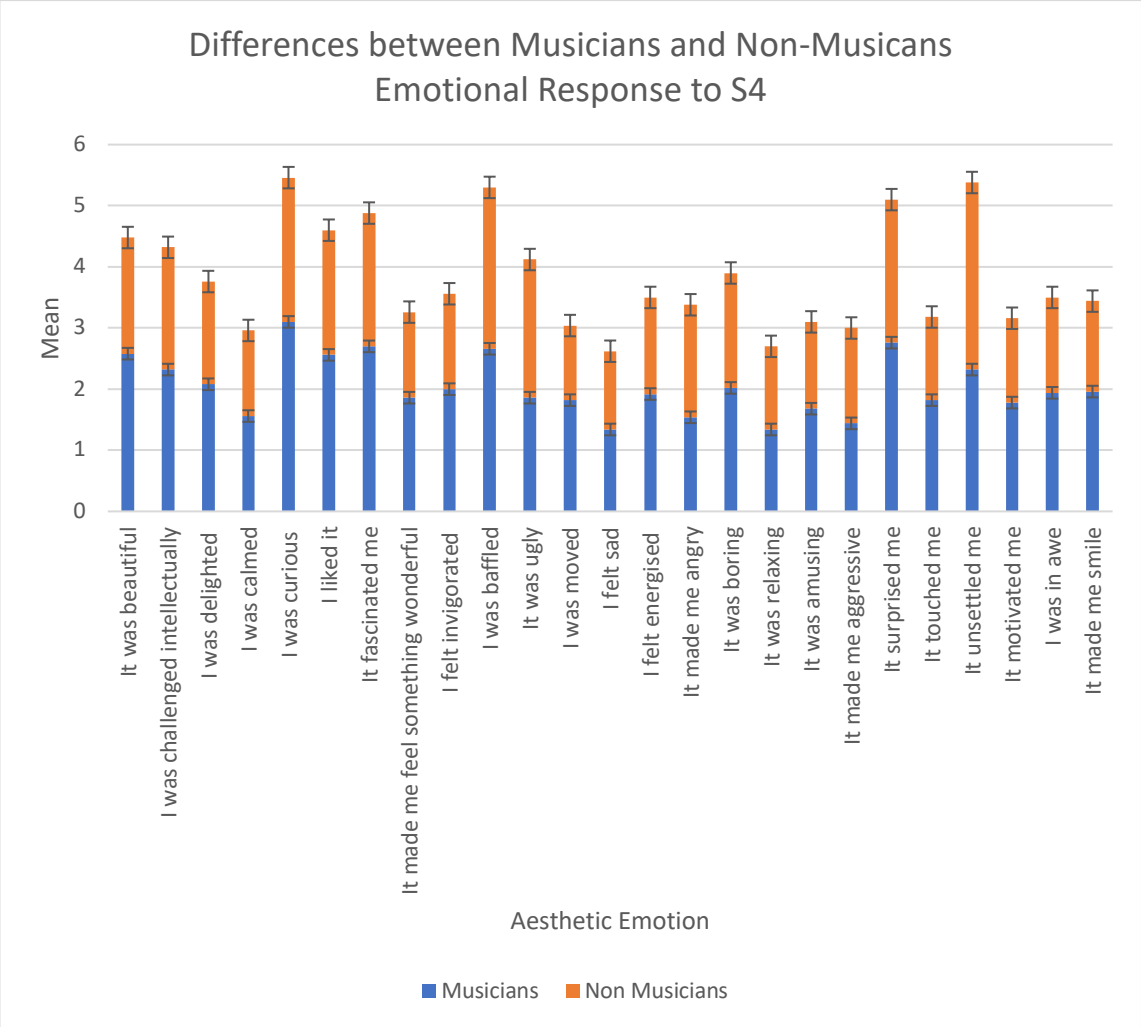


Figure 5.9: The Statistical Difference Between Musicians and Non-Musicians (with standard error bars) in Response to Stimulus 4.

5.5 Conclusions

This chapter has presented evidence to answer the research questions: 1) What levels of valence and arousal achieved when observing music theatre stimuli? 2) Is there a perceived emotional barrier between composer and audience member? If so, what are the contributing factors? What is the overall psychological impact

music theatre can have on audiences and how can we describe the state of the art?

While audiences were shown to experience some emotional arousal, they were unable to form a deep understanding or connection to all stimuli. Although participants reported increased positive feelings, physiological measures did not demonstrate significant emotional engagement or valence arousal. There is evidence to suggest that a heightened sense of engagement and often confusion, frustration, or discomfort. Further research is needed to determine whether visual elements or musical components primarily trigger these demonstrated audience emotions.

Cognitive responses to experimental music theatre are also notable. Many participants noted the unconventional nature of the performances. This may challenge traditional patterns of thinking and perception, leading to cognitive dissonance and the revaluation of preconceived ideas. This cognitive engagement may foster a deeper understanding of the performance and its message.

The evidence provided shows that some participants experienced MECs as a result of exposure to the music theatre stimuli, although this was not triggered by all stimuli and for only a small sample of participants. There is some qualitative evidence that the music theatre stimuli increased valence arousal in all participants to varying degrees of significance. Data on non-verbal signalling (facial expression) failed to demonstrate any significant evidence, nor did the heart rate data, which only demonstrated decreased cardiac dynamics as the experiment progressed. These results can only loosely be connected with valence arousal and aesthetic emotional response. Further psychophysical

studies would be required to fully explain whether visual aesthetics cause valance arousal over musical stimulation.

Overall, the study of psychological responses to experimental music theatre provides insights into the complex interplay between performance art and the human psyche. Highlighting the potential of experimental forms of art to evoke profound emotional, cognitive, and behavioural reactions, although not always positive. The next chapter will discuss the data presented in this research, with reference to the already existing literature.

Chapter Six

Discussion

6.1 Introduction

This research aimed to discover to what extent audiences responded aesthetically and psychologically while observing experimental music theatre stimuli. This was to discover whether the decline in music theatre could be attributed to lack of emotional comprehension. Data presented in the previous chapter demonstrated that there was significant disparity between aesthetic appreciation and artistic comprehension of music theatre.

This chapter will begin by framing the key data findings which will lead to a discussion about physiological responses to music theatre. It will then continue by examining the data in context with reference to the already existing literature. The chapter will conclude with a wider philosophical discussion around the future development of the music theatre phenomenon, with future recommendations for further study.

6.2 Pilot Study (Experiment A)

Participants reported emotional responses to the stimuli, with the first piece eliciting negative emotions such as confusion, discomfort, and annoyance. The first piece did not stimulate psychophysical arousal in most participants, but some reported convincing emotional arousal. The second music theatre work elicited more varied emotions, with some feeling empowered or stimulated, while others felt anxious or bored. Overall, the study found that music theatre stimuli can elicit

strong emotional responses in audiences, and that context can highly influence interpretation.

6.3 Experiment B

This experiment aimed to test whether audiences recognised aesthetic beauty and whether they could effectively self-report their emotional reactions to aesthetically challenging stimuli. Participants also reported their age, highest qualification, and musical background. The study found that all three stimuli elicited emotional responses in participants, with the music theatre work also piquing interest. Evidence demonstrated that with more context, participants were able to form stronger emotional decisions about the work and to report emotional responses carefully. Music Theatre stimuli has demonstrated an ability to elicit strong positive and negative valence in participants.

6.4 Experiment C

Based on the data collected, it appears that the music theatre pieces presented in the experiment did not elicit particularly strong emotional responses from participants. Some participants reported confusion and disconnection, while others enjoyed the music and visuals. The strongest emotions reported were aesthetic rather than emotional in nature. It is worth noting that the final stimulus appeared to be the most aesthetically engaging, provoking visceral responses and intellectual reflections. However, opinions were divided among participants, with only a small sample reporting specific emotions such as happiness or negative responses to certain aspects of the performance. Overall, the heart rate monitoring data showed no significant changes in average heart rate, stimulus to stimulus, with only minor increases and decreases. The facial recording data was

excluded due to poor quality, so it is unclear whether there were any specific emotional responses that could have been detected through this method. Based on the mixed reactions and lack of strong emotional responses, it may be useful for future studies to explore the factors that contribute to emotional engagement with music theatre performances. This could include factors such as provided context, personal experience, cultural background, and facilitated conditions.

6.5 Experiment D

This experiment tested emotional responses to music theatre among participants with varying education and prior knowledge. Participants felt a wide range of emotional responses to the works and demonstrated a desire for more context. The effectiveness of the performances depended on individual aesthetic appreciation. The study highlights the subjective nature of art and the different ways in which people perceive and interpret it. The musicians gave more specific answers, while non-musicians gave more generic feedback. The study found that there was little significant statistical difference between musicians and non-musicians in response to the stimuli.

Because of the subjective nature of art, and the varying levels of arousal in different participants, it is difficult to form specific, concrete conclusions, however, with the backing of scientific investigation, this study has been able to provide a small snapshot of how music theatre is interpreted emotionally and therefore gage a response which could lead to further representative sample studies. These studies can help to indicate the levels of interest in the art form and maybe form an idea of the state of the art in more general terms. This could lead to discussions of how composers can further engage with potential audiences and produce work relevant for the 21st century.

6.6 Research Questions

1) What levels of valence and arousal are achieved when observing music theatre stimuli?

This study has found that music theatre is able to illicit mid to strong valence and significant arousal in a majority of participants. It is evident that participants were unable to form a deep emotional connection to the work. Although many experienced increased positive valence, many were left confused and felt that they required a higher sense of commitment to fully engage with the work. This was often attributed to a lack of context where participants felt that they would never be able to fully engage unless the context was fed to them, indicating a reluctance to employ creative imagination or allow the work to manifest as a mental image. It is notable that musicians achieved slightly higher emotional arousal than non-musicians in some experiments. This data demonstrates that musicians achieve a marginally higher arousal response to music theatre than non-musicians. A similar music related psychological study found that musicians achieved activation of the left inferior parietal lobe (IPL) when observing musical stimulus. This provided additional evidence that musical training promotes neural activation to emotional music (Lui, Guangyuan, Dongtao, Qiang, Guangjie, Shifu, Gaoyuam, and Xingcong, 2018).

Aesthetic responses appeared to be richer in data, with many participants demonstrating irritation, intrigue, disappointment or simply dismissal of theatrical elements. Many participants focused upon the musicianship or performance of the music rather than the wider synthesis. Many felt the need to critique the performance or simply gave generic and somewhat un-insightful responses when asked about the aesthetics at large. There is little evidence to explain as to why

this occurred, it can only be hypothesised that the visuals failed to capture their imaginations, or perhaps for fear of a lack of artistic knowledge, having their answers critiqued further, possibly causing embarrassment. When presented with significant visuals or extra-sonic material, participants found them distracting and somewhat bothersome. Therefore, could a lack of audience connection be attributed to the distraction provided by extra visual elements, or extra-sonic events, which detract attention away from the sound of the aesthetically important music itself?

2) Is there a perceived emotional barrier between composer's messages and audience member? If so, what are the contributing factors?

This study has demonstrated significant evidence that there could be an emotional barrier between composer and audience. Music Theatre work appears to be conceived as a 'high art' with pretentious composers lecturing their socio-political views to an impervious audience. Many participants found that it was difficult to empathise with characters with many left feeling chastised or blamed. Many found some of the work to make them feel uncomfortable which distracted from the message the piece was attempting to convey. On the subject of emotions in their writing, one composer felt that it was not his intent to alienate the audience, but simply provide allegories for them for discover:

> At least with this piece I did not think about being able to alienate someone, but many of my pieces [*sic*] works with ideas of artistic primitivism, ritualistic spaces, allegories of the dichotomy between human nature and civilization, liberation and power, so meaby [*sic*] could be possible? That could be an interesting point for me to know if such reaction is possible, at least with a short solo piece like this one (Solís-Serrano, 2023).

This comfortability may well indicate a reason that composers are unable to connect emotionally with their potential audiences. The most emotionally

arousing works were those which audiences were able to grasp context from the onset.

> I take a lot of consideration on create [*sic*] emotional reactions from the audience. There will be always emotional reactions, and always different depending on each subject, but I really try to take care on the emotional side of the music I am writing. The emotions of the music itself and the theatrical version are really well planned when writing the music. Of course I don't pretend to create a concrete "only one" emotional reaction, but a participation of the audience of the emotion that the stage and the music itself is having at that moment (Solís-Serrano, 2023).

Many participants enjoyed the mix of spoken word in some pieces and were more engaged with the Western traditional tonal music as this felt more familiar to them. The a-tonal and post-music sonic events triggered boredom, or low arousal and negative valence. This may indicate that the musical language chosen by composers might be a major cause of this emotional barrier. This data agrees that that familiarity plays a role in modulating a listener's emotional response to music (Ali and Peynircioğlu, 2006).

3) What psychological impact can music theatre have on audiences and what consequences could these have on the development of the artform?

The data produced by this study indicated that music theatre has the potential to illicit strong emotional responses. It is particularly interesting that participants focused more on the sonic event itself rather than the overall musico-theatrical synthesis. A recent study found that increases in arts engagement were associated with increases in flourishing psychological and social wellbeing and that those in non-metropolitan areas may have fewer opportunities for arts engagement (Bone, Bu, Sonke and Fancourt, 2023). Although lack of engagement cannot be wholly attributed to social wellbeing, there is certainly an argument that there is a lack of opportunity given for experimental sonic

performance beyond the Western Classical or popular music in British education (using Key Stage 3, non-statutory guidance documents as an example) (DFE, 2021). Thus, potentially fostering a reluctance for young adults to attempt an understanding of a wider musical language. The data produced from this study has also indicated that music theatre certainly has potential to illicit long, lasting emotional relevance, although further testing would need to be carried out in order to fully prove this theory.

Emotions are central to the human experience and if music theatre fails to adequately trigger emotions in the majority of its audience, then it is impossible for the art form to expect longevity. This data implies that audiences are distracted from the music making by theatrical elements, which they perceive to be a negative rather than a welcome addition to the performance. It should be noted that the composers of the 1960s and 70s intended music theatre works to be performed at concerts, alongside other music performances, which would have helped them stand out. Instead, it appears more common for contemporary music theatre works to be performed as one-off, stand-alone entities. It is also worth noting that Mitchener presented part of her *SWEET TOOTH* music theatre work as a sound installation (British Art Show 9, 2021: *n.p.*).

6.7 Demographic Data

This section discuses individual demographic variables. Overall, there was little of significance to be discovered from this data. There is little evidence which provides explanation as to why, however it could be hypothesised that the demographic questions asked were too broad and could have benefit from being more honed and specific to the individual's background and their relationship with music.

6.7.1 Age

Participants aged 18-24 were the most vocal in their displeasure with the music theatre stimuli. They also gave the most conflicting answers such as reporting little annoyance in the AESTHMOS tests and then reporting that they were annoyed by the work in the free-text boxes. Similarly, participants aged 25-34 also often found the work unsettling, but were less forgiving with their answers, often resorting to multiple uses of question marks to illustrate their frustration. Some participants in this group gave really strong answers with some demonstrating that they found the work unique and well developed, but a majority finding it boring, particularly in experiment C. Many found that the work was not particularly intellectually challenging, and was a somewhat predictable (M = 1.87, *S.D.* 1.37). There is little to be said about the older age groups, who mainly gave one or two word answers to questions, this was the most confused group who were immediately dismissive of this area of performance. A few participants revealed that they wanted to enjoy or understand this work but found it a struggle to engage with aesthetically.

Overall, there is little significant data here to support the research questions. Age did not appear to be a major factor of importance when interpreting these results.

6.7.2 Social-Cultural/Ethnic Background Factors

Socio-economic backgrounds were not measured in this study, therefore there is little to discuss here. Ethnic backgrounds demonstrated little to no difference in responsiveness. All the participants were recruited from Britain although it was not revealed whether they were British or International citizens.

Education was measured across all questionnaires however, these ranged from GCSE (Secondary Education) right up to Higher Doctorate (post UK Level 8). A vast majority of the respondents had earned their first degree. There is little to no empirical evidence that these participants gave higher quality or more significantly relevant answers.

6.7.3 Sex/Gender

Jones (2014, 76) identified that a study conducted by North and Hargreaves (2008), demonstrated early experimental work which showed that both males and females were equally responsive, as reported by Sopchack (1955). However, Winold (1963) reported a greater responsiveness from females. Despite this, more recent research has been unable to produce conclusive results. Some questionnaires within this research project did not collect data on gender or gender identity, which limits our understanding of any potential differences in responses based on gender.

6.7.4 Musicians and Non-Musicians

Musicians and non-musicians process music in different ways, with the left hemisphere achieving higher activation with increased musical sophistication (Schlaug *in* Peretz and Zatorre, 2003: 375). This present study demonstrated that there were negligible differences in arousal levels between musicians and non-musicians while listening to a musical piece. These findings revealed only a slight increase in arousal in musicians compared to non-musicians. This could be due to the musicians' greater familiarity with the musical elements and their ability to recognise patterns and structures in the music. However, further investigation with a larger sample size and more controlled experimental conditions would be

able to provide more conclusive results. Nonetheless, this study provides a starting point for exploring the role of musical expertise in emotional responses to music theatre and how it impacts brain activation and cognitive processing.

6.8 Aesthetic Responses to Music Theatre

It could be argued that participants recorded a stronger aesthetic response to the music theatre stimuli than any psychological emotional response. This could be attributed to the experimental language of the artistic productions which appeared to have more of an impact than the emotional content. The subjective nature of music theatre as an art form makes it very difficult to successfully establish consensus whether audiences respond positively or negatively to the work. This data has provided evidence that audiences have a stronger aesthetic appreciation for work which did not attempt to convey a message. It could be concluded that audiences prefer music theatre which they comprehend quickly and without the need for extensive provision of context. The data provided evidence that participants and audiences did not fully aesthetically appreciate work which could be attributed to lack of context provided and what was perceived by some as self-gratifying for the composers.

The results demonstrated by the questionnaires indicate that aesthetics themselves cannot be blamed for music theatre's decline. Rebstock's (2019: 184) evaluation of music theatre aesthetics suggested that the artistic decision to remove the separation of musician and performer is, but one aesthetic of music theatre and participants surveyed barely mentioned this, choosing to concentrate instead on the sonic production and additional visual elements. It appears then, that we must look deeper into the problem to discover further answers.

6.9 The Self-Gratifying Composer/Observer

None of the participants surveyed identified any form of artistic liberation in the artwork. Werner Henze observed that music theatre's ability to act as a liberating vessel from traditional music culture:

> I would like the instrumentalists to interpret themselves consciously, and to extend their scope, so that they see themselves as inhabiting a realm of increased possibilities – possibilities of self-realization and self-liberation […] (Henze, 1982: 216).

Many participants did not identify that the artist might be expressing something deeper than what was demonstrated with surface level aesthetics. Could this be indicative of an ego gratifying observer, who, if not fully emotionally comprehending the artwork, inadvertently realising it to be below them or insignificant? Perhaps then, indicating that a lack of aesthetic and emotional connection might become a barrier for a deeper understating and appreciation.

Many participants appeared to be concerned with the idea that some music theatre art was produced as an ego-gratification on the part of the composers who wrote the work. Comments were made which implied that the work was in fact not composed for the observer, but as an outlet for the composer. This philosophical argument has existed for centuries, questioning whether created artwork exists for the benefit of the observer or the creator. If art existed only to please the beholder, then does it truly remain art?

> Art for art's sake is an empty phrase. Art for the sake of truth, art for the sake of the good and the beautiful, that is the faith I am searching for (Sand, 1872).

Although it may be an obvious argument, that when we do not understand something such as experimental art, it can easily be dismissed as 'high-art' or 'ego-gratifying'. Are we then in danger of tarnishing all experimental art with the same brush? Art, by its nature, is subjective and it could be argued that art which

some might dismiss as ‘ego-gratifying’ might not intend to be but might actually be intended as a very sincere attempt at displaying emotion or sharing deep and meaningful feelings and experiences.

Luck (2020) has pointed out that music theatre audiences can be divided in their opinions about the work. In his personal experience, some people seem to fully comprehend the work, while others view it as a self-indulgent endeavour for the composer. These diverging opinions can arise for a variety of reasons, such as differences in personal taste, cultural background, or exposure to and knowledge of the genre. Additionally, it is possible that the composer's intentions may not always come across clearly to the audience, leading to confusion or misinterpretation of the work. However, it is important to note that such differences of opinion are not necessarily a negative, as they can help to foster lively and productive discussions about the work and its meaning. Ultimately, the success of a music theatre production depends on a complex interplay of factors, including the composer's vision, the performers' interpretations, and the audiences’ reception, which can vary widely from person to person.

Filoseta argues that though there may be valid personal artistic reasons for a composer to explore a particular area of interest to them, there are no valid ideological reasons for rejecting the possibility of expanding activity beyond that area (2006: 42). Essentially, the argument presented here is that the Concert-Theatre concept is a theoretical distinction for analytical discussion rather than a real-world categorisation, as once a composer has embarked on the deconstructive task of redefining musical performance, it becomes difficult to identify exactly where these traditional disciplinary boundaries are. As Filoseta argues, there are no valid ideological reasons for rejecting the possibility of

expanding activity beyond a particular area, and the theoretical boundaries of Concert-Theatre ultimately fade into music theatre (*ibid*.).

6.10 Psychological Response to Music Theatre

It is plausible to argue that the music theatre productions examined in these surveys had remarkable potential in terms of generating a high level of arousal, which could demonstrate positive or negative valence. Although many participants did show signs of such arousal, it is necessary to conduct a more thorough exploration in order to gain a complete understanding of the psychological influence that music theatre is capable of affecting within various brain structures. For instance, future research could explore how the music, lyrics, and stage performance in music theatre interact and affect different neural pathways, leading to distinct emotional and cognitive responses. Additionally, it may be useful to investigate how participants' individual differences, such as personality traits and cultural backgrounds, may shape their reactions to music theatre. By conducting more extensive research with a multidisciplinary approach, we can broaden our knowledge of the complex interplay between music and human psychology, and ultimately enhance our appreciation and application of music theatre as an art form.

6.11 Cognitive Responses

Cognitive responses to experimental music theatre are notable. The unconventional nature of the performance may challenge traditional patterns of thinking and perception, leading to cognitive dissonance and the revaluation of preconceived ideas. This cognitive engagement may foster a deeper understanding of the performance and its message. Many participants gave

stimulating conversation about the music theatre stimuli, but many failed to fully realise and express their emotional responses. This could indicate a number of potential reasons such as lack of cognitive stimulation; lack of appropriate vernacular; emotional immaturity or experiment anxiety. It would not be prudent to speculate on this, but it is important to acknowledge these possibilities.

6.12 Valence and Arousal

This data has demonstrated that music theatre has the ability to achieve both positive and negative valence. Despite the limited emotional response to certain works, it was surprising how many participants enjoyed the experimental music theatre performance. Many stated that they were interested in exploring the art form further or at least discovering more about the pieces they were shown. This data demonstrates that music theatre can evoke both positive and negative valence, which can be attributed to the complex nature of the art form. The experimental music theatre performance proved to be an enjoyable experience for many participants. It is worth noting that the participants who expressed interest in exploring the art form further were particularly intrigued by the way music and theatre were combined to create a novel and immersive experience. This suggests that there is a growing interest in experimental forms of music performance and that there is potential for this art form to reach a wider audience in the future.

Although there is much work still to be completed in this area, this study can confidently demonstrate evidence of both positive and negative valence in response to the work. It would be wrong to criticise this study for not producing significant results when as the objective of this project was to discover to what extent psychological arousal is achieved when observing experimental music

theatre stimuli. This study has been able to demonstrate that there is evidence for varying states of arousal in participants when subjected to varying types of music theatre performance. Music Theatre which was more explicit with its plot points appeared to connect with participants who reported a stronger emotional response. This included *SWEET TOOTH* which was particularly explicit about its depiction of abuse. This work resonated significantly with participants who were able to quickly determine the meanings behind the performers' actions.

The present research has demonstrated that participants found it challenging to assimilate their thoughts directly following the observation of the experimental music theatre stimuli and furthermore found it difficult to submit an appropriate emotional response to the researcher. It could also be argued that in some cases, participants could be found to suppress their true emotions.

6.13 Psychophysical Effects

This study provides minimal evidence that music theatre has any significant impact on heart rate arousal or physical MECs. The study did find, however, that participants reported a high level of emotional response to the music theatre performances. This suggests that while the physical effects may be minimal, the emotional impact of these performances may be significant. Future studies could explore this emotional response in more detail, potentially using methods such as surveys or interviews to gather more qualitative data. This data demonstrated that some participants felt music enhanced chills (MECs), but as de Fleurain and Pearce (2021, 890) acknowledge, 'it is becoming increasingly difficult to gain a comprehensive and integrated psychological picture of what MECs entail'. Mori and Iwanaga (2017: 1) argue that chills are 'one form of peak emotional responses'. If chills are to be believed as being highest arousal, then this data

can argue that the music theatre stimuli surveyed, failed to arouse participants to peak levels. During the experiments, it was difficult to observe these by eye and participants only reported a few occurrences. In future experiments, rigorous skin concurrence tests would need to be carried out to strengthen this evidence.

6.14 Facial Monitoring

During the experiments, it was observed that the participants displayed a limited range of emotions through their facial expressions. This was observed by Evason (2016), who claims that the British do not always give away their emotions via facial expressions. It was observed that while some participants did show subtle emotional cues throughout the experiments, such as furrowed brows or pursed lips, the majority of participants maintained a neutral expression throughout (Figures 6.1 and 6.2). This made it challenging to accurately determine the participants' feelings and emotional states. It is worth noting that there may be a variety of reasons for this lack of emotional expression, such as heightened concentration, or individual differences in emotional regulation. Further research could explore these factors in greater detail to better understand the nuances of emotional expression in different populations.

Figure 6.1: Male Participant with Neutral Expression During Experiments.

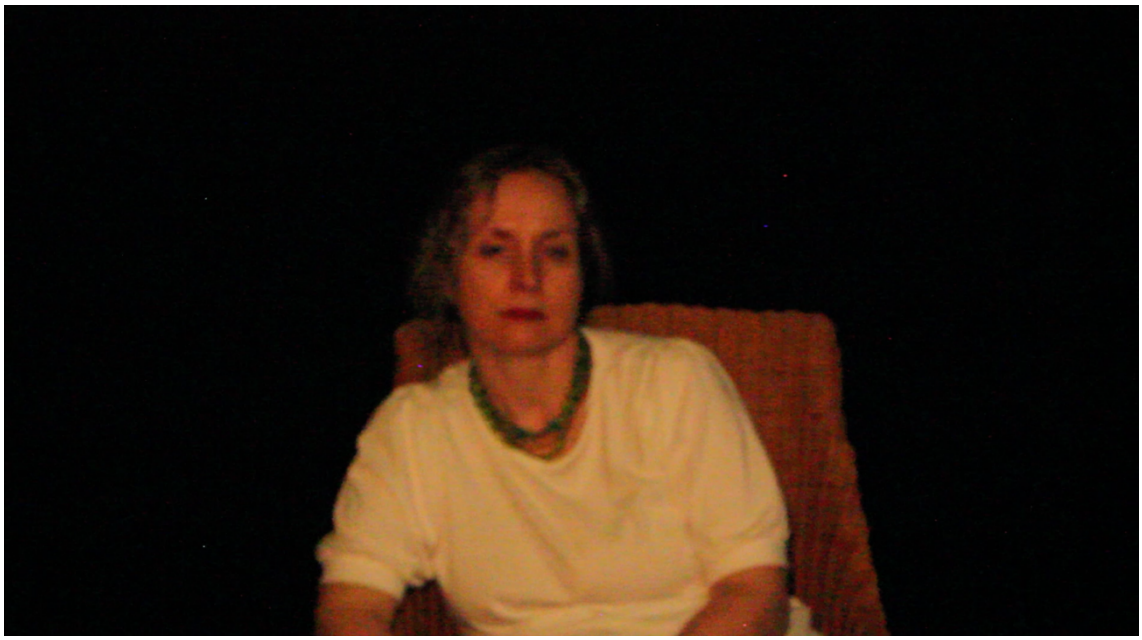


Figure 6.2: Female Participant with Neutral Expression During Experiments.

The data collected from the study indicates that the amygdala, which is understood to be the brain's centre for processing a fight-or-flight response, was not significantly activated during the observation of the music theatre stimuli. This provides evidence that the stimuli did not cause any significant stress or emotional arousal amongst participants. The self-reported data also supports this

conclusion, with the participants indicating that they experienced relatively low levels of arousal throughout the performance. While there were some exceptions to this trend, the statistical analysis of the data revealed that the majority of participants were not particularly excited or emotionally moved by the work. Overall, these findings suggest that the music theatre stimuli used in the study did not have a significant impact on the emotional state of the participants. Although this data was not successful in returning desired results, these served as an aide-memoir to the researcher to include observations such as foot tapping and disinterested facial expressions. There is significantly more evidence of non-verbal signalling to be found from observation rather than the facial recordings.

6.15 Heart Rate Monitoring

Present data indicated similar results to the facial monitoring. Participants were relaxed throughout the experiments, with only small sharp waves in some cases. This agreed with research carried out by Trappe and Voit (2006) who discovered that music without lyrics tended to decrease heart rate. Only four participants experienced an (extremely mild) increase in heart rate during the stimuli (Experiment C, S2). This therefore cannot prove or deny this hypothesis based on this data alone and further testing would be required.

Due to unfortunate funding restraints and technical complexities the equipment and software used was unable to export coherent ECG data. However, the key data points that were captured, fails to demonstrate any significance relevant to this study's enquiry.

6.16 Understanding Music Theatre

These results demonstrate the first study of its kind investigating psychological arousal, or in some cases de-arousal, in response to experimental music theatre stimuli.

6.16.1 Assimilating the Music Theatre Object

It is important to remember that participants were not only asked to interpret the music in this study, but also all the other theatrical elements which they had to assimilate, comprehend, and then produce the appropriate emotional response. The model (Figure 6.3) demonstrates how a person might go about assimilating the music theatre object. The model reads left to right and begins with the anticipation stage. This may be when the observer first enters the performance space, they take in the scenery, objects in the space, this might include physiological effects such as increased heart rate or nervousness. Following this stage, observers, or more accurately, audiences take time to observe the performance they are witnessing, listening to new sounds, new sonic media they may not have heard before. This comes with additional observations of the movement of performers, costumes, and development of plot or emotion being demonstrated to them. The next stage involves creating a response. This could be either consciously produced or unconsciously. This may also be immediate which could result in MECs, laughter, crying, and so on, or a more aesthetic response such as ‘I like this’ or ‘I did not like this’. The final stage is a considered response which develops sometime after observing the performance. This may be an altered view of the performance after one has had time to digest and allow the brain to attempt to make sense of the work.

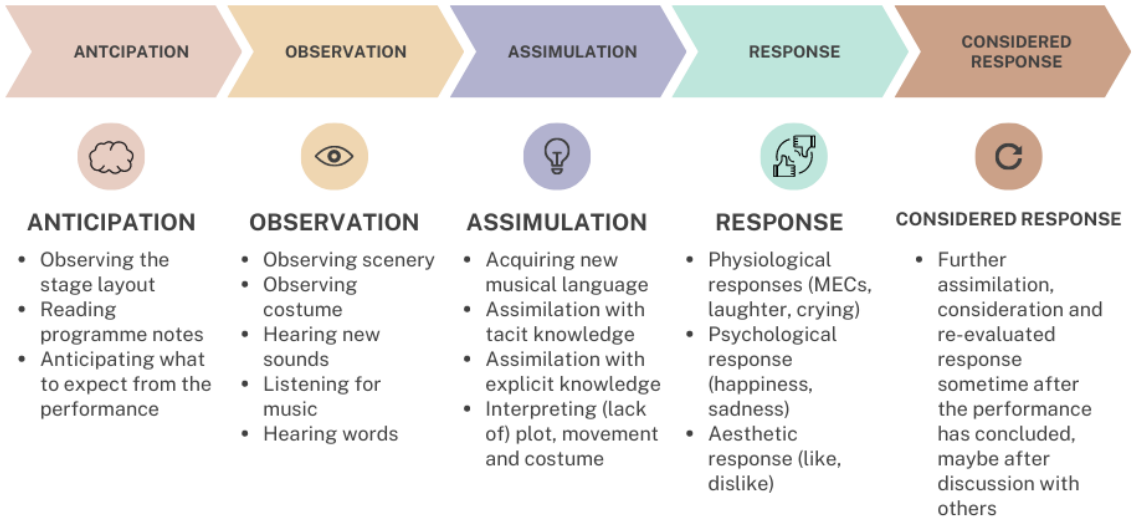


Figure 6.3: A Suggested Model for the Music Theatre Assimilation Process.

A model such as this may help future researchers to begin to understand how audience members can begin to comprehend complex music theatre pieces. Experiments in which participants could be asked to record their thoughts using this as a template may also help to further understand how humans interpret art in which they are non-experts.

6.16.2 Irrational Negative Emotional Response

Psychology is yet to fully uncover why humans sometimes react irrationally when they do not understand something, or because something is too challenging or complex to comprehend. One participant reported that they felt irrational anger towards a demonstrated stimulus, and they could not explain why, or rather did not wish to explain their reasonings out loud. If a music theatre work can induce that strong a reaction without the use of defamatory language, loud noise, disquieting or distressing visuals but only words, music, and action, then can this demonstrate the power that simplistic music theatre can exert.

6.16.3 Art and Emotion

Art is a complex and multifaceted subject that often defies simplistic categorisation. Although we might be tempted to seek clear-cut answers to questions of valence appraisal, the reality is that interpreting art is often a subjective and highly personal experience and cannot be easily explained with science. In fact, because each individual brings their own unique background, experiences, and beliefs to their interactions with art, it is almost impossible to make blanket statements about how people will respond emotionally to a particular work.

Despite these challenges, researchers have made important strides in understanding the emotional power of art. By conducting studies that bypass the flawed self-reporting method, it may be possible to form a more accurate idea of how we emotionally interpret unfamiliar works of art. For example, by measuring physiological responses such as heart rate or skin conductance, researchers can gain insight into how the body responds to different types of art stimuli. Similarly, by examining brain activity using techniques such as functional magnetic resonance imaging (fMRI), researchers can gain a better understanding of the neural mechanisms that underlie our emotional responses to art.

Of course, even these methods are not without their limitations. For example, it is often difficult to generalise results from laboratory-based studies to real-world settings. There are many other factors that can influence our emotional responses to art. Nevertheless, by continuing to explore the emotional power of art, we can gain a better appreciation for the ways in which art can move and inspire us, even when we are unable to put our feelings into words.

When it comes to self-reported data, it is crucial to strike a balance between reviewing music theatre work and acknowledging the emotional

response that may accompany the process. In some cases, self-reporting can be challenging, as individuals may struggle to separate their emotions from an objective evaluation of their work. However, by taking the time to reflect on one's emotional state and actively engage in the review process, individuals may find that they are better able to provide accurate and meaningful self-reported data. Therefore, while it is important to remain objective, it is equally important to acknowledge and address any emotional responses that may arise during the self-reporting process.

6.16.4 Widening Access to Music Theatre

When it comes to enjoying music theatre, could video be the best option? While some might argue that it allows for greater freedom for the viewer with a more personalised experience, live art puritans might disagree. For instance, there is something to be said about the thrill and excitement of seeing a live performance in person (although currently, there is a lack of empirical investigation examining arousal while observing live performance). Being in the same room as the performers and feeling the energy of the crowd can truly elevate the experience. Additionally, live performances offer a unique opportunity to witness the creativity and improvisation that is inherent in live theatre. While video recordings can capture some of this magic, they can also fall short in conveying the full spectrum of emotions and sensations that make live theatre so special. Ultimately, the decision of whether or not to opt for video recordings when enjoying music theatre, is a matter of personal preference and depends on the individual's priorities and values.

In the midst of the pandemic, the performing arts industry has been greatly affected. With restrictions in place, traditional opera and musicals could not be

performed in front of live audiences. With the ever-developing technology, there is a possibility to explore the digital domain and create music theatre works which could be enjoyed online, and further widening participation beyond the geographical limitations of a physical theatre. These performances allow audiences from different parts of the world to enjoy the same show at the same time, without having to travel. Additionally, online performances can be recorded and re-watched, providing an opportunity for people to relive the experience at their own convenience and even feed into educational workshops. The transition from traditional theatre to digital theatre requires a different set of skills and expertise. Digital technologies such as virtual reality, 3D animation, and motion capture can be used to create immersive experiences that go beyond what is possible in a traditional theatre setting. This presents an exciting opportunity for artists and creatives to experiment with new forms of storytelling and push the boundaries of all music-driven theatre. Overall, the call for online opera and musicals in the recent Sars-Cov-2 pandemic has accelerated new possibilities for the performing arts industry. While the transition to digital theatre may not be easy, it presents an opportunity for the industry to evolve and adapt to the changing times. Devlin (1992, 78) suggests that it would be beneficial to launch some form of marketing campaign that not only promotes but also explains what 'music-theatre' is. He suggests this would help to increase understanding of the artform and may attract a broader audience to the genre. While Devlin does not offer any specific recommendations on how such a campaign could be implemented, a modern-day version could involve a range of strategies such as social media marketing, targeted advertising, collaborations with other arts organisations, and educational programmes. For instance, hosting workshops with music theatre at the centre, or partnering with schools, colleges and

universities could help to introduce the genre to a younger audience and cultivate future interest in it. Ultimately, a well-planned marketing campaign would have the potential to not only increase the visibility of music. Theatre but also enrich the cultural landscape by exposing more people to the artform. Another consideration is to create a centralised and well catalogued achieve for music theatre practice, spanning its creation and emergence in the 1960s to the present day. This could include scores, composer letters, programmes, rehearsal notes and any existing literature relating to the field. This would allow for future research which could more accurately determine studies such as this present study to examine psychological and emotional responses and allow researchers to draw conclusions and design experiments based on a considered history.

6.16.5 The Problem with Music Theatre?

Although it was slightly beyond the scope of this study, the perception of music theatre as an art form was not necessarily met with distain or total bemusement. Instead, participants were more concerned which those pieces they were unable to connect with emotionally, or more specific aesthetics of certain pieces. Although we cannot say conclusively that this was the case, this study highlighted no real prevarications to successfully creating music-performative work within this format. It could be considered that more music theatre production could enrich British culture as it once did in the 1960s and 70s, British society is crumbling with prevailing issues such as cultural recognition, cost of living, the potential for war and rapid climate change (Thorp and Kennedy, 2010). With a growing sense of urgency within modern society, and funding being funnelled elsewhere, could it be that art is unable to respond in the same way it once did?

This thesis proposes that music theatre as a format is not so challenging or alienating to the layperson. The act of music performance with additional costumes, speech and complex musical language can be seen in theatres up and down the country. Instead, the underlying cause must therefore rest with the composers' methods of communication. Often those representational and abstract art works which may be cognitively challenging, may be and where composers struggle to communicate their thoughts in a way in which would be comprehensible to non-experts or the layperson. The same can be argued with certain fine art without a significant lack of context and explanation, it is unreasonable to expect a wide number of people to qualify the work with appreciation. The same could be justified for music theatre performance, which could be argued as *just* another form of fine art, except it is performed, live and unique. Art, by its very nature is highly subjective and how you interpret art varies from the observer to the producer. Artists also reserve the right to choose to produce work for the few and not the many.

There may be many reasons why certain people cannot fully appreciate certain, idiosyncratic work. These range from cultural backgrounds, socio-economic or simply a general lack of exposure and education in this area of philosophy. Some other contributing factors may well be purely aesthetic. Musical theatre audiences are often exposed to the music beforehand, with the widely produced and digitally disseminated cast recording which has been adopted from opera where gramophone records captured virtuosic performance, which could only have been heard in concert or opera halls before. This familiarity often leads to the listener purchasing a ticket for the show in question, where they have an expectation of what they will hear that evening. There are very few recordings of music theatre pieces available which has inhibited a wider familiarity of the art

form. It can often be very difficult to put this type of performance on recording. Some pieces rely on aleatory (chance) performance or audience interaction. Sometimes, the music simply does not make sense without the staged visuals. It can also be argued that operatic works and musical theatre works rely on word of mouth to engage new audiences, thus leading to advance ticket sales and often extensions to runs. Music Theatre works often last for a couple of performances or are performed as part of a programme evening which inhibits the opportunity for it to be discussed. Newer music theatre pieces, by their nature are significantly shorter than the lavish three act opera or two and a half hour run time of a typical West End musical, making it difficult to become worthy of a 'night out'. Music Theatre performances were historically found at specialist institutions, (Universities such as York, or Manchester, for example) where the general public may not have access to in some cases or student productions which may not be able to afford to advertise outside of their campus community. Although these are hypotheses and further survey would need to be carried out to fully understand audience trends, these reasons might be more believable than a complete psychological and aesthetic dislike for the artwork. As we can quite clearly see from *SWEET TOOTH* performance (2018), the hall is full, and the audience appear to be engaged with the work.

Figure 6.4: Sweet Tooth St George Performance with full Audience (Mitchener, 2018: 17’36”).

Although it appears that there is not necessarily a problem with audiences willing to observe the work, it may be that the composers themselves lack an ability to convince audiences that their work is of high aesthetic value in a way which speaks to them. It could be considered that artists may create artwork for purely monetary reasons, yet on the other hand simply for their own personal satisfaction.

6.17 Music Theatre Decline and Resurgence

Earlier literature demonstrated that there was significant decline in British music theatre production post 1970 (Hall, 2015), a decline which literature fails to adequately explain. This research aimed to discover how strongly potential audiences responded to contemporary music theatre stimuli, and whether the

decline in performance could be attributed to emotional or aesthetic barriers. The earlier literature review demonstrated that there was a pre-existing knowledge base for the field of music theatre, although there was little to no research addressing psychological comprehension of the art form; with little efforts so far to fully realise the decline in public popularity yet continued academic interest.

One possible reason for British composers' waning interest in music theatre could be traced back to the specific period when it was created. Music Theatre was first created by idiosyncratic composers at specific universities and art spaces within Britain. However, as the art form evolved, it may have become more difficult for contemporary composers to find their place within it or to innovate within its established boundaries. Further research is needed to explore these hypotheses and to gain a more comprehensive understanding of the decline in British music theatre production. Hall (2015: 167) suggests that 1974 marked the end of the flourishing music theatre in Britain. He suggests that the adverse economic effects on the 1973 oil crisis caused composers to abandon the desire to experiment and shock and made efforts to pursue a more sombre and mature attitude towards their work. Maxwell Davies supports this claim, noting that the composers of the 1960s shared a sense of 'optimism', which 'evaporated' after 1973 (*in* Hall, 2015: 275). General lack of interest in music theatre was also fuelled by very few ensembles willing to perform the work (Hall, 2015: 276). This research has demonstrated that music theatre is not completely forgotten or merely a relic of a long-lost-era, but has certainly seen a re-framing and re-imagination and has even enjoyed a small resurgence in Britain and Ireland, particularly with female composers who are finding new innovations when presenting their art. As Hall (2015: 275) observes, 'composers of music theatre felt the need to be simpler, more direct and less experimental than they

had been'. This ethos continued thirty years later and beyond and could be arguable for contemporary music theatre performance. Elaine Mitchener often attests in interviews that she is a performer first and composer second:

> "I consider myself a performer who composes — in that order, really," she said. "But to me," she added, "the responsibility of any performer is to really liberate the score from what you see (*in* Morris, 2023).

This altering of the historic composition of music theatre pieces leads to a re-shaping of the way they are created. This may lead to a further resurgence, inviting works from similar performance artists. The never-ending no-win situation the artform finds itself in is that there is little demand for music theatre, therefore it often becomes forgotten. Audiences are quick to vote upon what type of work they want to see (reflected through ticket sales), perhaps composers would benefit from researching and sourcing related topics which are relevant to their audience and avoid a self-driven and self-centred attitude which could appear alienating to potential audiences.

Further study would not only help us to understand the preferences and interests of the audience, but also provide us with valuable insights into how we can improve the performances to attract a larger audience. For instance, composers could incorporate elements of contemporary music or introduce more interactive activities during the performances. Of course, it is not possible to force people to attend music theatre performances, but we can certainly encourage them to do so, and with modern day influencing, there may well be significant possibilities. Additionally, collaboration with local schools, colleges, or universities to promote the events and offer discounted tickets to students. By doing so, we may be able to broaden the appeal of the music theatre genre and attract a wider range of audiences, and maybe inspire future creators. While conducting such a study may be challenging, it is certainly a worthwhile

endeavour that can help us improve the quality and popularity of these performances in the long run. This education is supported by Graham Devlin's report on opera and music theatre (1992). Devlin highlights that education may hold the key to addressing the issue at hand. Additionally, Devlin also observes that funding of these genres is an integral and strategic necessity. One potential solution is to integrate music theatre into secondary school curricula. This present research highly recommends that music theatre be included at undergraduate level teaching, where the potential and opportunities for producing collaborative music theatre performance is much greater.

> Given that most of the professional groups of the 1980's that performed the Music Theatre repertoire arose out of universities, it is not illogical to suppose that if there is to be a revitalization of the genre then it too will emerge from those same institutions; and while it is too soon to predict whether recent changes in the structuring of Higher Educational and the introduction of modularization in many universities will have a significant effect either to the benefit or detriment of contemporary music, It is to be hoped that Music Theatres still has the potential to be an artwork of the future (Halfyard, 1996: 392).

By incorporating music theatre into formal education, students can not only gain a deeper understanding and appreciation of the performing arts, but also develop valuable skills such as teamwork, creativity, and self-expression. These skills can prove to be invaluable in their personal and professional lives and may even contribute to their overall well-being, by promoting and building self-confidence, self-esteem, and reliance. Therefore, it is crucial that educators recognise the importance and potential impact of music theatre and take steps to incorporate it into their curricula. There is something inherently British about music theatre (albeit derived from European concepts), and it could be an important piece of British culture that we may be in danger of losing, therefore should not be ignored or dismissed. If the Wardour and Dartington summer schools can be attributed to

the emergence of the Great British Music Theatre phenomenon; could a new catalyst finally bring us the second act?

6.18 Towards Gesamtkunstwerk

Thom Andrewes proposes a shift in perspective for music theatre, suggesting a re-framing of the genre as Live Art (*in* Rebstock and ITI Germany*,* 2020: 140-141). This idea provokes some interesting questions about how we might approach future music theatre projects. For example, how might this re-framing impact the way we think about funding for music theatre performances, or the ways in which we might incorporate new technologies and intermediality into our work. While Andrewes' overall argument is certainly sound, it would be prudent to be cautions to label these works as "Live Art Opera." It is arguably important to distance music theatre from opera to avoid perceptions of elitism and negative assumptions. Music Theatre as a term is becoming too closely linked with musical theatre, another pitfall of the English vernacular (evident with participants often conflating the two). Perhaps a more neutral or inclusive term could be used instead. In any case, it is becoming more evident that reliance on technology and intermediality is becoming increasingly important in the world of music theatre. As we continue to explore new possibilities for this art form, we must also remain mindful of the ways in which we frame and present our work to audiences.

If we delve deeper into the Wardour agreement (*c.*1964), it becomes apparent that it strongly supports a shift away from opera. Perhaps, it is necessary to continue along this path in order to maintain the unique identity of music theatre. One way to do this could be to explore alternative forms of performance, such as experimental theatre or performance art, which still incorporate musical elements. Additionally, we could also consider expanding the

scope of music theatre to include a wider range of musical genres, such as jazz, rock, and hip-hop, while still maintaining a focus on the socio-political message. By doing so, we can broaden the appeal of music theatre and attract a more diverse audience, while still staying true to its core values and principles.

6.19 Recommendations for Further Study

There is significant potential for further research into the area of brain activity when viewers are exposed to unfamiliar experimental performances. While existing studies have shown that viewing art can activate the brain's reward system (Magsamen, 2019: 3), there is still much to learn about the neural systems that are activated in response to different types of art. For instance, fMRI imaging has been used in studies to isolate the neural systems activated by paintings (Vartanian and Skov, 2014: 52). By using similar techniques to study other art forms, we can gather more comprehensive data about brain waves and neural networks. In addition, there is also a wide range of potential research to be done on the effects of observing music theatre on mood. One possible avenue of research is to investigate the use of profile of mood states (POMS) to determine whether music theatre has the potential to elevate or de-elevate mood (McNair, Droppleman, and Lorr, 1971). By studying the effects of music theatre on mood, we can gain a deeper understanding of the impact that art can have on our emotional well-being.

6.20 Conclusions

The research conducted in this study has increased our current understanding of the experimental music theatre art form and has also contributed to the body of knowledge in the fields of music theatre and music psychology. Through its

empirical findings, it has demonstrated a new avenue of inquiry into the intricate and multifaceted psychology underlying music theatre, thereby increasing awareness of this area of research. This not only enriches our understanding of the subject but also paves the way for more comprehensive research endeavours in the future.

This research has demonstrated that music theatre has the potential to elicit a lasting psychological impact that the examined music theatre pieces had on the participants. This impact becomes clearer when the contextual information surrounding the music was deliberately withheld from the participants. This aspect of the study underscores the transcendent power of this art form, suggesting that its ability to evoke emotions and stir the psyche is not solely reliant on narrative or contextual cues. Rather, it points to a deeper, more primal connection between music and the human psyche, one that is yet to be fully understood. These intriguing findings serve as a testament to the untapped potential of music theatre as an art form. They imply that its capacity to engage and resonate with audiences extends beyond the boundaries of current exploration. This realisation opens the door to a realm of possibilities where music theatre, particularly of the experimental variety, could emerge as a transformative force in the cultural landscape.

In light of these discoveries, this research asserts that future composers have a pivotal role to play in the evolution of experimental music theatre. Their creative prowess holds the potential to unlock entirely novel and powerful psychological experiences for audiences. It is within the realm of possibility that experimental music theatre could become more than just a formative art form, but more established and respected amongst the likes of opera.

While this research project has provided a glimpse into the untapped potential of music theatre, it represents just the tip of the iceberg. To fully comprehend and harness the psychological depth and impact of this art form, a concerted effort in terms of continued research and exploration is imperative. This journey of discovery holds the promise of not only enriching our cultural landscape but also fundamentally transforming the way we understand and engage with music and theatre, making it an area suitable for future innovation and creativity.

Chapter Seven

Conclusions

7.1 Introduction

The aim of this body of research was to investigate the psychological effects of music theatre on individuals and to explore whether this art form is facing emotional barriers that hinder its artistic creation. This thesis has rigorously examined the historical context which has provided a framework for an initial exploration of the psychological arousal found when observing experimental music theatre performance. This thesis has discovered that music theatre has the ability to initiate mid to high levels of arousal and strong valence in some participants. This thesis has contributed to a continued empirical work, which has not yet been performed with a specific concentration on the music theatre art form. Although there is significant work yet to be completed in this area, this thesis has laid the groundwork for further study by providing a substantial review of current available literature, bringing together archival information, decades of previous research which has previously been carried out autonomously and outside of the localised specificity that music theatre appears to exist within. This present research has also interrogated music-psychological research methods in order to demonstrate that existing research experiments are sufficient to survey psychological responses to music theatre. However, there is more work required to further develop correct application would be prudent, and slight alterations may be required to fully achieve research aims and objectives which would allow for more rigorous exploration of the levels of arousal demonstrated by participants. This chapter will synthesise and demonstrate the overall research outcomes and explain the significance of this research.

7.2 Main Findings

The study explored how strongly audiences reacted to experimental music theatre performances. It found that while some viewers experienced emotional arousal and increased positive feelings, they did not form deep connections with all aspects of the performances. Physiological measures did not consistently show emotional engagement. The study also noted that the unconventional nature of these performances could lead to cognitive dissonance and challenge preconceived ideas, fostering a deeper understanding. However, not all participants were able to achieve strong cognitive engagement. Some experienced MECs, but not all stimuli triggered them, and it was seen in a small sample of participants. Valence increased to varying degrees for all participants, but non-verbal signalling (such as body language) and heart rate data did not provide significant evidence of emotional response. Further research is needed to understand whether visual aesthetics or musical elements primarily influence valence arousal.

In summary, this study highlights the intricate relationship between experimental art and human psychology, showing that it can evoke profound emotional, cognitive, and behavioural reactions, though not consistently positive ones. Although there were some statistical difference found between musicians and non-musician emotional responses. These were not extensive and could most closely be aligned to performative aesthetics rather than directly to physiological responses.

7.3 Research Aims

This research aimed to explore how contemporary audiences emotionally and aesthetically respond to experimental music theatre performances. It sought to provide valuable data on how audiences comprehend these complex performances, and whether they feel alienated by them. This study wanted to explore whether there was a specific emotional barrier between the composer's message and the audience. This study also aimed to clarify misunderstandings and misconceptions about this type of art. Through this research, significant insights into audience emotional and aesthetic responses will be gained, helping identify the elements that resonate most with audiences and contribute to the overall experience. Ultimately, the research aims to enhance our understanding of music theatre and provide valuable information for both artists and audiences.

7.4 Research Objectives

This research was successful in achieving its objectives which were laid out at the beginning of the research project. To recapitulate, these were:

1) To highlight trends in emotional responses to specific music theatre performance and whether there is something particular creating an emotional barrier between the composer and audience member.
2) To discover what thoughts audiences have immediately following the observation of music theatre performance and how these thoughts translate emotionally.
3) To understand the state of the art, and the psychological impact the work has on contemporary audiences.

The research addressed all of these objectives. The project was successfully able to highlight trends in emotional responses to the experimental music theatre stimuli and has provided data which supports the academic argument that music theatre can be alienating to potential audiences due to a misguided communication of the composers vison and objectives.

This research has successfully identified audience thoughts and emotional responses directly after observing stimuli. The research has demonstrated that participants found it challenging to assimilate their thoughts directly following the observation of the stimuli. Furthermore, they found it difficult to surrender an appropriate emotional response or, perhaps attempted to suppress their true emotions.

This body of work has discovered that the state of the art is a relatively dismal one, in Britain although there is some hope for new intermedial practice as new technologies develop.

7.5 Research Questions

Overall, this research was successful in providing answers to these pre-defined research questions. These have been recapitulated here, for clarity.

1) What levels of valence and arousal are achieved when observing music theatre stimuli?

This study found that experimental music theatre can evoke mid to high levels of emotional valence and significant arousal in most participants. However, deep emotional connections with the work were often lacking, and many viewers felt confused and needed more context to fully engage. Musicians tended to have slightly higher emotional arousal responses than non-musicians, although these

were not statistically significant. Aesthetic responses were more varied, with some participants expressing irritation, intrigue, or dismissal of theatrical elements. The presence of significant visuals or extra-sonic material sometimes distracted participants from the music itself.

2) Is there a perceived emotional barrier between composer's messages and audience member? If so, what are the contributing factors?

The study suggests that there may be an emotional barrier between composers messages and audiences in music theatre. Some participants found it difficult to empathise with characters and felt uncomfortable or ostracised when engaging with the work. Composers who provided more context from the beginning appeared to create more emotionally engaging works. The choice of musical language, such as atonal or post-music elements, appeared to impact audience engagement, with familiar tonal music being somewhat more appealing, triggering better emotional valence.

3) What psychological impact can music theatre have on audiences and what consequences could these have on the development of the art form?

Although music theatre has the potential to evoke strong emotional responses in audiences, participants often focused more on the sonic aspects than the overall synthesis of music and theatre. Lack of exposure to experimental sonic performance in education might contribute to a reluctance among young adults to engage with a broader musical language. Emotions may be crucial to the longevity of music theatre, and it could lead to arguments that these distractions from the music-making by theatrical elements could hinder its success. Contemporary music theatre works are often performed as standalone pieces,

which may affect their reception compared to historical contexts where they were presented alongside other music performances.

7.6 Research Impact

This thesis has laid the groundwork for further empirical study investigating emotional responses to music theatre as a sonic entity. This so far uncharted territory offers researchers the opportunity to explore creative decisions made by directors, composers, and choreographers impacting the psychological experience of both performers and audiences. Further research interest in this area may contribute to a more significant resurgence of the music theatre art form for a new generation of music and theatre audiences. This research has been presented at twelve UK conferences, and one international, demonstrating a broad reaching dissemination. Parts of this research have been published[14] which additionally demonstrates that this field has the potential to grow and develop further.

7.7 Research Significance

The significance of this body of research extends far beyond the confines of the small-scale domain of music theatre, transcending its boundaries to illuminate the broader realm of music-driven performance as a whole. Within this expansive context, the research methodologies employed in this current study hold the potential to catalyse transformative insights and advancements.

In the ever-evolving landscape of music-driven performance, this research serves as a spearhead, offering a comprehensive framework for the evaluation

[14] Details have been included in the front matter of this volume.

and understanding of experimental music-driven performances. By systematically exploring various facets of this genre, it not only unveils the intricate layers of artistic expression but also delves into the nuanced realm of audience responses, particularly in terms of aesthetics, emotional engagement, valence, and arousal.

By dissecting the interplay between musical elements, theatrical components, and the audience's emotional and psychological experiences, this research provides a blueprint for assessing the impact of music-driven performances on spectators. This comprehensive approach allows for a nuanced exploration of how music, when seamlessly integrated into performance, can evoke a spectrum of emotions, ranging from elation to melancholy, and often influences the overall affective states of those in attendance.

Moreover, the methodologies employed in this study offer a versatile toolkit that can be readily adapted and applied to a wide array of music-driven performances across different genres and scales. Whether it be Avant-garde experimental pieces, grand orchestral compositions, or intimate acoustic sessions. This present framework established here promises to be an invaluable resource for researchers, artists, and performers seeking to understand, refine, and enhance the emotional impact of their work.

Ultimately, this body of research extends an invitation to the broader field of music-driven performance to embark on a journey of self-exploration and innovation. It encourages practitioners to explore new horizons, push creative boundaries, but, most importantly, connect with their audiences on a profound emotional level. In doing so, it enhances not only the world of music theatre but also contributes to the ongoing evolution and enrichment of the entire landscape of music-driven performance.

7.8 Recommendations for Future Research

This research has found that there is significant scope for further exploration into live brain activity, while observing experimental music performance. This may include the use of fMRI scanning or Electroencephalogram (EEG) monitoring. These techniques may further unlock understanding of how the human brain responds to experimental music theatre. This may allow researchers to draw further conclusions, and further progress the art form and inform composers of the best way to make meaningful connections with audiences. Although the exposure of this research on composers is yet to be fully realised, it can be argued that the potential impact could therefore be significant for this art form. A survey of composers investigating the application of this research may also be appropriate. There is also an urgent need to create some form of archive to help protect what little information we hold directly involving the music theatre art form, and the activities of composers in the 1960s and 1970s. This is something which could be achieved relatively easily, and without a large amount of funding.

7.9 Final Conclusions

This research was originally based on Coker's rudimentary workshop methods and has evolved to become informed by music-psychological experiments which has empirically evaluated audience valence, arousal, and aesthetic emotional responses to experimental music theatre performance.

The field of music theatre is a complex and dynamic one, encompassing a wide range of artistic elements, including music, acting, dance, stage design, and storytelling. Investigating the psychology behind music theatre performance means delving into the intricate interplay of these elements in the context of live performance.

This thesis is the first of its kind to bring focus to the exploration of the psychology of music theatre and survey potential audiences' emotional and aesthetic responses to the work. Ultimately, the success of a music theatre production depends on many factors, including the quality of the performances, the strength of the storytelling or composer's message, and the ability of the audience to connect with the material on an emotional level. As Janet Halfyard (1996: 392) poignantly observes: 'it must be pointed out that Music Theatre is not dead yet'.

Bibliography

Adlington, R. 2005. Music theatre since the 1960s. In Cooke, M. ed. *The Cambridge Companion to Twentieth-Century Opera*. Cambridge Companions to Music. Cambridge: Cambridge University Press.

Adlington, R. 2018. Politics and the Popular in British Music Theatre of the Vietnam Era. *Journal of the Royal Musical Association*, 143(2): 433–471.

Andrewes, T. 2016. What is Music Theatre? Available at: https://www.academia.edu/33702237/What_is_Music_Theatre. [Accessed 3 November 2021].

Anon. 2021a. British Art Show 9 (Aberdeen) Digital Exhibition Guide.pdf.

Anon. 2021b. Code of Ethics and Conduct. https://explore.bps.org.uk/content/report-guideline/bpsrep.2021.inf94 [Accessed 7 November 2021].

Anon. N.d. Noh Drama. Available at: http://afe.easia.columbia.edu/special/japan_1000ce_noh.htm [Accessed 5 July 2023].

Anon. 1968. *Theatres Act*. Statute Law Database. https://www.legislation.gov.uk/ukpga/1968/54 9 January 2022.

Anon. N.d. Mug Grunt. [Photograph].

Apel, W. 1969. *Harvard Dictionary of Music: Second Edition, Revised and Enlarged*. Cambridge, MA: Belknap Press.

Arjmand, H.-A., Hohagen, J., Paton, B. & Rickard, N.S. 2017. Emotional Responses to Music: Shifts in Frontal Brain Asymmetry Mark Periods of Musical Change. *Frontiers in Psychology*, 8.

https://www.frontiersin.org/articles/10.3389/fpsyg.2017.02044 7 November 2023.

Bannister, S. & Eerola, T. 2018. Suppressing the chills: Effects of musical manipulation on the chills response. *Frontiers in Psychology*, 9.

Beard, D. 2012. *Harrison Birtwistle's Operas and Music Theatre*. Illustrated edition. Cambridge; New York: Cambridge University Press.

Bellier, L., Llorens, A., Marciano, D., Gunduz, A., Schalk, G., Brunner, P. & Knight, R.T. 2023. Music can be reconstructed from human auditory cortex activity using nonlinear decoding models. *PLOS Biology*, 21(8): e3002176.

Beltzer, M., Nock, M., Peters, B. & Jamieson, J. 2014. Rethinking Butterflies: The Affective, Physiological, and Performance Effects of Reappraising Arousal During Social Evaluation. *Emotion (Washington, D.C.)*, 14.

Berlyne D. E. (Ed.) 1974. *Studies in the new experimental aesthetics: Steps toward an objective psychology of aesthetic appreciation*. Oxford, England: Hemisphere.

Beyst. 2012. 'Mimesis: reconsideration of an apparently obseolete concept' by Stefan Beyst. Available at: http://d-sites.net/english/mimesis.html [Accessed 6 November 2023].

Bloomfield, S. 2015. Contemporary Opera & Music Theatre Showcase. *British Council Music*. https://music.britishcouncil.org/projects/music-showcases/contemporary-opera-music-theatre-showcase [Accessed 25 November 2020].

Bogert, B., Numminen-Kontti, T., Gold, B., Sams, M., Numminen, J., Burunat, I., Lampinen, J. & Brattico, E. 2016. Hidden sources of joy, fear, and sadness: Explicit versus implicit neural processing of musical emotions. *Neuropsychologia*, 89: 393–402.

Bone, J.K., Bu, F., Sonke, J.K. & Fancourt, D. 2023. Longitudinal Associations Between Arts Engagement and Flourishing in Young Adults: A Fixed Effects Analysis of the Panel Study of Income Dynamics. *Affective Science*, 4(1): 131–142.

Bonnet, L., Comte, A., Tatu, L., Millot, J.-L., Moulin, T. & Medeiros de Bustos, E. 2015. The role of the amygdala in the perception of positive emotions: an 'intensity detector'. *Frontiers in Behavioral Neuroscience*, 9: 178.

Bornoff, J. (Ed.) 1968. *Music Theatre in a Changing Society The Influence of the Technical Media*. First Edition. Unesco.

Brattico, E. 2015. From pleasure to liking and back: Bottom-up and top-down neural routes to the aesthetic enjoyment of music. In *Art, aesthetics and the brain*. New York, NY, US: Oxford University Press: 303–318.

Cardew, C. 1969. A Scratch Orchestra: Draft Constitution. *The Musical Times*, 110(1516): 617–619.

Céspedes-Guevara, J. 2016. Towards a Constructionist Theory of Musically-Induced Emotions. PhD. University of Sheffield.

Chabin, T., Gabriel, D., Chansophonkul, T., Michelant, L., Joucla, C., Haffen, E., Moulin, T., Comte, A. & Pazart, L. 2020. Cortical Patterns of Pleasurable Musical Chills Revealed by High-Density EEG. *Frontiers in Neuroscience*, 14. Available at: https://www.frontiersin.org/articles/10.3389/fnins.2020.565815 [Accessed 7 November 2023].

Chan, M., Au, W.T. & Hoyan, C. 2019. Exploring theater experiences among Hong Kong audiences. *Cogent Arts & Humanities*. Available at: https://www.tandfonline.com/doi/abs/10.1080/23311983.2019.1588689 [Accessed 8 December 2021].

Charland, L.C. 2005. Emotion Experience and the Indeterminacy of Valence. In *Emotion and consciousness*. New York, NY, US: The Guilford Press: 231–254.

Cherry, K. 2022. Emotions and Types of Emotional Responses. *Verywell Mind*. Available at: https://www.verywellmind.com/what-are-emotions-2795178 [Accessed 20 July 2022].

Chin, T. & Rickard, N. 2012. The music USE (MUSE) questionnaire: An instrument to measure engagement in music. *Music Perception: An Interdisciplinary Journal*, 29: 429–446.

Cohen, L., Manion, K. & Morrison, K. 2000. *Research Methods in Education*. 5th ed. London: Routledge.

Coker, T. 2006. *Dramma Per Musica - Towards a New Music Theatre*. PhD. University of Reading.

Cox, G., Crickmore, L., Plummeridge, C. & Sergeant, D. 2012. SEMPRE: Forty years on. *Psychology of Music*, 40(5): 523–538.

Devlin, G. 1992. *Begger's Opera: A discussion document on small-scale touring opera and music-theatre in the U.K.* London: Calouste Gulbenkain Foundation.

Dey, I. 1993. *Qualitative data analysis: a user-friendly guide for social scientists*. London: Routledge.

Dimitriev, D., Indeykina, O. & Dimitriev, A. 2022. *The effect of auditory stimulation on the nonlinear dynamics of heart rate: the impact of emotional valence and arousal*. Physiology. Available at http://biorxiv.org/lookup/doi/10.1101/2022.03.19.484969 [Accessed 20 July 2022].

Dobosh, M.A. 2017. *The SAGE Encyclopaedia of Communication Research Methods*. SAGE Publications, Inc.

Donnelly, M. 2005. *Sixties Britain: Culture, Society and Politics*. London: Routledge.

Drummond, J.D. 1982. Walter Felsenstein inszeniert Mozart/Die Hochzeit des Figaro I. Koban, ed. *Performing Arts Journal*, 6(1): 143.

Dunbar, Z. 2012. Music theatre and musical theatre. In C. Dymkowski & D. Wiles, eds. *The Cambridge Companion to Theatre History*. Cambridge Companions to Literature. Cambridge: Cambridge University Press: 197–209.

Van Dyck, E., Six, J., Soyer, E., Denys, M., Bardijn, I. & Leman, M. 2017. Adopting a music-to-heart rate alignment strategy to measure the impact of music and its tempo on human heart rate. *Musicae Scientiae*, 21(4): 390–404.

Dyer, D. 2006. *Research in psychology: a practical guide to methods and statistics*. Oxford: Blackwell.

Endrich, T., Harrison, J., Hoyland, V., Marsh, R., Rands, S., Rands, B., Stanton, S., (1973) 'Clap' University of Warwick, 24th October 1973 [Event Programme].

Evason, N. 2016. British Culture - Communication. Cultural Atlas. Available at: http://culturalatlas.sbs.com.au/british-culture/british-culture-communication 5 [Accessed 5 December 2023].

Faraguna, U., Ferrucci, M., Giorgi, F.S. and Fornai, F. 2019. Editorial: The Functional Anatomy of the Reticular Formation. *Frontiers in Neuroanatomy*, 13. Available at https://www.frontiersin.org/articles/10.3389/fnana.2019.00055 [Accessed 8 March 2023].

Faryadi, Q. 2019. PhD Thesis Writing Process: A Systematic Approach—How to Write Your Methodology, Results and Conclusion. *Creative Education*, 10(04): 766–783.

Filoseta, R. 2006. *Making the Act of Music Visable*. PhD. University of Hertfordshire.

De Fleurian, R. & Pearce, M.T. 2021. Chills in music: A systematic review. *Psychological Bulletin*, 147(9): 890–920.

Foster, J. & Parker, I. 1995. *Carrying out Investigations in Psychology: Methods and Statistics*. Wiley.

Fuchs, P.P. ed. 1991. *Music Theatre of Walter Felsenstein*. New edition. London: Quartet Books.

Glatthorn, A. 2022. *Music Theatre and the Holy Roman Empire: The German Musical Stage at the Turn of the Nineteenth Century*. Cambridge: Cambridge University Press.

Goodwin, C. & Goodwin, M.H. 2004. Participation. In Duranti, A. ed. *A Companion to Linguistic Anthropology*. Blackwell.

Grbich, C. 2007. *Qualitative Data Analysis: An Introduction*. SAGE Publications.

Grewe, O., Nagel, F., Kopiez, R. & Altenmüller, E. 2005. How Does Music Arouse "Chills"? *Annals of the New York Academy of Sciences*, 1060(1): 446–449.

Halfyard, J.K. 1996. *Only connect: European music theatre in the context of Wagner's Gesamtkunstwerk and the early twentieth-century avant-garde*. PhD. University of Birmingham.

Hall, M. 2015. *Music Theatre in Britain: 1960-1975*. Illustrated edition. Woodbridge, Suffolk, UK: Boydell Press.

Hansen, C. 2015. *What is Music Theater?* MMus. Royal Conservatory The Hague.

Hayes, N. 2021. *Doing psychological research*. Second edition. Open University Press.

Heile, B. 2016. Towards a theory of experimental music theatre: ‘showing doing’, ‘non-matrixed performance’ and ‘metaxis’. In Y. Kaduri, ed. Oxford: Oxford University Press: 335–355. Available at: https://eprints.gla.ac.uk/63571/ [Accessed 7 November 2023].

Henze, H.W. 1982. *Music and Politics: Collected Writings 1953-81 Book by Heinze, Hans Werner (Peter Labanyi trans) - Well-Read Books of Wigtown*. Faber and Faber.

Hübner, F. 2013. *Shifting Identities: The Musician as Theatrical Performer*. PhD. Leiden University.

Jobst, J. & Boerner, S. 2010. Understanding customer satisfaction in opera: first steps toward a model: Understanding customer satisfaction in opera. *International Journal of Nonprofit and Voluntary Sector Marketing*, 16(1): 50–69.

Jones, L. 2014. *Jones - 2014 - Psychological and psychophysiological effects of a.pdf*. PhD. Brunel University.

Juslin, P.N. & Laukka, P. 2004. Expression, Perception, and Induction of Musical Emotions: A Review and a Questionnaire Study of Everyday Listening. *Journal of New Music Research*, 33(3): 217–238.

Juslin, P.N. & Sloboda, J.A. 2011. *Handbook of music and emotion: theory, research, applications*. Oxford: University Press.

Katschthaler, K. 2015. From Cage to Walshe: Music as Theatre. In 125–139.

Kelley, E., Andrick, G., Benzenbower, F. & Devia, M. 2014. Physiological arousal response to differing musical genres. *Modern Psychological Studies*, 20(1).

Available at: https://scholar.utc.edu/mps/vol20/iss1/4 [Accessed 8 November 2023].

Kelley, K., Clark, B., Brown, V. & Sitzia, J. 2003. Good practice in the conduct and reporting of survey research. *International Journal for Quality in Health Care: Journal of the International Society for Quality in Health Care*, 15(3): 261–266.

Kingsbury, J. 1999. Why the arousal theory of musical expressiveness is still wrong. *Australasian Journal of Philosophy*, 77(1): 83–88.

Kolassa, A. 2021. Intertextuality and (modernist) medievalism in British post-war music. In *Intertextuality in Music*. Routledge.

Kosviner, D. 1989. New Music-Theatre in Stuttgart. *Contact*, 34: 32–36.

Kumar, R. 2014. *Research Methodology: A Step-by-Step Guide for Beginners*. SAGE.

Latham, A. ed. 2002. *The Oxford Companion to Music*. First Edition. Oxford: OUP Oxford.

Liljeström, S. 2011. *Emotional Reactions to Music: Prevalence and Contributing Factors*. PhD. Uppsala Universiteit.

Lim, H.A. & Park, H. 2018. The effect of music on arousal, enjoyment, and cognitive performance. *Psychology of Music*, 47(4): 539–550.

Lim, N. 2016. *Cultural differences in emotion: differences in emotional arousal level between the East and the West*. Integrative Medicine Research, 5(2): 105–109.

Liu, Y., Liu, G., Wei, D., Li, Q., Yuan, G., Wu, S., Wang, G. & Zhao, X. 2018. Effects of musical tempo on musicians' and non-musicians' emotional experience when listening to music. *Frontiers in Psychology*, 9.

Luck, N. 2020. *Interdisciplinary Practice as a Foundation for Experimental Music Theatre*. PhD. University of York.

Lundqvist, L., Carlsson, F., Hilmersson, P. & Juslin, P.N. 2008. Emotional responses to music: experience, expression, and physiology. Available at: https://journals.sagepub.com/doi/10.1177/0305735607086048 [Accessed 7 November 2023].

Madison, G. & Schiölde, G. 2017. Repeated Listening Increases the Liking for Music Regardless of Its Complexity: Implications for the Appreciation and Aesthetics of Music. *Frontiers in Neuroscience*, 11. Available at: https://www.frontiersin.org/articles/10.3389/fnins.2017.00147 [Accessed 7 November 2023].

Magsamen, S. 2019. Your Brain on Art: The Case for Neuroaesthetics. *Cerebrum: the Dana Forum on Brain Science*, 2019: cer-07-19.

Margulis, E.H. 2018. *Psychology of Music*. Oxford University Press.

Marsh, R. n.d. Bernard Rands. Available at https://www.rogermarshcomposer.co.uk/music-theatre/bernard-rands [Accessed 6 November 2023].

Marx, R. 1975. The Operatic Brecht. *The American Scholar*, 44(2): 283–290.

Maxwell, M. 2020. Form Submission - Contact Form - Research for Bow Down.

McNair, D., Lorr, M. & Doppleman, L. 1971. POMS Manual for the Profile of Mood States.

Menninghaus, W., Wagner, V., Wassiliwizky, E., Schindler, I., Hanich, J., Jacobsen, T. & Koelsch, S. 2019. What are aesthetic emotions? *Psychological Review*, 126(2): 171–195.

Merrill, J., Omigie, D. & Wald-Fuhrmann, M. 2020. Locus of emotion influences psychophysiological reactions to music. *PLOS ONE*, 15(8): e0237641.

Mesbahian, U. *'Max-imising' Madness in Music: The Gift of Madness in the Music of Peter Maxwell Davies*. PhD. Kings College, University of London.

Mori, K. & Iwanaga, M. 2017. Two types of peak emotional responses to music: The psychophysiology of chills and tears. *Scientific Reports*, 7(1): 46063.

Morris, H. 2023. Madness, Royalty and the Music of Screams. *The New York Times*. Available at: https://www.nytimes.com/2023/05/24/arts/music/elaine-mitchener-music-for-a-mad-king.html [Accessed 25 July 2023].

Newsom, J. 1963. *The Newsom Report On Education*. Available at: https://hansard.parliament.uk/Lords/1964-01-29/debates/3de671d8-afd7-42aa-8b5a-e261d614948b/TheNewsomReportOnEducation [Accessed 7 November 2023].

North, A.C. 2008. *The social and applied psychology of music*. Oxford: University Press.

Nyman, M. 1999. *Experimental Music: Cage and Beyond*. Cambridge University Press.

Olsen, K.N. & Stevens, C.J. 2013. Psychophysiological response to acoustic intensity change in a musical chord. *Journal of Psychophysiology*, 27(1): 16–26.

O'Reilly, K. 2009. *Key Concepts in Ethnography*. London: SAGE Publications Ltd.

Palan, S. & Schitter, C. 2018. Prolific.ac—A subject pool for online experiments. *Journal of Behavioral and Experimental Finance*, 17: 22–27.

Patten, M. 2016. *Questionnaire Research: A Practical Guide*. 4th ed. New York: Routledge.

Plutchik, R. 1982. A psychoevolutionary theory of emotions. *Social Science Information*, 21(4–5): 529–553.

Randel, D. 1986. *The New Harvard Dictionary of Music*. Subsequent edition. Cambridge, Mass: Harvard University Press.

Rasula, J. 2005. Jazz and American modernism. In W. Kalaidjian, ed. *The Cambridge Companion to American Modernism*. Cambridge Companions to Literature. Cambridge: Cambridge University Press.

Rebstock, M. 2019. On the Aesthetics and Working Process of Elena Mendoza's Music Theatre: Contemporary Music Review: Vol 38, No 1-2. 38(1). Available at: https://www.tandfonline.com/doi/abs/10.1080/07494467.2019.1578128 [Accessed 6 November 2023].

Rebstock, M. 2017. In Brauneck, M., and ITI Germany eds. Varieties of Independent Music Theatre in Europe. Transcript Verlag.

Rebstock, M. & ITI Germany eds. 2020. *Freies Musiktheater in Europa / Independent Music Theatre in Europe: Vier Fallstudien / Four Case Studies*. Transcript Verlag.

Rickard, N.S. 2004. Intense emotional responses to music: a test of the physiological arousal hypothesis. *Psychology of Music*, 32(4): 371–388.

Robert Adlington ed. 2019. *New Music Theatre in Europe: Transformations between 1955-1975*. Routledge.

Roesner, D. & Rebstock, M. eds. 2012. *Composed Theatre: Aesthetics, Practices, Processes*. 1st edition. Intellect Books.

Rosner, A. & Birtwistle, H. 2020. Potential Interview with Sir Harrison Birtwistle.

Russell, J.A. 1980. A circumplex model of affect. *Journal of Personality and Social Psychology*, 39: 1161–1178.

Russo, F., Vempala, N. & Sandstrom, G. 2013. Predicting musically induced emotions from physiological inputs: linear and neural network models. *Frontiers in Psychology*, 4. Available at:

https://www.frontiersin.org/articles/10.3389/fpsyg.2013.00468 [Accessed 7 November 2023].

Salzman, E. 2002. From Stage to Page: Music-Theater in Print. *Theater*, 32(1): 63–71.

Salzman, E. & Desi, T. 2008. *The New Music Theater: Seeing the Voice, Hearing the Body*. Illustrated edition. Oxford; New York: OUP USA.

Sand, G. (Philosophical Quote) Available at: https://www.oxfordreference.com/display/10.1093/acref/9780191826719.001.0001/q-oro-ed4-00009102 [Accessed 8 November 2023].

Saper, C.B., Scammell, T.E. & Lu, J. 2005. Hypothalamic regulation of sleep and circadian rhythms. *Nature*, 437(7063): 1257–1263.

Schäfer, T., Sedlmeier, P., Städtler, C. & Huron, D. 2013. The psychological functions of music listening. *Frontiers in Psychology*, 4: 511.

Schindler, I., Hosoya, G., Menninghaus, W., Beermann, U., Wagner, V., Eid, M. & Scherer, K.R. 2017a. Measuring aesthetic emotions: A review of the literature and a new assessment tool M. E. Kret, ed. *PLOS ONE*, 12(6): e0178899.

Schindler, I., Hosoya, G., Menninghaus, W., Beermann, U., Wagner, V., Eid, M. & Scherer, K.R. 2017b. Measuring aesthetic emotions: A review of the literature and a new assessment tool. *PLOS ONE*, 12(6): e0178899.

Schlaug, G. 2003. The Brain of Musicians. In I. Peretz & R. J. Zatorre, eds. *The Cognitive Neuroscience of Music*. Oxford University Press. Available at: https://doi.org/10.1093/acprof:oso/9780198525202.003.0024 [Accessed 8 November 2023].

Schmitt, N.C. 1982. *A John Cage Reader: In Celebration of His 70th Birthday*. P. Gena & J. Brent, eds. Peters.

Schopf, F.J. 2015. *Music on Stage*. Cambridge: Cambridge Scholars.

Scruton, R. 1983. *The Aesthetic Understanding: Essays in the Philosophy of Art and Culture*. South Bend, Ind.: St. Augustine's Press.

Sergerie, K., Chochol, C. & Armony, J.L. 2008. The role of the amygdala in emotional processing: a quantitative meta-analysis of functional neuroimaging studies. *Neuroscience and Biobehavioral Reviews*, 32(4): 811–830.

Service, T. 2012. Harrison Birtwistle: the music of myth. *The Guardian*. Available at: https://www.theguardian.com/music/2012/jun/29/harrison-birtwistle-music-of-myth [Accessed 5 July 2023].

Shevtsova, M. 2007. *Robert Wilson*. 1st edition. London; New York: Routledge.

Simpson, M. & Tuson, J. 2003a. *Using Observations in Small-Scale Research: A Beginner's Guide*. Edinburgh: University of Glasgow.

Simpson, M. & Tuson, J. 2003b. *Using Observations in Small-Scale Research: A Beginner's Guide. Revised Edition. Using Research*. University of Glasgow, SCRE Centre, 16 Dublin Street, Edinburgh, EH3 6NL Scotland (SCRE Publication no. https://eric.ed.gov/?id=ED481695 7 November 2023.

Social Issues Research Centre. Britain: A nation of emotion? Available at: http://www.sirc.org/publik/emotion.shtml [Accessed: 7 November 2023].

Solís-Serrano, S. 2023. Answer Mr Violin.

Sopchak, A.L. 1955. Individual differences in responses to different types of music, in relation to sex, mood, and other variables. *Psychological Monographs: General and Applied*, 69(11): 1–20.

Taylor, M. 2000. *Music in theatre: towards a methodology for examining the interaction of music and drama in theatre works of the twentieth century.* PhD. University of Exeter.

Thorp, A. & Kennedy, S. 2010. The problems of British society. [Poster] Available at: https://www.parliament.uk/globalassets/documents/commons/lib/research/key_issues/key-issues-the-problems-of-british-society.pdf. [Accessed 8 November 2023].

Till, N. 2004. 'I don't mind if something's operatic, just as long it's not opera.' A Critical Practice for New Opera and Music Theatre. *Contemporary Theatre Review*, 14: 15–24.

Trappe, H.-J. & Voit, G. 2016. The Cardiovascular Effect of Musical Genres. *Deutsches Ärzteblatt International*, 113(20): 347–352.

Trilling, O. 1987. The Language of Theatre: An International Dictionary of Theatre Language. *New Theatre Quarterly*, 3(9): 93–95.

Urquhart, C. 2015. Observation research techniques | Journal of EAHIL. *EAHIL*. Available at: http://ojs.eahil.eu/ojs/index.php/JEAHIL/article/view/61 [Accessed: 7 November 2023].

Vartanian, O. & Skov, M. 2014. Neural correlates of viewing paintings: Evidence from a quantitative meta-analysis of functional magnetic resonance imaging data. *Brain and Cognition*, 87: 52–56.

Vasković, J. 2023. Nervous system. Available at: https://www.kenhub.com/en/library/anatomy/the-nervous-system. [Accessed 7 November 2023].

Visted, E., Sørensen, L., Osnes, B., Svendsen, J.L., Binder, P.-E. & Schanche, E. 2017. The Association between Self-Reported Difficulties in Emotion Regulation and Heart Rate Variability: The Salient Role of Not Accepting Negative Emotions. *Frontiers in Psychology*, 8: 328.

Warrack, J. & West, E. 1992. The Oxford Dictionary of Opera. Oxford: Oxford University Press.

Watson, J. 2005. *Music theatre: approaches to greater formal synthesis*. Ph.D. University of Exeter.

Wenzdai. 2020. *Emotion Wheel*. Available at: https://www.healthline.com/health/emotion-wheel. [Accessed 7 November 2023].

Wilkins, C. 2011. *The Instrument in Space: the Embodiment of Music in the Machine Age*.

Williamon, A., Ginsborg, J., Perkins, R. & Waddell, G. 2021. *Performing Music Research: Methods in Music Education, Psychology, and Performance Science*. Oxford, New York: Oxford University Press.

Willig, C. & Rogers, W.S. 2017. *The SAGE Handbook of Qualitative Research in Psychology*. London: SAGE Publications Ltd.

Winold, C.A. 1963. *The effects of changes in harmonic tension upon listener response*. PhD. Indiana University.

Woodruff, P. 2010. *The Necessity of Theater: The Art of Watching and Being Watched*. Oxford: Oxford University Press.

Yardley, L. & Bishop, F.L. 2008. Mixing Qualitative and Quantitative Methods: A Pragmatic Approach. In *The SAGE Handbook of Qualitative Research in Psychology.* London: SAGE Publications Ltd.

Yu, K., Garcia Da Silva, P., Albeanu, D.F. & Li, B. 2016. Central Amygdala Somatostatin Neurons Gate Passive and Active Defensive Behaviors. *The Journal of Neuroscience*, 36(24): 6488–6496.

Zahra, D. 2013. *Mood, Emotive Content, and Reasoning*. PhD. University of Plymouth.

Zentner, M. & Eerola, T. 2010. *Self-Report Measures and Models*.

Zuckerman, M. 2014. *Sensation Seeking (Psychology Revivals): Beyond the Optimal Level of Arousal*. Psychology Press. Available at: https://www.taylorfrancis.com/books/mono/10.4324/9781315755496/sensation-seeking-psychology-revivals-marvin-zuckerman [Accessed 8 March 2023].

Musical Scores

Birtwistle, H. 1983. *Bow Down*. London: Universal Edition.

Cage, J. 1966. *Water Walk*. New York: Henmar Press.

Davies, P.M. 1977. *Miss Donnithorne's Maggot*. Full score. London: Boosey & Hawkes.

Goehr, A. 1968. *Naboth's Vineyard*. London: Schott Music.

Kagel, M. 1967. *Match: für drei Spieler: 2 Violoncelli, 1 Schlagzeuger (1964) / Mauricio Kagel.* London: Universal Edition.

Ligeti, G. 1962. *Poème symphonique: für 100 Metronome: Aufführungsanweisung (1962), for 100 metronomes: performance instructions*. Mainz; London: Schott.

Ligeti, G. 2002. *Nouvelles Aventures*. Leipzig: C.F. Peters.

Maxwell Davies, P. 1971. *Eight songs for a Mad King for soprano and mixed ensemble*. London: Boosey & Hawkes.

Orton, R. 1972. *Mug grunt: music-theatre for 3 voices/actors: Op. 41 (1972).* York: University of York Press.

Riley, T. 1964. *In C.* University of York Press.

Wishart, T. 1980. *Pastorale: music-theatre.* York: University of York Press.

Wishart, T. 1978. *Tuba Mirum*. Birmingham: Arts Lab Music.

Performances

Sunken Garden. 2013. Van dr Aa, M. & Mitchell, D. [Stadsschouwburg, Amsterdam].

The Band's Visit. 2017. Directed by David Cromer. [Ethel Barrymore Theater, New York].

Die Dreigroschenoper. 1928. Brecht, B. & Weill, K. [Theater am Schiffbauerdamm, Berlin].

Curlew River. 1964. Britten, B. [Orford Church, Woodbridge].

Hadestown. 2019. Directed by Rachel Chavkin. [Walter Kerr Theatre, New York].

Sweeny Todd: The Demon Barber of Fleet Street. 2004. Directed by John Doyle. [Festival Theatre, Chichester].

Alltag. 2007. Directed by Falk Hübner. [Leiden University].

Thespian Play. 2009. Directed by Falk Hübner. [Orpheus Institute, Gent].

Combattimento di Tancredi e Clorinda. 1624. Monteverdi, C. [Palazzo Mocenigo, Venice].

Regretfully Yours, Ongoing. 2018. Directed by Jack Sheen [Contemporary Music Festival, London].

Sonata Erotica (1919). Schulhoff, E. 1994. Directed by Werner Herbers. [Vredenburg Music Centre, Utrecht].

Videography

neilluck. 2010. *adam de la cour - arco collective - baby you and me girl....* Trade Union Palace [Online Video]. Available at: https://www.youtube.com/watch?v=CDmqthxmauI. [Accessed 13 November 2023].

James Whittle. 2016. *BRETHREN (2016)*. University of York. Available at: https://www.youtube.com/watch?v=iYi3Ca7Dc64&t=1s. [Accessed 13 November 2023]

Ensemble Offspring. 2011. *Mauricio Kagel – Match (1964)*. Available at: https://www.youtube.com/watch?v=uXZb2OKGCtM. [Accessed 25 November 2020].

Vic Firth. 2014. *Penumbra, by David Bithell and Terry Longshore*. Available at: https://www.youtube.com/watch?v=IDxVH3UQBMw&t=33s. [Accessed 13 November 2023].

Ensemble Musikfabrik. 2018. *Samuel Solís-Serrano - ʾmr (2018)*. Available at: https://www.youtube.com/watch?v=xWSnC9fTbCs. [Accessed 13 November 2023].

Berinstein, D. 2008. *ShowBusiness: The Road to Broadway*. Dramatic Forces.

Elaine Mitchener. 2018. *Sweet Tooth*. St George's Bloomsbury. Available at: https://www.elainemitchener.com/sweet-tooth. [Accessed 13 November 2023].

Warburton, J. *The Rise of Experimental Music in the 1960s documentary*. Available at: https://www.youtube.com/watch?v=nKPFggCNt_o. [Accessed 20 November 2020].

RTÉ lyric fm. *The Site of an Investigation by Jennifer Walshe at New Music Dublin 2019*. Available at: https://www.youtube.com/watch?v=D0c5MXdeuxU&t=1618s. [Accessed 13 November 2023].

PASTEL HECK. 2017. *XXX EVIL (excerpt from Christopher Brett Bailey's KISSING THE SHOTGUN GOODNIGHT)*. Available at: https://www.youtube.com/watch?v=q865t72rhkg&t=296s. [Accessed 13 November 2023].

Appendices

Appendix A

Participant Information Sheet (Experiments A/B)

UNIVERSITY OF PLYMOUTH
Faculty of Arts and Humanities

Project: Elucidating Orchestration as an Aesthetic of Music Theatre

Project contact details:

Name of researcher/student: Ryan Thomas Green

Contact details: ryan.green@plymouth.ac.uk.

Name of Supervisor: Professor Eduardo Miranda

Contact details of Supervisor: eduardo.miranda@plymouth.ac.uk

Name of Course: Postgraduate Research in the School of Society and Culture

What is this project about?

This research is designed to identify the relationships between audiences and experimental music within music driven theatre. In order to achieve the research aims and answer my questions, this project aims to explore topics such as music theatre's location in an artistic context, immersive theatre, intermediality, opera/operetta and other music driven theatre, melodrama, experimental music and sound art. This study will aim to discover the audience's relationship with orchestration and instrumentation in music theatre work has developed since its emergence in the 1960s. This will be achieved through interview, the careful study.

What will you have to do if you agree to take part?

In order to collect qualitative and quantitative data, this study will employ the use of interview and questionnaire from composers and artists and the general public through the use of online questionnaire, face to face interview and/or observation. You may be subjected to emotionally provoking music theatre work which could potentially be triggering. You will be informed before any of this work is shown to you and you will be able to skip that section of questioning.

Informed consent

Your participation is voluntary, and it is up to you whether you wish to participate.

Right to withdraw

We hope that you feel able to help us with this study. If decide that you do not want to continue to take part in the study, you are free to withdraw any time up until 6 weeks after participating in the study.

What are the advantages or disadvantages of taking part?

You may find the project interesting and enjoy answering questions about the research. Once the study is finished it could provide information the relationships between audiences and experimental music.

Debriefing

There will be an opportunity to learn about the outcomes of the research by contacting the researcher. You may obtain information on my progress and

request copies of outputs at any time by contacting the researcher through the above contact details.

Confidentiality[15]

The information you give may be published, but no personal information other than your initials but will be anonymised with the presentation of data to anyone outside the research team. The data will be stored by the researcher for the purposes of the research project described above on a password protected server. If you have any queries about this 'privacy information'.[16] then please contact the researcher through the above contact details.

Planned Outputs

The results of the study will be a written dissertation. The outcomes of the research may be published in academic journals or other academic outputs.

Feedback

Please feel free to contact ryan.green@plymouth.ac.uk at any time if you have questions about this research study.

Further Contact Details:

The Faculty of Arts and Humanities and Business Ethics and Integrity Committee is the responsible for ethical approval. If you have any queries or

[15] In accordance with Plymouth University Ethics Policy

[16] If you wish to complain to University of Plymouth about how your personal information has been processed you can do so using a GDPR complaint form and send it directly to the University's Data Protection Officer via post or dpo@plymouth.ac.uk.

concerns about the research or about how it is being conducted (or if you wish to make a complaint) please contact:

Faculty Research Ethics Administrator artsresearchethics@plymouth.ac.uk

Appendix B

Participant Information Sheet (Experiment C)

UNIVERSITY OF PLYMOUTH
School of Society & Culture

Participant Information Sheet

Towards Elucidating Aesthetic Emotion in Music Theatre

Participant Number:

Name of researcher: Ryan Thomas Green

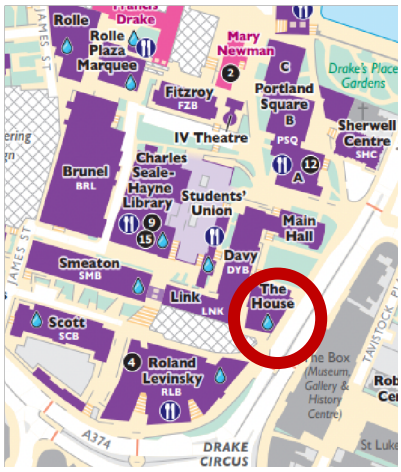
Contact details: ryan.green@plymouth.ac.uk

Name of Supervisor: Professor Eduardo Miranda

Contact details of Supervisor: eduardo.miranda@plymouth.ac.uk

What is this project about?

This research will be testing the hypothesis that music theatre is accidentally alienating to non-familiar audiences because of its complicated musical language and perceived associations with opera and the musical. Aesthetic Emotion is emotion we feel while attempting to interpret and understand art. We are interested in measuring these responses to help inform and shape future work.



What will you have to do if you agree to take part?

In order to take part in the study, participants will be required to watch excerpts of music theatre in 'theatre conditions' (darkened room) and answer questions on a one-to-one basis with the researcher. You will be observed throughout the process with the researcher noting body language and facial expressions, which will then be discussed afterwards. Your heart rate will be monitored, and your facial responses will be recorded. The music theatre pieces will be chosen beforehand any content warnings will be discussed with you. The session will last approximately one (1) hour. You have been invited to choose a date and time to attend the ICCMR Lab which is located in The House on the City Centre Campus of University of Plymouth, PL4 8AA. There are plenty of spaces available and if you cannot attend on the date allocated, please email the researcher. The House has accessible toilets, a lift and drinking fountains. Bottled water will be provided.

The ICCMR lab will be clearly marked and located on the second (2nd) Floor of the building. If you are a member of the school, you may let yourself in the building and wait in the waiting area outside the Lab. If you are visiting from any other school or are an external visitor, please wait by the main door and you will be let in just before your allocated time.

Informed consent

Your participation is voluntary, and it is up to you whether you wish to participate. You will be asked to consent to participation and the filming of yourself. It is up to you whether you consent to images of your face being included in the final thesis. Your name will remain anonymous.

Right to withdraw

We hope that you feel able to help us with this study. If decide that you do not want to continue to take part in the study, you are free to withdraw any time up until six (6) weeks after participating in the study by emailing ryan.green@plymouth.ac.uk.

What are the advantages or disadvantages of taking part?

You may find the project interesting and enjoy answering questions about the research. Once the study is finished it could provide information the relationships between audiences and experimental music.

Debriefing

There will be an opportunity to learn about the outcomes of the research by contacting the researcher. You may obtain information on my progress and request copies of outputs at any time by contacting the researcher through the above contact details.

Confidentiality[17]

The information you give may be published but will be anonymised with the presentation of data to anyone outside the research team. The data will be stored

[17] In accordance with Plymouth University Ethics Policy

by the researcher for the purposes of the research project described above on a password protected server. If you have any queries about this 'privacy information'.[18] then please contact the researcher through the above contact details. Within any lab reports/the final dissertation, participants will be referred to as them/they or their participant number. It may be necessary to refer to the participant's course (if a student) to compare answers.

Planned Outputs

The results of the study will be a written dissertation. The outcomes of the research may be published in academic journals or other academic outputs.

Feedback

Please feel free to contact Ryan Thomas Green at any time if you have questions this research study.

Further Contact Details:

The Faculty of Arts, Humanities and Business Ethics and Integrity Committee is the responsible for ethical approval. If you have y queries or concerns about the research or about how it is being conducted or if you wish to make a complaint) please contact: Faculty Research Ethics Administrator artsresearchethics@plymouth.ac.uk

[18] If you wish to complain to University of Plymouth about how your personal information has been processed you can do so using a GDPR complaint form and send it directly to the University's Data Protection Officer via post or dpo@plymouth.ac.uk.

Appendix C

Participant Information Sheet (Experiment D)

Please read all the information on this page carefully before continuing.

We welcome ALL potential participants, regardless of artistic/musical experience. We will aim to survey as many participants as possible.

The working title of this research project is 'Towards Elucidating Psychological and Emotional Arousal in Response to Music Theatre'.

This survey should take around twenty (20) minutes to complete, but does not ask anything too challenging. You will be asked to watch four (4) stimuli and record your emotional response.

On the next page, you will see a Participant Consent form. You must consent in order to take part.

About this Study

This study is the collection of data for a phd thesis investigating emotional aesthetic responses to experimental music theatre, in its varying forms, and how it strongly each exceprt causes emotional reactions in viewers.

This research will be testing the hypothesis that music theatre is alienating to non-familiar audiences because of its complex musical language.

This study is being carried out under supervision from the Interdisciplinary Centre for Computer Music Research, School of Society and Culture, University of Plymouth.

This is the final study of the phd so your participation would be greatly appreciated!

There are no right or wrong answers!

Finally...

Information collected will be anonymised due to the nature of this study. You may not withdraw from this study once data has been collected unless there are extraordinary circumstances. Data will be stored on University of Plymouth systems which are secured and cannot be accessed by anyone outside of the research team.

Ethical clearance for this study has been granted by the Faculty of Arts, Humanities and Business Ethics Committee (pid: 3035).

Please be aware that this survey contains video extracts from music theatre work which portray slavery, physical violence, abuse, and themes which some participants may find upsetting. If you feel that you are no longer able to participate please feel free to leave at any time.

Appendix D

Participant Answer Sheet (Experiment C)

Participant Data Booklet

CONFIDENTIAL

Towards Elucidating Aesthetic Emotion in Music Theatre

Participant Number:

Welcome Participant

- ☐ **Fire Exits/Alarms/Assembly Points**

  In the unlikely event of a fire. Please follow me to the assembly point.

- ☐ **Toilets and Breaks**

  You are welcome to take short breaks, toilets are just through the door to the right.

- ☐ **Water Availability**

  Bottled water is on the table in front of you, please help yourself.

- ☐ **Research Process**

  We will be watching four pieces today; each excerpt will be played twice. After the first watch, we will discuss the work and how it made you feel. We will then watch it again and I will ask you 42 questions of which you will answer on a scale of 1-5, depending on the intensity you felt an emotion.

Now, could you please tell me how you would describe your relationship with music:

Place Heart Rate Monitor on Finger

Resting Heart Rate:

/BPM

Start Camera Recording.

Ask Participant to Hold up slate to camera with their PID clearly written on.

Dim Lab Lights.

Let us begin.

***SWEET TOOTH* (2018)**

The First Piece of Music Theatre that we will be watching will be *SWEET TOOTH*. Which is piece by Elaine Mitchener. This production was recorded in 2018.

Play Clip

Discussion:

- Can you describe how the music theatre made you feel?
- Can you describe any physical effects you felt?
- Do you feel that you understand what the composer is trying to convey?
- Can you tell me what you liked about the production?
- Can you tell me what you disliked about the production?
- Do you feel that you would need to know more about the background or context of the production to relate to it more effectively?
- Do you feel the emotion you felt is created by the way the music sounds, or because you genuinely 'felt' it?
- Does this work make you feel alienated in anyway? (Discussion)
- Would you be interested in learning more about this work in the future?

Note any heartrate spikes.

We will now watch this clip again. Play Clip.

I will now ask you 42 questions. Please answer on a scale of 1 - 5 depending on the intensity you felt each emotion. 1 being not at all and 5 being very.

		How intensely did you feel this emotion?				
	Emotional feeling	**1 Not at all**	**2**	**3**	**4**	**5 Very**
1	I found it beautiful	☐1	☐2	☐3	☐4	☐5
2	Challenged me intellectually	☐1	☐2	☐3	☐4	☐5
3	Delighted me	☐1	☐2	☐3	☐4	☐5
4	Calmed me	☐1	☐2	☐3	☐4	☐5
5	Made me curious	☐1	☐2	☐3	☐4	☐5
6	Liked it	☐1	☐2	☐3	☐4	☐5
7	Fascinated me	☐1	☐2	☐3	☐4	☐5
8	Felt something wonderful	☐1	☐2	☐3	☐4	☐5
9	Invigorated me	☐1	☐2	☐3	☐4	☐5
10	Was mentally engaging	☐1	☐2	☐3	☐4	☐5
11	Baffled me	☐1	☐2	☐3	☐4	☐5
12	I found it ugly	☐1	☐2	☐3	☐4	☐5
13	Sensed a deeper meaning	☐1	☐2	☐3	☐4	☐5
14	Felt deeply moved	☐1	☐2	☐3	☐4	☐5
15	Made me feel melancholic	☐1	☐2	☐3	☐4	☐5
16	Energised me	☐1	☐2	☐3	☐4	☐5
17	Made me angry	☐1	☐2	☐3	☐4	☐5
18	I Was enchanted	☐1	☐2	☐3	☐4	☐5

19	Bored me	☐1	☐2	☐3	☐4	☐5
20	Relaxed me	☐1	☐2	☐3	☐4	☐5
21	Felt a sudden insight	☐1	☐2	☐3	☐4	☐5
22	Amused me	☐1	☐2	☐3	☐4	☐5
23	Made me sad	☐1	☐2	☐3	☐4	☐5
24	Felt confused	☐1	☐2	☐3	☐4	☐5
25	Made me aggressive	☐1	☐2	☐3	☐4	☐5
26	Made me feel sentimental	☐1	☐2	☐3	☐4	☐5
27	Worried me	☐1	☐2	☐3	☐4	☐5
28	Made me feel nostalgic	☐1	☐2	☐3	☐4	☐5
29	Surprised me	☐1	☐2	☐3	☐4	☐5
30	Felt oppressive	☐1	☐2	☐3	☐4	☐5
31	I found it sublime	☐1	☐2	☐3	☐4	☐5
32	Spurred me on	☐1	☐2	☐3	☐4	☐5
33	Felt indifferent	☐1	☐2	☐3	☐4	☐5
34	Was impressed	☐1	☐2	☐3	☐4	☐5
35	I found it distasteful	☐1	☐2	☐3	☐4	☐5
36	Touched me	☐1	☐2	☐3	☐4	☐5
37	Was unsettling to me	☐1	☐2	☐3	☐4	☐5
38	Sparked my interest	☐1	☐2	☐3	☐4	☐5
39	Made me happy	☐1	☐2	☐3	☐4	☐5
40	Felt awe	☐1	☐2	☐3	☐4	☐5
41	Motivated me to act	☐1	☐2	☐3	☐4	☐5
42	Was funny to me	☐1	☐2	☐3	☐4	☐5

***The Site of an Investigation* (2019)**

The Next Piece of Music Theatre that we will be watching will be *The Site of an Investigation*. Which is piece by Jennifer Walshe. This production was recorded in 2019.

Play Clip

Discussion:

- Can you describe how the music theatre made you feel?
- Can you describe any physical effects you felt?
- Do you feel that you understand what the composer is trying to convey?
- Can you tell me what you liked about the production?
- Can you tell me what you disliked about the production?
- Do you feel that you would need to know more about the background or context of the production to relate to it more effectively?
- Do you feel the emotion you felt is created by the way the music sounds, or because you genuinely 'felt' it?
- Does this work make you feel alienated in anyway? (Discussion)
- Would you be interested in learning more about this work in the future?

Note any heartrate spikes.

We will now watch this clip again. Play Clip.

I will now ask you 42 questions. Please answer on a scale of 1 - 5 depending on the intensity you felt each emotion. 1 being not at all and 5 being very.

		How intensely did you feel this emotion?				
	Emotional feeling	**1 Not at all**	**2**	**3**	**4**	**5 Very**
1	I found it beautiful	☐1	☐2	☐3	☐4	☐5
2	Challenged me intellectually	☐1	☐2	☐3	☐4	☐5
3	Delighted me	☐1	☐2	☐3	☐4	☐5
4	Calmed me	☐1	☐2	☐3	☐4	☐5
5	Made me curious	☐1	☐2	☐3	☐4	☐5
6	Liked it	☐1	☐2	☐3	☐4	☐5
7	Fascinated me	☐1	☐2	☐3	☐4	☐5
8	Felt something wonderful	☐1	☐2	☐3	☐4	☐5
9	Invigorated me	☐1	☐2	☐3	☐4	☐5
10	Was mentally engaging	☐1	☐2	☐3	☐4	☐5
11	Baffled me	☐1	☐2	☐3	☐4	☐5
12	I found it ugly	☐1	☐2	☐3	☐4	☐5
13	Sensed a deeper meaning	☐1	☐2	☐3	☐4	☐5
14	Felt deeply moved	☐1	☐2	☐3	☐4	☐5
15	Made me feel melancholic	☐1	☐2	☐3	☐4	☐5
16	Energised me	☐1	☐2	☐3	☐4	☐5
17	Made me angry	☐1	☐2	☐3	☐4	☐5
18	I Was enchanted	☐1	☐2	☐3	☐4	☐5
19	Bored me	☐1	☐2	☐3	☐4	☐5
20	Relaxed me	☐1	☐2	☐3	☐4	☐5
21	Felt a sudden insight	☐1	☐2	☐3	☐4	☐5

22	Amused me	☐1	☐2	☐3	☐4	☐5
23	Made me sad	☐1	☐2	☐3	☐4	☐5
24	Felt confused	☐1	☐2	☐3	☐4	☐5
25	Made me aggressive	☐1	☐2	☐3	☐4	☐5
26	Made me feel sentimental	☐1	☐2	☐3	☐4	☐5
27	Worried me	☐1	☐2	☐3	☐4	☐5
28	Made me feel nostalgic	☐1	☐2	☐3	☐4	☐5
29	Surprised me	☐1	☐2	☐3	☐4	☐5
30	Felt oppressive	☐1	☐2	☐3	☐4	☐5
31	I found it sublime	☐1	☐2	☐3	☐4	☐5
32	Spurred me on	☐1	☐2	☐3	☐4	☐5
33	Felt indifferent	☐1	☐2	☐3	☐4	☐5
34	Was impressed	☐1	☐2	☐3	☐4	☐5
35	I found it distasteful	☐1	☐2	☐3	☐4	☐5
36	Touched me	☐1	☐2	☐3	☐4	☐5
37	Was unsettling to me	☐1	☐2	☐3	☐4	☐5
38	Sparked my interest	☐1	☐2	☐3	☐4	☐5
39	Made me happy	☐1	☐2	☐3	☐4	☐5
40	Felt awe	☐1	☐2	☐3	☐4	☐5
41	Motivated me to act	☐1	☐2	☐3	☐4	☐5
42	Was funny to me	☐1	☐2	☐3	☐4	☐5

***Penumbra* (2014)**

The Next Piece of Music Theatre that we will be watching will be *Penumbra*. Which is piece by David Bithell and Terry Longshore. This production was recorded in 2014.

Play Clip

Discussion:

- ☐ Can you describe how the music theatre made you feel?
- ☐ Can you describe any physical effects you felt?
- ☐ Do you feel that you understand what the composer is trying to convey?
- ☐ Can you tell me what you liked about the production?
- ☐ Can you tell me what you disliked about the production?
- ☐ Do you feel that you would need to know more about the background or context of the production to relate to it more effectively?
- ☐ Do you feel the emotion you felt is created by the way the music sounds, or because you genuinely 'felt' it?
- ☐ Does this work make you feel alienated in anyway? (Discussion)
- ☐ Would you be interested in learning more about this work in the future?

Note any heartrate spikes.

We will now watch this clip again. Play Clip.

I will now ask you 42 questions. Please answer on a scale of 1 - 5 depending on the intensity you felt each emotion. 1 being not at all and 5 being very.

		How intensely did you feel this emotion?				
	Emotional feeling	**1 Not at all**	**2**	**3**	**4**	**5 Very**
1	I found it beautiful	☐1	☐2	☐3	☐4	☐5
2	Challenged me intellectually	☐1	☐2	☐3	☐4	☐5
3	Delighted me	☐1	☐2	☐3	☐4	☐5
4	Calmed me	☐1	☐2	☐3	☐4	☐5
5	Made me curious	☐1	☐2	☐3	☐4	☐5
6	Liked it	☐1	☐2	☐3	☐4	☐5
7	Fascinated me	☐1	☐2	☐3	☐4	☐5
8	Felt something wonderful	☐1	☐2	☐3	☐4	☐5
9	Invigorated me	☐1	☐2	☐3	☐4	☐5
10	Was mentally engaging	☐1	☐2	☐3	☐4	☐5
11	Baffled me	☐1	☐2	☐3	☐4	☐5
12	I found it ugly	☐1	☐2	☐3	☐4	☐5
13	Sensed a deeper meaning	☐1	☐2	☐3	☐4	☐5
14	Felt deeply moved	☐1	☐2	☐3	☐4	☐5
15	Made me feel melancholic	☐1	☐2	☐3	☐4	☐5
16	Energised me	☐1	☐2	☐3	☐4	☐5
17	Made me angry	☐1	☐2	☐3	☐4	☐5
18	I Was enchanted	☐1	☐2	☐3	☐4	☐5

19	Bored me	☐1	☐2	☐3	☐4	☐5
20	Relaxed me	☐1	☐2	☐3	☐4	☐5
21	Felt a sudden insight	☐1	☐2	☐3	☐4	☐5
22	Amused me	☐1	☐2	☐3	☐4	☐5
23	Made me sad	☐1	☐2	☐3	☐4	☐5
24	Felt confused	☐1	☐2	☐3	☐4	☐5
25	Made me aggressive	☐1	☐2	☐3	☐4	☐5
26	Made me feel sentimental	☐1	☐2	☐3	☐4	☐5
27	Worried me	☐1	☐2	☐3	☐4	☐5
28	Made me feel nostalgic	☐1	☐2	☐3	☐4	☐5
29	Surprised me	☐1	☐2	☐3	☐4	☐5
30	Felt oppressive	☐1	☐2	☐3	☐4	☐5
31	I found it sublime	☐1	☐2	☐3	☐4	☐5
32	Spurred me on	☐1	☐2	☐3	☐4	☐5
33	Felt indifferent	☐1	☐2	☐3	☐4	☐5
34	Was impressed	☐1	☐2	☐3	☐4	☐5
35	I found it distasteful	☐1	☐2	☐3	☐4	☐5
36	Touched me	☐1	☐2	☐3	☐4	☐5
37	Was unsettling to me	☐1	☐2	☐3	☐4	☐5
38	Sparked my interest	☐1	☐2	☐3	☐4	☐5
39	Made me happy	☐1	☐2	☐3	☐4	☐5
40	Felt awe	☐1	☐2	☐3	☐4	☐5
41	Motivated me to act	☐1	☐2	☐3	☐4	☐5
42	Was funny to me	☐1	☐2	☐3	☐4	☐5

***'Mr* (2018)**

The Next Piece of Music Theatre that we will be watching will be *'mr*. Which is piece by Samuel Solís-Serrano. This production was recorded in 2018.

Play Clip

Discussion:

- Can you describe how the music theatre made you feel?
- Can you describe any physical effects you felt?
- Do you feel that you understand what the composer is trying to convey?
- Can you tell me what you liked about the production?
- Can you tell me what you disliked about the production?
- Do you feel that you would need to know more about the background or context of the production to relate to it more effectively?
- Do you feel the emotion you felt is created by the way the music sounds, or because you genuinely 'felt' it?
- Does this work make you feel alienated in anyway? (Discussion)
- Would you be interested in learning more about this work in the future?

Note any heartrate spikes.

We will now watch this clip again. Play Clip.

I will now ask you 42 questions. Please answer on a scale of 1 - 5 depending on the intensity you felt each emotion. 1 being not at all and 5 being very.

		How intensely did you feel this emotion?				
	Emotional feeling	**1 Not at all**	**2**	**3**	**4**	**5 Very**
1	I found it beautiful	☐1	☐2	☐3	☐4	☐5
2	Challenged me intellectually	☐1	☐2	☐3	☐4	☐5
3	Delighted me	☐1	☐2	☐3	☐4	☐5
4	Calmed me	☐1	☐2	☐3	☐4	☐5
5	Made me curious	☐1	☐2	☐3	☐4	☐5
6	Liked it	☐1	☐2	☐3	☐4	☐5
7	Fascinated me	☐1	☐2	☐3	☐4	☐5
8	Felt something wonderful	☐1	☐2	☐3	☐4	☐5
9	Invigorated me	☐1	☐2	☐3	☐4	☐5
10	Was mentally engaging	☐1	☐2	☐3	☐4	☐5
11	Baffled me	☐1	☐2	☐3	☐4	☐5
12	I found it ugly	☐1	☐2	☐3	☐4	☐5
13	Sensed a deeper meaning	☐1	☐2	☐3	☐4	☐5
14	Felt deeply moved	☐1	☐2	☐3	☐4	☐5
15	Made me feel melancholic	☐1	☐2	☐3	☐4	☐5
16	Energised me	☐1	☐2	☐3	☐4	☐5
17	Made me angry	☐1	☐2	☐3	☐4	☐5

18	I Was enchanted	☐1	☐2	☐3	☐4	☐5
19	Bored me	☐1	☐2	☐3	☐4	☐5
20	Relaxed me	☐1	☐2	☐3	☐4	☐5
21	Felt a sudden insight	☐1	☐2	☐3	☐4	☐5
22	Amused me	☐1	☐2	☐3	☐4	☐5
23	Made me sad	☐1	☐2	☐3	☐4	☐5
24	Felt confused	☐1	☐2	☐3	☐4	☐5
25	Made me aggressive	☐1	☐2	☐3	☐4	☐5
26	Made me feel sentimental	☐1	☐2	☐3	☐4	☐5
27	Worried me	☐1	☐2	☐3	☐4	☐5
28	Made me feel nostalgic	☐1	☐2	☐3	☐4	☐5
29	Surprised me	☐1	☐2	☐3	☐4	☐5
30	Felt oppressive	☐1	☐2	☐3	☐4	☐5
31	I found it sublime	☐1	☐2	☐3	☐4	☐5
32	Spurred me on	☐1	☐2	☐3	☐4	☐5
33	Felt indifferent	☐1	☐2	☐3	☐4	☐5
34	Was impressed	☐1	☐2	☐3	☐4	☐5
35	I found it distasteful	☐1	☐2	☐3	☐4	☐5
36	Touched me	☐1	☐2	☐3	☐4	☐5
37	Was unsettling to me	☐1	☐2	☐3	☐4	☐5
38	Sparked my interest	☐1	☐2	☐3	☐4	☐5
39	Made me happy	☐1	☐2	☐3	☐4	☐5
40	Felt awe	☐1	☐2	☐3	☐4	☐5
41	Motivated me to act	☐1	☐2	☐3	☐4	☐5
42	Was funny to me	☐1	☐2	☐3	☐4	☐5

This is the end of the experiment.

Would you like to ask any questions?

Thank the participant for coming and show them out.

End of Experiment

Appendix E

Original AESTHMOS Scale

The AESTHEMOS can be used to assess either the intensity of aesthetic emotions (e.g., for studying momentary aesthetic experience or the experience of a specific stimulus, such as a picture, poem, piece of music, or film scene) or the frequency of experiencing aesthetic emotions during a more prolonged aesthetic experience (e.g., for studying an event as a whole, such as an entire art exhibition, theater performance, or a walk through nature). An example of the AESTHEMOS assessing intensity is shown below.

For the frequency version, the following modifications need to be made.
Rating instruction: How often did you feel this emotion?
Rating scale: From 1 *never* to 5 *very often*

Instruction:

Which emotional effect did _____ have on you?
For each emotion listed below, please mark the response category that best matches your personal experience. Please only indicate how **you** actually felt. Do not characterize the emotions expressed in _____ if you did not feel them yourself.

	How intensely did you feel this emotion?				
Emotional feeling	**1 not at all**	**2**	**3**	**4**	**5 very**
1 I found it beautiful	☐1	☐2	☐3	☐4	☐5
2 Challenged me intellectually	☐1	☐2	☐3	☐4	☐5
3 Delighted me	☐1	☐2	☐3	☐4	☐5
4 Calmed me	☐1	☐2	☐3	☐4	☐5
5 Made me curious	☐1	☐2	☐3	☐4	☐5
6 Liked it	☐1	☐2	☐3	☐4	☐5
7 Fascinated me	☐1	☐2	☐3	☐4	☐5
8 Felt something wonderful	☐1	☐2	☐3	☐4	☐5
9 Invigorated me	☐1	☐2	☐3	☐4	☐5
10 Was mentally engaged	☐1	☐2	☐3	☐4	☐5
11 Baffled me	☐1	☐2	☐3	☐4	☐5
12 I found it ugly	☐1	☐2	☐3	☐4	☐5
13 Sensed a deeper meaning	☐1	☐2	☐3	☐4	☐5

	How intensely did you feel this emotion?				
Emotional feeling	**1 not at all**	**2**	**3**	**4**	**5 very**
14 Felt deeply moved	☐1	☐2	☐3	☐4	☐5
15 Made me feel melancholic	☐1	☐2	☐3	☐4	☐5
16 Energized me	☐1	☐2	☐3	☐4	☐5
17 Made me angry	☐1	☐2	☐3	☐4	☐5
18 Was enchanted	☐1	☐2	☐3	☐4	☐5
19 Bored me	☐1	☐2	☐3	☐4	☐5
20 Relaxed me	☐1	☐2	☐3	☐4	☐5
21 Felt a sudden insight	☐1	☐2	☐3	☐4	☐5
22 Amused me	☐1	☐2	☐3	☐4	☐5
23 Made me sad	☐1	☐2	☐3	☐4	☐5
24 Felt confused	☐1	☐2	☐3	☐4	☐5
25 Made me aggressive	☐1	☐2	☐3	☐4	☐5
26 Made me feel sentimental	☐1	☐2	☐3	☐4	☐5
27 Worried me	☐1	☐2	☐3	☐4	☐5
28 Made me feel nostalgic	☐1	☐2	☐3	☐4	☐5
29 Surprised me	☐1	☐2	☐3	☐4	☐5
30 Felt oppressive	☐1	☐2	☐3	☐4	☐5
31 I found it sublime	☐1	☐2	☐3	☐4	☐5
32 Spurred me on	☐1	☐2	☐3	☐4	☐5
33 Felt indifferent	☐1	☐2	☐3	☐4	☐5
34 Was impressed	☐1	☐2	☐3	☐4	☐5
35 I found it distasteful	☐1	☐2	☐3	☐4	☐5
36 Touched me	☐1	☐2	☐3	☐4	☐5
37 Was unsettling to me	☐1	☐2	☐3	☐4	☐5
38 Sparked my interest	☐1	☐2	☐3	☐4	☐5
39 Made me happy	☐1	☐2	☐3	☐4	☐5

40 Felt awe	☐1	☐2	☐3	☐4	☐5
41 Motivated me to act	☐1	☐2	☐3	☐4	☐5
42 Was funny to me	☐1	☐2	☐3	☐4	☐5

(Schindler *et al*. 2017).