

Sound in Sight

An autoethnographic case study of teaching and learning western music theory

Robert Linton Tavis Ashton-Bell

B. Mus, B. Ed

Submitted in fulfilment of the requirements for the degree:

Doctor of Philosophy

Faculty of Education

Monash University

September 2014

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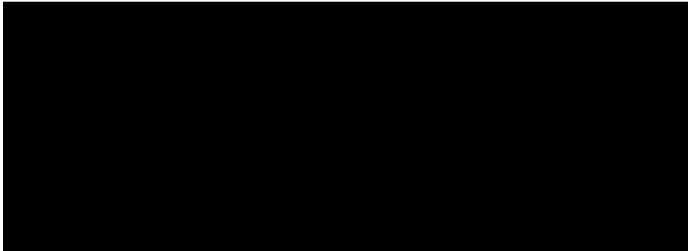
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Abstract

Sound in Sight: An autoethnographic case study of teaching and learning western music theory

This thesis explores the phenomenon of teaching and learning of western music theory within university level education. The teaching and learning of western music theory concerns an intangible medium, which can pose difficulties in its understanding. Western music theory is multifaceted and pluralistic in nature, with its learning hinging upon the interpretation of individuals situated within particular musical cultures. This being said, the subject also contains historical and sociocultural structures that define particular approaches to music. Due to this interpretative nature of music, a divergent educational approach is required rather than one that is convergent.

Adopting a hermeneutical phenomenological stance stemming from a constructivist epistemology, the current study uses an autoethnography as central to its examination. Expanding around this central inquiry is a student survey and investigations to current pedagogical approaches adopted in western music theory teaching and learning. Also building from the central autoethnographical exposition, a section of this thesis is dedicated to visualising the structures inherent to western music theory. This has been done in order to devise visual approaches to the teaching and learning of a subject that contains very abstract and intangible concepts, which are often difficult to describe in words. The last section of the current study tethers concepts from all prior chapters to make pedagogical suggestions based upon its research. Such suggestions aim toward a learner-centred, visual approach to western music theory structures. On the other side of the pedagogical coin, the multitudes of musical interpretations can be facilitated through the concept of musical thought, which is unpacked and explored throughout this volume.

This thesis aims to provide teachers and learners with a visualised approach to the teaching and learning of western music theory. The current study also aims to contextualise the reader with understandings of the nature of music and hence musical thought. This volume has been made with supporting materials that do not aim to induce a dogmatic approach, rather outlining a divergent approach as a means of teaching and learning western music theory.

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Dedicated to the most influential people in my life: my family, my friends, my teachers and my students; without you this would not have been possible. Special acknowledgements go to my supervisors Associate Professor Jane Southcott and Dr John Pardy for their continued patience, wisdom and support throughout this undertaking.

In loving memory of Brian Ashton-Bell, Linton James Kirk and Lola Patience Hexter.

I – Aspects of Inquiry

1. Introduction

This thesis explores the phenomenon of teaching and learning of western music theory within university level education. Within every university music degree around the western world, there is a compulsory subject undertaken known as western music theory. Western music theory concerns an intangible medium: the sociocultural and historically generated structures that underpin understandings of western music. There are two main contentions that underlay and drive this study:

1. The teaching and learning of western music theory in Australian universities is facilitated by inherited traditions that have remained largely unchallenged over time.
2. Understanding western music theory enables the undertaking of any musical activity.

Throughout this thesis, any reference to “music theory”, “theory” or general musical conventions can be assumed to refer to “western music theory” or components of western music unless specifically stated otherwise. Accompanying these contentions are three research questions that guide, frame and build from the aforementioned contentions. They are as follows:

1. How did I come to understand the underlying structures of western music theory?
2. How do prospective learners perceive the purposes and functions of music theory?
3. How can representation of musical structures facilitate the teaching and learning of music theory?

Structures inherent in western music may be heard and identified through the use of aural means, or realised and analysed through the use of western music notation. The use of western music notation to represent underlying theoretical structures can become convoluted, as there are many exceptions to rules that can arise due to the freedom of writing styles sanctioned by any given composer. It is believed that the teaching and learning of western music theory may be benefitted through the use of alternate visual means in order to make the subject appear more tangible and thus, more relatable or comprehensible to visual learners. The traditional method to visually represent such underlying structures is to use western music notation in combination with a symbolic representation system, such as Schenkerian analysis. The western notation and

Schenkerian analysis combination to visualisation is suitable for this task, yet the analysis technique is simultaneously introduced as it is used. Consequentially, many students struggle to connect with the multi-level abstract thinking that accompanies and is required of the subject. As of secondary consequence, the notation-and-analysis methodology is becoming the main point of focus to western music theory lectures in order to cater for students' understanding of the multi-level abstract thinking involved with the subject. While the level of abstract thinking required does directly relate to the subject's perceived difficulty, the compromise of focusing on analysis techniques does not allow the teaching and learning to get to the heart of its original function: to develop students' musical thought.

Musical thought is individual, and can be ascertained by understanding and making sense of socio-historically constructed musical frameworks and structures within the context of a bigger musical cultural picture. There needs to be a way to teach and learn western music theory which allows students to develop individual musical thought, whilst simultaneously introducing the skill of musical analysis in a manner that is synchronous with one's motivations for undertaking music study. This thesis explores this issue and suggests approaches to the teaching and learning of western music theory based on multiple sources of information relevant to each aspect of the phenomenon under inquiry.

This thesis is a qualitative inquiry into the phenomenon of teaching and learning of western music theory within an Australian context. I will adopt a hermeneutical and phenomenological approach toward the subject of inquiry, stemmed from a constructivist epistemology. My research could be seen as a phenomenological case study, where multiple perspectives of the teaching and learning of western music theory are cross-examined through various qualitative means. Inherent in this research is the exploration of reciprocal relationships I perceive to underpin the phenomenon of teaching and learning of western music theory. Such reciprocities include philosophical considerations, the development of western musical thought and considerations of pedagogical approaches to the subject.

Within the teaching and learning of western music theory, the reciprocal relationships explored are seen as combinatorial, in that relationships piece together to form a supporting educational tool that may be utilised within relevant settings. It is believed that by developing such a supporting tool, future educators can gain access to contextualising information that is specific to the teaching and learning of western music theory. This tool addresses an issue within the teaching and learning of this musical subject, which can be interpreted as an abstract and perhaps

somewhat removed field of study. By exploring and articulating the relevant components to the teaching and learning of music theory, it is believed that future educators may be able to derive learner-centred pedagogical approaches to this subject. This issue has been realised through the researcher's immersive involvement with western music theory as an educator of the subject and as a practicing performer and composer. This thesis has emerged as an investigation toward educational approaches to western music theory so my individual experiences, understanding, interpretations and perceptions of the subject may be cultivated, expanded, challenged and evolved.

This investigation explores philosophical underlays that are perceived to be relevant to the teaching and learning of western music theory. As a hermeneutical phenomenologist, I approach this research with regard to differing interpretations held from experiences and understandings within the teaching and learning of western music theory. From this methodological standpoint, I explore previously established music education paradigms that address the teaching and learning of western music. These established music education paradigms are explored in this thesis with concern towards their perceived relevance within the teaching and learning of western music theory at a university level.

Expanding from such philosophical foundations, the development of idiosyncratic musical thought is explored through the understanding of western music theory. An autoethnographical exposition articulates the possibilities of idiosyncratic musical thought as drawn from inherent relationships found within western music theory. This means understandings of the sociocultural structural elements within western music theory have been found to correlate with professional practices involving western musical skillsets.

Western musical skillsets have been categorised as contributing to the development of either musicianship or musicality. Skills contributing to the development of musicianship are seen as information-based (seen to inform one's personal understanding of western music); skills contributing to the development of musicality are seen as practice-based (seen to inform one's utilisation of musical understanding). Experiences formed by the use of one's musicality or musicianship is seen to inform musical understandings; and in turn, understandings of one's musicality and musicianship are seen to inform one's musical experiences. By arranging musical skillsets in this manner, this thesis aims to develop an educational approach where autonomous understanding is achieved within the mindset of a learner. This autonomous understanding is then seen to inform one's idiosyncratic musical forthcomings. With regard to the understandings

granted through analysis techniques and the experiences given when applying western music theory elements practically, this thesis investigates the perceived relevance of such approaches of its teaching and learning as applicable to an individual.

Given the investigations toward the intent of autonomous musical thought within individual learners, this thesis explores pedagogical techniques to achieve this aim. There are visuals throughout this entire thesis, all of which were generated by myself, using various pieces of software. Visuals were generated from either: Adobe Illustrator (chapter four visuals), flash-based presentation software called Prezi, used under an educational licence (chapter seven visuals); Microsoft Excel (chapter eight visuals); or Microsoft Word SmartArt (chapter nine visual). Pedagogical techniques are explored in the light of social constructivist approaches. Scaffolding is considered as a pedagogical technique to provide context to both individual and sociocultural understandings of western music theory. Approaches to the teaching and learning of western music theory are explored through the visualisation of such contextualising scaffolds. By visualising the scaffolding that contextualises western music theory, it is believed that both learners and teachers may have an easier time understanding some abstract complexities demanded of the subject.

Content Breakdown

This thesis is divided into four main sections, each pertaining to differing domains of the research. The four sections are entitled as follows: *Aspects of Inquiry*, *Western Music Theory Teaching and Learning*, *Visualising the Phenomenon* and *Tethering Concepts*. Each section contains *chapters* that are further subdivided into *subsections*, which focus on different aspects of the phenomenon of teaching and learning music theory.

The section entitled *Aspects of Inquiry* unpacks the general thesis structure with this *Introduction*, followed by chapters entitled *Review of the Relevant, Substantive Literature and Methodology*. This *Introduction* serves to unpack the general layout of the current study. *Review of the Relevant, Substantive Literature* looks at the work of other researchers that are related to this investigation and articulates gaps in the literature as outlined by the contentions and research questions of the current study. The focal points of this chapter are divided into three subsections, entitled: *Phenomenology and Musical Analysis*, *Approaches to Music Education* and *Aspects of*

Learner-centred Pedagogy. The outcomes and conclusions of relevant findings will be signposted to appropriate areas of this study, as too will be contested points of academic debate. The chapter titled *Methodology*, which constitutes the last chapter of this first section, discusses the philosophical research framework that underpins this thesis. The chapter is categorised into four subsections, which are named: *Qualitative Research*, *Data Collection*, *Analysis* and *Evaluation*. These subsections flow from a top-down perspective to my research approach. The overarching epistemological and phenomenological stances of this thesis are examined as well as ethical considerations of my research approach. The chapter also unpacks and discusses the ways in which data is extracted, analysed and represented in an authentic and trustworthy manner.

Western Music Theory Teaching and Learning covers topics that are constituent to philosophical underlay, paradigmatic framework and development of musical thought. This section includes three chapters entitled: *Reference Preference: An Autoethnography in Musical Thought*, *Student Perceptions of the Western Music Theory Phenomenon* and *Between Paradigms: Pedagogical Considerations*. The first chapter of this section, named *Reference Preference: An Autoethnography in Musical Thought* investigates components constituent to the development of musical thought. The constituencies of musical thought give rise to themes that include the relationships between *Musicianship and Musicality*; managing *Plurality of Perceptions* held toward western music theory; *Multitudes of Meanings* and exploring the concept of *Musical Communication*. This entire chapter is written as an autoethnography, which may be considered a reflective and qualitative self-investigation. Examples are given based on real-life experiences with teaching and learning western music theory as well as professional engagement as a performer and composer.

Beginning this chapter is a section entitled *Musicianship and Musicality*, which focuses on relationships of musical skillsets that constitute these concepts. This section defines the concepts of musicianship and musicality in terms of information- and practice-based skillsets that can be facilitated through musical reference structures. It is believed that discussing the manners in which western music theory supports practical endeavours in performance, composition, musicology, improvisation, conducting or arrangement may assist learners and educators to establish a link between theory and practice. With such links established, it is believed that the issue regarding compartmentalisation of musical concepts might be bridged.

There are three overarching themes that I explore in this chapter from my experience as a musician. These three themes are recognition that, (i) perception is individual, yet (ii) there are

rules and convention, and that (iii) the potentialities of musical communication are dependent upon structures of music theory. As a musician, I have come to adopt the viewpoint that western music theory is the subject in which the medium of music was made personally familiar, of which understandings were able to be articulated through one's preferred practical skillset, say, an instrument of choice (including voice) or conducting. Expanding from this viewpoint, the first theme of this chapter is that every single student (the educator included) of western music theory has a different perception of the phenomenon and why its study is undertaken.

The second theme I explore in this chapter is one inherent within the subject matter itself: that ultimately, when writing music, one can 'do anything', yet there are 'rules' to learn. These musical 'rules' could be defined as culturally devised reference frameworks pertaining to specific styles of musical expression. Each 'rule' taught must be made known, after which each should be explored, challenged and perhaps even broken by students in order to have their inherent boundaries understood in full. There is no dogmatic or specific method to explore, challenge or break a musical 'rule'. Instead, the individual is given the opportunity to understand each musical 'rule' in terms of their own musical preferences by exploring the boundaries that surround each concept.

The third theme I discuss within this chapter is the concept of musical communication through the understanding and use of western theoretical structures. This theme builds upon the first two yet also stems from a belief that in order to be able think musically, one should become familiar with how musical structures may be communicated. Communication through structure requires an understanding of western music theory. Understanding western music theory requires the formation of reciprocal thought structures containing formal references (as determined by music theory course structure), and personal preferences (as established through the second theme of this chapter). This is based upon an acknowledgement that musical skills ultimately fall under two reciprocal categories that determine their overall function. Either a musical skill is employed to understand an aspect of music, or it is used to demonstrate understanding of music. In other words, a musical skill is either appreciative or practical in its function. The idea underlying musical communication through western music theory structural means is to synergise skillsets, as western music theory can be used to inform either understanding or approaches to practice. This idea is explored as the third theme in this chapter.

The preceding chapter, entitled *Student Perceptions of the Western Music Theory Phenomenon* adopts the perspective of prospective learners. The chapter is based upon a survey that asks

learners to articulate experiences and expectations of university level western music theory. Subsections of this chapter are arranged with regard to core concerns found within the cohort, a low-level descriptive statistical analysis aimed toward familiarisation of the cohort at large, a breakdown of student responses to potential applications of western music theory and suggestions based upon this data.

This chapter addresses some core concerns of learner-centred approaches to the teaching and learning of western music theory. It has been observed that only a handful of students seem to regard the importance of music theory toward their overall development as a musician. From personal experience, students generally tend to miss the idea that theory informs understandings that underpin individualised practice preferences. As a result, students have been observed to compartmentalize understandings within music theory as a separate component to their musical education; rather than acknowledging its bridging properties. This issue may be inherent to student engagement, teaching approach, or aspects of either domain. Therefore, it would be beneficial to explore student perceptions and teaching approaches involving the phenomenon of music theory. As the two domains of teaching and learning are not entirely separable, this chapter focuses explorations upon the student perspective, with investigations inclusive of teaching matters that directly relate to the student experience.

The chapter also looks at how data can be used from a descriptive survey to inform pedagogy. In order to develop a learner-centred pedagogy, much needs to be explored of learners that are undertaking the study of western music theory. This chapter contains an underlying theme: that a survey can inform pedagogical design with regard to learner-focused musical experiences, influences, preferences and understandings. Learner-influenced musical resources and understanding such musical styles in terms of underlying structure can also inform pedagogy to scaffold new learning pathways and potentially demonstrate alternate ways of looking at things. This can be an effective bridging tool, as traditional musical structures might then seem more familiar to the student if analogously understood within influential musical styles. Many musical styles overlap structurally as well as philosophically, and hence including a varied range of musical styles within a pedagogical approach can help to maintain an open ear to the scope of western music theory and its influence.

These factors of influence directly contribute to interpretative themes raised within the previous chapter that (i) perception is individual, yet (ii) there are rules and convention, and that (iii) the potentialities of musical communication are dependent upon structures of music theory. Musical

familiarity and influences are individual, particular musical styles adhere to particular rules and convention. The potentialities of musical communication are dependent upon the student's understanding of structures inherent to a familiar or influential works in order to determine divergent structures contained within those unfamiliar. Idiosyncratic musical thought is then expressed as communication of musical understandings through preferred skillsets utilising musicality, and received through skillsets in terms of idiosyncratic musical thought to inform musicianship. Musical understandings inform musical experiences and musical experiences inform musical understandings. While it is necessary to provide students with a reference framework of the subject material, it is not ideal if musical relationships are left to be entirely cognitive. Learners need to be given time to internalise and emotionally connect with their own modes of musical thought through any and all available means in light of understanding the reciprocal relationship between musicality and musicianship.

This chapter provides a breakdown of student responses in light of such topics and draws suggestions from potential points of discussion within a lecture, to philosophical concerns regarding the ways in which students understand the phenomenon of western music theory. This data is presented as a descriptive analysis, using pie charts generated in excel. The percentage distributions of student responses are collated into topics, which each contain their own distributions of sub-topics. This might also be seen as pooling like-minded perceptions into particular categories (determined through the use of interpretative phenomenological analysis (IPA)) to see how they compare against each other. This has been done in order to understand the general lay of the landscape for the surveyed cohort. The descriptive statistical landscape with themes derived from IPA is then discussed in the light of approaches to teaching and learning. Points that arise from this discussion are built from preceding discussions and used for considerations of the proceeding chapter.

The remaining chapter of this section is entitled *Between Paradigms: Pedagogical Considerations*, which unpacks and explores the relevance of established music education paradigms to university level western music theory. Currently, the bigger western music theory picture is being left to learners to connect and ascertain for themselves – there are no conceptualised guidelines to doing this and no teaching support. This may run the risk of critical information being pieced together in a less efficient manner than an educator may already foresee, or being learned in a way that may hamper future musical development. Repeated mistakes in understanding material may emerge, and perpetuation of misguided concepts can cause a plethora of development issues if not handled appropriately. Students need to be taught

in a way that facilitates big-picture and smaller concept thought: the bigger-picture can outline and contextualise smaller concepts in which students are attempting to piece together themselves. The educator may also provide insight into various sections or focal points to the puzzle; groupings of ideas or skills (and how they might be used to explore music); or even help to guide students through paths previously explored by musicians of differing styles (ideally, musicians the student may find inspiring). *Between Paradigms: Pedagogical Considerations* compares elements considered by Aesthetic and Praxis music education paradigms in relation to music theory teaching and learning. Current Music Faculty website statements and other articles are also compared and referenced against constituent elements of paradigms to determine suitability to the teaching and learning of western music theory at university level. There are three subsections to this chapter, entitled *Comparing Paradigms*, *The Individual within Culture* and *Music Theory Education in Australian Universities*.

The subsection called *Comparing Paradigms* aims to further develop the connections and translation of theoretical music education approaches to the real-world practices of western music theory educators. The most prominent music education approaches within Australian universities, namely the Aesthetic and Praxis models; will be explored in terms of their relevance toward music theory university education. Constituent aspects from both paradigms will be compared and merged with themes introduced within previous chapters. This chapter also focuses on higher-level aspects of western music theory, namely cultural significance and interconnectivity between other forms of musical discourse usually offered within Australian university education (as uncovered in previous chapters). A major theme throughout this thesis is that every person who experiences the phenomenon of music will interpret it differently. This implies that interpretation is largely guided from subjective experience. Experience, a phenomenon that all humans share yet remains idiosyncratic to the particular, informs the way in which one interprets reality (including musical realities), and interpretations aim to make sense of experiences. Musical interpretation is merely one way to define and make sense of experience and hence articulate one's musical thoughts; to a musician who understands theoretical frameworks of western music, musical realities can be understood as an individual take of a culturally signified system of "acceptable" methodologies.

Such cultural factors are discussed within the subsection called *The Individual within Culture*. The relationship between the individual and culture is explored as an aspect to understandings required by western music theory, as it is itself a cultural system that can be utilised by individuals. The teaching and learning of western music theory involves a culturally understood

musical structural framework, and individualistic understandings of this framework. Visualisations of the culturally understood framework can help support the teaching and learning of individual understandings. When students are enabled to engage with their own interpretations and questions pertaining to musical intentions, educational focus shifts to the empowerment of students to achieve their own realised goals and aspirations. Aspects of musical thought discussed within this chapter can assist in the facilitation of interpretation as approaches to musical articulation can be realised through the structural understandings of western music. Constituent with musical thought, the reciprocal relationships of musicality and musicianship, individual and culture, aesthetics and praxis, and bigger-picture and smaller-picture thought inform each other in such a way that they are all congruent with the process of the so-called hermeneutic circle as elucidated by phenomenologists such as Gadamer (1975) and Heidegger (1962). This demonstrates that if a paradigm for the teaching and learning of western music theory may be elucidated, one that is modelled from the philosophical underpinnings of hermeneutic phenomenology may prove to be beneficial.

Music Theory Education in Australian Universities builds upon the elucidated understandings of previous sections to contextualise analyses of music theory course synopses from universities around Australia. Through the analysis of such website statements, it has helped to generate suggestions for curricular or pedagogical approach. The subject matter of particular lessons to be contextualised within the greater structures of music, and the educational delivery of such information is required to be idiographic and pluralistic to facilitate the independent growth of a cohort of learners. This subsection sets the grounding for devising pedagogy as current courses are analysed for their western music theory approaches. Approaches to coursework, delivery, materials and other pedagogical concerns are explicated in light of prior discussions regarding the teaching and learning of western music theory.

To recapitulate, this thesis section entitled *Western Music Theory Teaching and Learning* covers topics that are constituent to the development of musical thought in relation to student perceptions of the music theory phenomenon. It discusses reciprocal relationships inherent of the teaching and learning of western music theory: ideography and plurality; individual and culture; aesthetics and praxis; musicality and musicianship, as well as bigger-picture and smaller-picture understandings of western musical structure. These reciprocities hinge upon the facilitation of hermeneutic dialogue, using interpretation and questioning to form a basis for individualised musical thought.

The third section of this thesis is called *Visualising the Phenomenon*, and builds upon the elucidations of the preceding section. It is dedicated to explicating structures inherent in western music theory in order to demonstrate what it means to visualise conceptual musical frameworks. There are two chapters contained within this section, which are entitled: *A Conceptual Nexus of Western Pitch* and *Music Theory Confluence: An Intervallic Canvas*. Each chapter focuses upon the visualisation of a different aspect of the western music theory phenomenon.

A Conceptual Nexus of Western Pitch is a chapter that unpacks the core pitch structure elements of western music theory. This chapter, by outlining visual representations of pitch structures to build to a higher-order level; demonstrates both increasing levels of musical organisation and my thinking about how these can be represented. The aim of this chapter is to guide the reader through the contextualising scaffold that surrounds western musical pitch structure. It is hoped that by taking this approach, the reader may be able to form a top-down understanding of conceptual components to western music theory: in other words, gain insights into which musical areas are fundamental, which are elaborative, or areas that may perhaps be superfluous. Such information is valuable to music students, educators and practitioners alike.

There are several levels described throughout this chapter, and examples of concept visualisations will be given at each level. Multiple levels are given, exploring foundational intervallic concepts (level zero), through to constituent components of diatonicism (level three). This chapter will then expand upon these foundations and move through interactive systems of romanticism (level four), modality (level five) and mechanisms of chromaticism (level six). Subsequent and subordinate music theory models will be described as each figure is explicated; often with descriptions of how concomitant musical concepts from alternate styles interlace at particular levels. Not *all* musical devices have been deeply elucidated in this chapter; concepts such as melodic figurations, secondary dominant chords, modal exchange and mixture could all be expanded and reflected upon in great detail; yet it is not the purpose to map the entirety of western music theory, simply to combine and visualise core components. It is hoped that with the current explanations, one might be able to extrapolate relevant relationships of such musical tools to suit one's needs. This discussion targets western music theory university educators and students to provide an overall bigger picture to the nonlinear subject of western music theory. The intention of a visual approach is to have the bigger musical picture presented to learners of western music theory so their educational pathways can be contextualised with a visual supporting guide.

Building from *A Conceptual Nexus of Western Pitch* as well as prior music-specific concepts discussed, *Music Theory Confluence: An Intervallic Canvas* takes the visualisation of structural pitch elements to an entirely different magnitude: to that of the all-encompassing. Intervals, whilst being the simplest and smallest units of musical understanding, are also used to describe the most complex interconnections as strings or matrices of notes and interval. Visualisations provided within this chapter progress through several stages of analysis before settling into an educational tool that can be used to describe all pitch-relationship structures discussed prior within this thesis.

As greater musical contexts are understood in terms of progressive references of sound frameworks, intervals can be argued to be the facilitators of musical context as they are utilised and manipulated in all greater musical frameworks. An individual understands music differently to another due to the multitudes of experiential references and subsequent preferential interpretations. Differing interpretations of music involve individual fore-meanings and life experiences, which are constantly interpreted and questioned. Notes and intervallic relationships within specific tonal contexts parallel such differing interpretations of life experiences. Pitch relationships are perceived within time, both prior and subsequent to the perceived present moment – within each new sound: where pitches have come from and where they are thought to lead are considered within a bounded temporal framework. Intervals allow the individual to experience music, as notes flow through time simultaneously and sequentially. It is the experience of associating relationships between notes – what happens within the flow of the music – that allows one to form meaning of music being heard. Melody can be perceived by an individual as a string of sequential interval relationships within temporal boundaries, or interpreted as any analogous abstraction. Harmonies, which are comprised of simultaneous intervals, give rise to more complex multi-layered interpretations, which hinge upon how many intervallic relationships are perceived by the individual. Inherent meanings, which may be linked to individual experiences and ideographically familiar concepts, are potentially infinite yet not all avenues are valid. The visualisations constructed within this chapter are considered to be outlines of a westernised sociocultural framework that concerns intervallic structure. Hence the focus is on what structures occur within the music rather than what particular abstractions are ascertained by an individual listener.

The resultant interval matrix of this chapter can be used as an educational tool to help the development of musical thought in terms of musicianship, using information-based skillsets such as aural and analysis mechanisms to identify western music structural underlay. The most

complex chromatic concepts are usually based upon intervallic relationships, as the formal melodic and harmonic frameworks of diatonicism or romanticism have usually been obliterated; within the modality and ethnomusicological paradigms, it is the interval that is used as a reference: the interval is a very powerful musical mechanism. This interval matrix is aimed at supporting the teaching and learning processes by demonstrating the interconnectivity between foundational concepts, and how increasingly complex musical ideas may be built from this basis.

To recap, this third section entitled *Visualising the Phenomenon* is dedicated to explicating the structures inherent of western music theory in order to demonstrate what it means to visualise contextual musical frameworks. Each chapter focuses on different perspectives to visualise: *A Conceptual Nexus of Western Pitch* visualises a pitch spine of core western music theory components and *Music Theory Confluence: An Intervallic Canvas* visualises intervallic underlay to derive a holistic viewpoint of music theory's subject matter.

The final section of this thesis, *Tethering Concepts*, gathers points of discussion within *Western Music Theory Teaching and Learning* and *Visualising the Phenomenon* sections in order to make informed recommendations toward the teaching and learning of western music theory at university level. This final section is divided into two chapters: *Translating the Research* and *Implications for Future Research*. The former chapter sews the discussions of section two with visualisations of section three. Section two, *Western Music Theory Teaching and Learning* covers topics that are constituent to the development of musical thought, student perceptions of musical phenomenon and discusses educational approach. Section three, *Visualising the Phenomenon* is dedicated to explicating the structures inherent of western music theory in order to demonstrate what it means to visualise conceptual musical frameworks. *Tethering Concepts* combines discussions from these sections to suggest learner-centred approaches to the teaching and learning of western music theory using visual approaches. In *Translating the Research*, concepts have been tethered with regard to *Research Questions*, *Transitioning Students*, *Coursework Assessment Strategies*, *Coursework Marking Strategies*, *Approaches to Examination* and *Pedagogical Conundrums*. Following this chapter, *Implications for Future Research* points toward potentialities of progressing or challenging the current study.

Two appendices have been included at the end of this thesis, which comprise of ethical approval sheets and a copy of the survey issued to students in chapter five. It is hoped that the provision of these resources may be used as guidelines to one's own pedagogical development. It is not the aim of this thesis to construct a monolithic framework of the phenomenon in question; hence any

conceptual notions presented within this thesis should not be interpreted as “the answer” to the teaching and learning of western music theory. Rather, they can be interpreted as descriptive or analytical of this research, and if any reader may find use in adopting or challenging any ideas or tools included, all are welcome to do so.

2. Review of the Literature

This study focuses on the phenomenon of teaching and learning western music theory at university level. There is comparatively little research into this topic. There are many overarching histories of the development of western music theory but these do not constitute research into appropriate pedagogical understanding and strategies at tertiary level. As a result, I will traverse the substantive literature with regard to relevant domains that will contribute to the building of my research contentions and key questions as outlined in chapter one. I will focus on literature concerning western music theory, analysis and phenomenology; approaches to music education and aspects of learner-centred pedagogy.

Music theory is a subject that holds diverse meanings, insofar that Rogers (2004) states, “defining music theory is almost impossible” (p. 3). Hence, there are various interpretations regarding the value of knowledge inherent in music theory. Describing music theory within the context of Thomas Kuhn’s seminal text, *The Structure of Scientific Revolutions*, Rahn (1989) postulates that, “music theory, as a science of an art, differs fundamentally from the [natural] sciences ... its subject matter is itself aesthetic” (p. 84). Expanding from this, Westerlund and Vakeva (2011) describe music theory to offer, “blueprints, or designs, specifically constructed for the purpose of understanding the profession and these understandings may always change along with the defining conditions [of what is generally accepted or wanted in the profession]” (p. 39). From an ethnomusicological perspective, Solis (2012) offers that, “music theory at its most basic might be the production of generalisations about musical sound based on its observation and in order to better understand further instances of it” (p. 533). When appreciated from such standpoints, these statements hold a shared underlying premise that the knowledge inherent in music theory can help serve idiosyncratic understandings of music as contextualised by environments or interpretations of the medium.

At university level, western music theory concerning tonal compositions is often taught using a system of analysis devised by and named after its creator, Heinrich Schenker (1906) from his *Harmonielehre* (Theory of Harmony): *Neue musikalische Theorien und Phantasien* (New Musical Theories and Fantasies). There is plenty of debate within the literature regarding

Schenkerian analysis and what his system actually represents (Agmon, 1990; Asmus Jr., 1978; Cook, 1989, 2002; DeBellis, 2010; Lewin, 1986; Moshaver, 2012; Norris, 2005; Pearsall, 1999; Peles, 2010; Rahn, 1989; Treibitz, 1983). In an article describing motivic relations of this analysis system, Cohn (1992) articulates a central proposition of the Schenkerian approach, “The Ursatz alone is the source of compositional unity” (p. 150). To Schenker, the Ursatz (see Figure 2.1) embodied the fundamental structure of western art music, to which analyses of tonal compositions could be directed toward and condensed. This topic is addressed in Schenker’s treatise *Der freie Satz* (1935). Figure 2.1 demonstrates an example of the Ursatz as added and transmitted to the English translation of *Der freie Satz* by Ernst Oster in 1979.



Figure 2.1: The Ursatz.

As stated by Pearsall (1999) such an approach gives, “a way to reduce a countless number of details to a manageable collection of systematic relations that account for many of our musical experiences” (p. 232). Schenker’s system has long provided a reference point with the Ursatz, from which divergent musical pathways could be noted. Taken from this perspective, Brown (2005) considers Schenkerian analysis to serve as, “empirical generalisations that apply to some historically and culturally defined corpus for analysis” (p. 214). Holding such a perspective does imply a historically and culturally defined way in which people should think about music, and hence could be seen as prescriptive in nature. DeBellis (2010) reminds us, “a theory is not empirical if it is compatible with any observation whatever, that is, if it cannot in principle be disconfirmed” (p. 113), yet Brown, Headlam and Dempster actually suggest a test that potentially disconfirms the theory (Brown, Headlam & Dempster, 1997).

As previously mentioned, music theory can be argued to hold different meanings for everybody, which can cause complications in trying to establish any formal frameworks or guidelines for its education. Further complications can emerge through differing uses of terminology of music theory. Within the literature, writers often place the terms ‘analysis’ and ‘theory’ as synonymous

(Schenkerian theory, for instance). For purposes of clarification, in this study, music ‘analysis’ is interpreted as a skillset employed to practice an investigation of musical structures whereas ‘theory’ refers to a system of understanding that influences the practice of analysis. In this way, analysis is seen as a methodology constituent to a particular music theory. Hence any system of analysis can be understood to describe perceived musical realities, which can be useful to an individual as symbolic representations for understanding musical phenomena. This gives rise to the multiplicities of music analyses and what it means for an individual to understand music. On one hand, various analytical methodologies have been developed in order to make sense of differing styles of western music using sets of particular approaches stemming from underlying theoretical understandings. On the other hand, schemata formed through the practice of analysis yield differing meanings for all; running parallel with a theme of ‘unity in diversity’ as representative of musical investigations being condensed and directed toward Schenker’s *Ursatz*. Such analysis methodologies of tonal music concern (amongst other things, yet in large) an investigation of harmony, and as Treibitz (1983) postulates, “Harmony is most accurately understood as an *aspect* of structure – an aspect of the polyphonic confluence of elements characteristic of the tonal and pretonal idioms ... [and that] music develops historically as the *concept of musical structure* develops” [their italics] (p. 210). With this perspective in mind, the available analysis methodologies describe the phenomenon of musical structure.

In this study, I am using the term ‘theory’ to refer to systems of understanding that influence the practice of analysis (which describes musical structure). Consequentially, I therefore use and understand structure to be the vehicle of music theory knowledge. Commenting on the legitimacy of music theory’s knowledge, Cook (1989) postulates, “music theory acquires validity not, like scientific knowledge, from being verifiable, but from serving some useful purpose – in enabling the analyst to arrive at an interpretation, communicate an insight, or resolve a problem” (p. 136). From this standpoint, in chapters seven and eight, musical structure is conceptually visualised as a vehicle for music theory knowledge. Schoenberg (1978) argued that music theory can hold pedagogical value as a,

System of presentation (*Darstellung*) – a system whose organization may aim, sensibly and practically, towards the goals of instruction; a system whose clarity is simply clarity of presentation, a system that does not pretend to clarify the ultimate nature of the things presented. (p. 10)

In this way as a *Darstellung*, music theory crystallises a vehicle of music knowledge that serves some useful purpose musically. This study attempts to address and bridge the research gap by presenting a *Darstellung* of music theory using visual means. This has been done to assist teaching and learning whilst celebrating music's capacity to cater for differences in its perception and interpretation. In order to contextualise such a venture, I will now turn to engage with the relevant literature concerning phenomenology and musical analysis at a detailed level. With such an underpinning, I will then angle deliberations toward research approaching the formation of music pedagogy. I will also contribute to my building discussions with teaching approaches and learning models appropriately suitable for music theory as found within the relevant substantive literature.

Phenomenology and Musical Analysis

The relationship between phenomenology and musical analysis has long been a topic of great interest within the literature (Batstone, 1969; Clifton, 1973, 1975, 1976, 1983; Christensen, 2012; Dufrenne, 1973; Ferrara, 1984; Hasty, 1981; Ihde, 1976; Ingarden, 1975; Kramer, 1978, 1981; Kurth, 1912; Lewin, 1981, 1986; Lochhead, 1980, 1982; Lochhead & Clement, 1979; Newcomb, 1983, 1984; Schaeffer, 1977). In general, analysis approaches represent musical structures as the basis of knowledge and several of these systems have been devised to make sense of different western musical styles (Babbitt, 1992; Cooke, 1959; Cooper & Meyer, 1960; Keller, 2005; Lerdahl & Jackendoff, 1983; Narmour, 1991; Schenker, 1906; Schoenberg, 1978). According to Lorraine (1993), despite the large number of approaches to analysis, two models are prominently influential. The first is Schenkerian analysis for investigating tonal structures or settings. The second is set theory analysis for investigating structures inherent in the styles of post-tonal music and serialism. Each analysis system yields varying representations of musical structure in terms of the relationship between parts within the whole of a piece of music – as well as a piece of music as a part of the whole of musical structure.

Inquiring into the teaching & learning western music theory, its inherent structures are circular rather than linear. In the broadest sense, structures inherent to phenomena play a part in determining the nature of its scientific inquiry. As stated by Bent (1994), “whereas the natural scientist was seen as accounting for the particularly *linearly* in terms of the general, the human scientist was left to account *circularly* for the relation between the part and the whole” [their

italics] (p. 9). Understanding music theory's inherent circularity relies on an individual's interpretation of how musical structures piece together. Cook (2002) comments on the nature of such interpretation; that this circular process,

Is the origin of the so-called hermeneutic circle, better described as a process of oscillation or shuttling back and forth between opposites (part and whole, text and context, subject and object), the purpose of which is to converge upon an integrated understanding of the phenomenon in question. (p. 93)

Within the context of interpreting music theory structures, Cook's (2002) process of oscillation resonates with the process of interpreting a musical score through musical analysis. In undertaking musical analysis, an individual builds on interpretations; a conversation that weighs up multiple meanings in a score as they are presented. As summarised by Ricoeur (1981), the focus of the hermeneutic circle regards the relationship "between the understanding initiated by the reader and the proposals of meaning offered by the text" (p. 11). It is in this way that Schenkerian and set theory analyses (in their own distinctive ways) reveal understandings, meanings and interpretations of western music theory. According to Moran (2002), "Heidegger [endorsed] the view that understanding develops through a circling back and forth between presumption and surprise" (my brackets) (p. 18). More detail is placed on what is presumed by someone trying to understand a phenomenon; where one's fore-meaning is brought to a hermeneutic exchange rather than understanding in a strictly circular manner. Gadamer (1989) writes about the understanding of a given text, and it closely relates to the process of understanding music using analytical systems as described earlier in this chapter. Gadamer (1989) in his text *Truth and Method* maintains that understandings of the use of word affect one's meaning of the whole and that we should all remain open to difference through empathy,

This openness always includes our situating the other meaning in relation to the whole of our own meanings or ourselves in relation to it. Now, the fact that meanings represent a fluid multiplicity of possibilities (in comparison to the argument presented by a language and a vocabulary), but within this multiplicity of what can be thought... not everything is possible; and if a person fails to hear what the other person is really saying, he will not be able to fit what he has misunderstood into the range of his own various expectations of meaning. Thus there is a criterion here also. The hermeneutical task becomes of itself a questioning of things and is always in part so defined. This places hermeneutical work on a firm basis. (p. 281)

Here Gadamer demonstrates the nature of understanding a phenomenon (*Verstehen*) within the context of a hermeneutic dialogue: an internal conversation made through interpretation and questioning. In attempting to understand differing meanings and remaining open to varying interpretations, several alternatives emerge as potential divergent pathways. The hermeneutical conversation then turns to question and interpret these divergent pathways, as not everything is possible. Any misunderstood interpretations will not be able to resonate with the whole of one's fore-meanings and in such a case would re-initiate the questioning and interpretation conversation. When viewed from this angle, hermeneutic engagement can be seen as analogous to the experience of undertaking any available western music analysis methodology. Some researchers have taken such a relationship to a level of musical communication through structure (Serafine, 1988; Friberg & Battel, 2002; Nussbaum, 2007; Kramer, 2012), which will be touched upon in chapter four. For now, I simply wish to point out that hermeneutical dialogue is embedded within the analytical processes available to music – as articulated by Cook (1989), who mentions that the,

Significance of an analysis lies not so much in the *product* – that is to say, the published graph or table – as in the actual *process* of writing or reading it ... if we accept this view – if we regard an analysis not as an objective representation of musical structure but as a suggestion for how music can be experienced – then we may find that a number of the problems of contemporary music theory simply evaporate [their italics]. (p. 129)

The link between music analyses and the hermeneutic process resonates with Agmon (1990), who argues that, “Schenker’s *Ursatz*, and more generally, ‘music analysis’ of almost any familiar kind, may be convincingly construed as attempted descriptions of underlying mental realities” [their italics and quotation marks] (p. 285). Such a statement infers that analytical processes attempt to articulate musical experiences similar to the principles of *Verstehen*, where the nature of understanding is dialogical in a circuitous sense, forming meaning of experience through interpretation and questioning. As the hermeneutic dialogue aims to serve understanding of phenomenological experience, and analysis describes the phenomenon of musical structure; musical structure, if modelled, can serve as a phenomenological reference to individual analyses. In order to reinforce this notion, other components of phenomenology, such as Interpretative Phenomenological Analysis (IPA) can be adopted to explore and examine individual experiences of musical structure, rather than attempt to produce objective statements directly from individual findings (Smith, 2009). The relationship between IPA and a hermeneutic exchange is stated by Smith, Flowers and Larkin (2009),

It is a key tenet of IPA that the process of analysis is iterative – we may move back and forth through a range of different ways of thinking about the data, rather than completing each step, one after the other. As one moves back and forth through this process, it may help to think of one’s relationship to the data as shifting according the hermeneutic circle, too. The idea is that our entry into the meaning of a text can be made at a number of different levels, all of which relate to one another, and many of which will offer different perspectives on the part-whole coherence of the text. (p. 28)

Due to their alignment, the combination of musical analysis, hermeneutic engagement and IPA form a descriptive meaning-making toolset of individual musical experience. From such a standpoint, musical structures used as conceptual references of individualised understandings, serve to inform individual practices. This link is established in the same way that general understanding is historically contextualised. As written by Gadamer (1989) there is,

an inseparable difference between the interpreter and the author that is created by historical distance. Every age has to understand a transmitted text in its own way, for the text belongs to the whole tradition whose content inherits the age in which it seeks to understand itself. The real meaning of a text, as it speaks to the interpreter, does not depend on the contingencies of the author and his original audience. It certainly is not identical with them, for it is always co-determined also by the historical situation of an interpreter and hence by the totality of the object course of history. (p. 307)

Music theory is contextualised by western music history in much the same way; Peles (2010) states Schoenberg’s claim that, “if music history is ever-changing *in perpetuity* then music theory must be the same” [their italics] (p. 167). This means that music theory can be seen to establish understandings of structure, which frame an analysis methodology to reference concepts embedded at particular historical timeframes. With such an outlook, a combinatorial approach utilising the links between phenomenology, musical analysis and IPA is used as the basis of my research methodology, which is outlined in the proceeding chapter. Kang (2006) outlines the heart of the pedagogical issue that my approach seeks to illuminate, “What is necessary is not so much a change of specific topics or repertoires taught in a theory class, but rather a reconceptualization of music theory’s role with the overall music curriculum” (p. 53).

This section has highlighted the relevant areas of the literature focused on western music theory and its connections with music analysis. In addition the literature review has underlined the inherent connections between music theory and its analysis as phenomenological in the sense of

a hermeneutical dialogue. This was been done in order to contextualise this research into western music theory and the research approach. While this may be viewed as methodological the issue remains that music theory is at the same time a method or approach of the meaning making of music.

Although this thesis focuses on the teaching of western music theory in formal tertiary education, it is now important to briefly discuss current understandings of music education at all levels. The assimilation of multicultural music education might be presented as a somewhat premature *argumentum ad populum* rather than built from substantiated educational research. Legette (2003) identifies multicultural education as a solution, “Given the extent of the many social problems facing our youth in today's schools, multicultural music education may prove to be a positive step towards offering a viable solution” (p. 58), yet to this day the issue regarding this reconceptualization of music theory's role within such a curriculum remains. Previously there was a widely held belief in the supremacy of western music but with contemporary inclusions of other musics, this belief is being challenged. Although an extensive discussion of music education *per se* is beyond the scope of this inquiry, it is still useful to offer an overview of contemporary approaches to music education. I will now progress to literature that focuses on this particular issue.

Approaches to Music Education

The influence of westernised music education is arguably a globalised phenomenon (Royse, Addo, Klinger, Dunbar-Hall & Campbell, 1999). In light of post-colonial educational institutions, influences of western music theory have been taught in educational institutions around the world including: Argentina (Frega, de Couve & Dal Pino, 2010), Australia (Stevens & Southcott, 2010), Canada (Vogan, 2010), China (Ho, 2010), Cuba (Lorenzino, 2010), England (Cox, 2010), Finland (Anttila, 2010), France (Madurell, 2010), Germany (Gruhn, 2010), Hong Kong (Ng, 1999; Yuet-wah, 1999), India and Indonesia (Moro, 2004), Ireland (McCarthy, 2010), Japan (Imada, 1999; Ogawa, 2010), Ghana and Nigeria (Kwami, 1994; Okafor, 1992; Wiggins & Nketia, 2005), Norway (Bjørnstad & Espeland, 2010), South Africa (Stevens & Akrofi, 2010), Spain (Rusinek & Sarfson, 2010) and the United States of America (Humphreys, 2010). I do not wish to comprehensively review the influence of westernisation on contemporary

music education practices; I simply wish to outline the reach and predominance of western music theory in order to distinguish the scope of the current research.

From a westernised perspective, one might interpret the spread of western music to be both a positive and logical influence, as Hartwell (2009) observes, “with roots in Africa, the Near East, and elsewhere, western classical music is itself multicultural” (p. 25). Yet its inclusion has not come without issue, with Carruthers (2008) pointing out that, “many teachers are teaching music as a means to inculcate students with desirable personal attributes, social skills and cultural values” (p. 129). Some studies point toward misalignments of philosophies that support particular cultural approaches, and in some cases the western viewpoint has sometimes impinged upon or has even attempted to dominate the local culture (Imada, 1999, p. 146; Kwami, 1994; Moro, 2004, p. 197; Okafor, 1999). Central to this issue, Moro (2004) concludes that, “music has become part of the tool-kit of national identity” (p. 207). One can take Hartwell’s (2009) multiculturalism and Moro’s (2004) national identity as evidence of not just the reach of western music theory and its systems of analysis but also its plurality in application.

The present study adopts a stance with consideration to music’s capacity to celebrate differences in cultural identities, and if anything, the western doctrine need only demonstrate the ways in which western society approaches its own musical culture in order to present a prospective outlook. Such an approach can allow non-western cultures of music to develop independently and/or interdependently with westernised musical stances rather than impose a particular cultural dogma upon learners. In such a case, westernised musical perspectives can be used as a hermeneutical reference point rather than postulated as prescribed ideology. When considering *Verstehen*, such reference points would be subject to hermeneutical dialogue whenever a learner interprets and questions their understandings of presented western musical perspectives. As a product of misaligned musical and cultural perspectives or inability to align understandings of music education, a common theme emerges, the crux of which is articulated by Okafor (1992), “Modern society has made music an abstract art or discipline – a specialized subject studied apart from life and the activities of the immediate environment” (p. 6). As a point of departure to illustrate differences in cultural perspectives, Okafor (1992) has also made comment to the value of music held within Nigerian education, where moral codes of land, chronology, history and guiding principles to ethics are learned through song contexts, “in the traditional society, music was integrated not only with the arts but with life... He also learned about his own language, the things his people lived by, and how the society worked” (p. 6). When considering that music contains an inherent phenomenological structure that is understood through theoretical

understandings based on analysis, Okafor's outlook contains interesting implications toward the value of articulating music's structure. Western outlooks of music theory focus on applicability to other musical skills and techniques, such as stated by Clague, Evans, Fournier, Hickey and Younker (2009/2010), "by stressing that our theoretical knowledge about music must necessarily draw upon our experiences as performers, composers, listeners, music historians, and educators, and that this knowledge, in turn, helps to explain and to enhance those experiences" (p. 141). An interesting implication emerges when these outlooks are triangulated with comments made by Nketia (Wiggins and Nketia, 2005),

If we think of the bi-cultural [approach] in such a way that it is not really two things side by side, but two things that merge, that fit into what we call music, then it is possible for people to develop ways of thinking that allow them to work in these areas without much difficulty. (p. 63)

Much in the same way as Nketia (2005) envisages this cultural exchange; music can be viewed as a medium of cultural dialogue or as a hermeneutical conversation within musical domains that operate on principles of *Verstehen*. Cultures can exchange ideas or offer each other viewpoints through inherently different musical perspectives. The study of ethnomusicology focuses on musical culture and identity and although this thesis incorporates elements of this field, it is not the main focus of the study. There remains a link between music theory and ethnomusicological education. Kang (2006) articulates that, "for both ethnomusicology and music theory, superficial treatments of the subject often obscure the pedagogical objectives intended in these courses and negate the full potential for scholarly inquiry offered by these disciplines" (p. 46). Within the context of curriculum development in America, Plate (2012) discusses a co-adaptive quadrant relationship between education and society, where immediate practical goals serve to either meet current individual and social challenges and provide social cohesion; or enable society to grow, for each generation to find its own truths within the context of the truths it has learned (p. 1315). Central to Plate's (2012) relationship between education and society is *Verstehen*, with current individual and social challenges are interpreted and questioned by individuals and groups to form new understandings within the context of fore-structures.

One result of misinterpreted social outlooks is the placement of particular musical styles within differing social environments. Several secondary school-based studies are aimed at dissecting the perceived connoisseurship brought about from the placement of westernised 'classical' music traditions atop a pedestal, leading to the exclusion of modernised popular culture (Anttila,

2010; Chenoweth, 2009; Imada, 1999, p. 148). Although this issue has appeared to occur throughout bicultural education, solely western contexts display a similar division with Green (2005) stating that, “music educators in many countries have attempted to close the gap between two musical worlds: that of pupils’ musical culture outside the school and that of the classroom” (p. 27). The current study, although not directly focused on such an issue *per se*, maintains the value of using music from a range of western subcultures as divergent examples for music theory teaching and learning. In this way, particular musical structures can be presented with varying western perspectives in accordance with the principles of *Verstehen*. The structures taught within music theory apply to all forms of western musical outlook, with differing musical styles merely adopting differing structural techniques to implement and explore.

With regard to general music education, Myers (2006) offers an insight to a possible cause of cultural divisions, stating that, “systematic training via pre-service education and professional development continues to be a challenge” (p. 81). Ng (1999) points out an emergent issue evident across the literature, articulating that ‘music teachers generally do not have sufficient confidence in terms of knowledge, practical skills and experience, teaching strategies and an access to teaching materials’ (p. 222). Within the music theory education context, this statement holds particular resonance. Royse, et al. (1999) described that,

Global practices of music teacher training reflect the cultural values of different nations, as well as the perceived needs of their schools. The effects of Western colonialism and neo-colonialism are observed in many countries of the world, where Western models of teacher training have been adopted, and curricular emphasis is on Western music...[where] commonalities among the teaching practices of all the countries discussed appear to include an emphasis on content, teaching methodology, and applied practice. (p. 5)

America has played a vital role in identifying the needs of music education within a changing social context. Hartwell (2009) notes that, “In 1967, the Tanglewood Symposium called for greater diversity in music education and pointed out the need for courses that reflected America's changing society” (p. 28). Years later, an institute of music teacher educators cosponsored by The College Music Society and the National Association for Music Education (MENC) was formed (Hickey & Rees, 2002). Thornton, Murphy and Hamilton (2004) comment on the institutes’ findings, “Discussion focused on the need for students to use their theory knowledge in application – beyond completing theory assignments and passing theory classes” (p. 35).

Teaching university music theory involves the provision of elements within both of these dimensions: of relevant materials within a changing society and practical applications of those materials. Such an environment contains many challenges for music educators, and some studies have focused on this issue within the context of pre-service teacher education.

Anttila (2010) claims that the, “biggest challenge for music educators is, perhaps, to support pupils in developing the knowledge, skills and resources which allow them to engage with present-day music cultures” (p. 249). Triantafyllaki (2006) places emphasis on, “identifying the *social configurations* in which teachers’ practices are defined as *worth pursuing* and their participation (or at times, non-participation)” [their italics] (p. 5). Placing observations between these two angles is Campbell (1999), who identifies importance in the, “structure and contexts of learning how to teach and teaching prospective music teachers how to teach music.

Understanding the contextual interplay among students, educators and researchers and the generating and controlling forces that structure music teacher education” (p. 29). As a way to learn such a structure, teacher training through community engagement was found to provide practical utility in understanding the socially bridging and connecting properties of music (Myers, 2006). Although this investigation does not focus solely on teacher training, one thing I wish to draw from this discussion is that educators who are in pre-service training can be perceived as learners who require materials to serve values relevant to their development. This resonates with the statement made by Ojukwu and Esimone (2014) who comment that, “there is a need for the modern music educators to be mentally and practically equipped” (p. 334). With regard to music theory, educators need to be equipped with mental and practical understandings of the interpretative nature of the subject.

The present study intends to provide supporting elements to music theory teacher education, aiming to provide structural representation of music theory with links between its understanding and practice. Campbell (1999) claims that, “there are no boundaries between theory and practice in music teacher education and music teacher education research and learning to teach music” (p. 30). Westerlund and Vakeva (2011) delve into the relationship between theory and practice of music education, stating that “it is not that theory and practice are two life-worlds apart: if good scientific work is taken as a model, theory can support practice and vice versa” (p. 39). In discussing the links between secondary and university music education, Carruthers (2008) mentions that, “If university music programmes were to mirror more nearly the pedagogical goals, values and practices of school music programmes, their future health and relevance would

be assured” (p. 132). Carruthers (2008) continues by outlining approaches taken toward music education,

There are two basic educative models for school music. The first places music at the core, while acknowledging that personal, social and cultural benefits are collateral outcomes of music study. The second places personal, social and cultural benefits at the core, while acknowledging that music is one of many means to achieve such outcomes. (p. 132)

Here, the first model is known as the Aesthetic paradigm, placing music at the core and stems from Immanuel Kant’s 1790 work, *The Critique of Judgment*, which has been subjected to inquiry by many philosophers such as Hegel, Nietzsche, Heidegger, Gadamer, Vattimo, Gumbrecht, Jauss, Derrida, Kristeva and Lacoue-Labarthe (Oppy & Trakakis, 2010, pp. 10-12). The Aesthetic paradigm is a longstanding approach with many advocates (Collingwood, 1938; Dewey, 1897, 1899, 1902, 1910, 1934; Dufrenne, 1953; Findlay, 1961, 1972; Hungerland, 1948; Ingarden, 1973, 1975; Langer, 1967; Makota, 1964; Pareyson, 1965; Peters, 2005; Plummeridge, 1999; Reid, 1969; Rzepińska, 1970; Savile, 1988; Swanwick, 1979, 1988, 1994, 1999; Wittgenstein, 1966). Swanwick (1999) captures the core of Aesthetic approach stating that, “music is a way of thinking, a way of knowing. As a symbolic form it creates a space where new insights become possible” (p. 23). Music is placed as central to the teaching and learning environment.

The second model to which Carruthers referred is the Praxis paradigm that challenges the aesthetic viewpoint of music education (Bowman, 2005; Elliot, 1995, 2000; Gruhn, 2005; Goble, 2003; Barrett, 2002; Parsons, 1999; Koopman, 1998; Reimer, 1970; Regelski, 1998; Spychiger, 1997). The core of the Praxis paradigm is stated by Elliot (2000), “The nature and significance of music and music education depend on understanding as much as possible about the nature of human consciousness and its distinctly human attribute: the self” (p. 81). The word ‘praxis’ draws upon classical Greek etymology, reviving an Aristotelian tripartite classification of *theoria*, *techne* and *praxis*; respectively, “the theoretical, the practical and the productive” (Bowman, 2005, p. 52). During this time there was no detachment, according to Wason (2002), “*Theoria* was as much a subject of pedagogy in the Lyceum as was *praxis* – indeed perhaps more so” [Their italics] (p. 46). In this way, the Praxis paradigm places personal, social and cultural benefits as central to its teaching and learning. In comparing the Aesthetic and Praxis paradigms, there remains a hermeneutic issue (interpretation and questioning of matters central

to each) as common to both approaches. In chapter six I will be expanding on the Aesthetic and Praxis debate in order to devise a multifaceted pedagogical approach to music theory teaching and learning at university level.

As well as the Aesthetic and Praxis models, particularly in Europe, there is a notable body of research dedicated to Didactology (in German, *Didaktik*) as an approach to pedagogy (Neilsen, 2005, 2007; Uljens, 1998; Brezinka, 1992; Jank & Meyer, 1991). Although some concepts of and within *Didaktik* do resonate with elements of this study, I will not be using such an outlook within this thesis. This chapter section has focused on sociocultural and teacher education issues inherent to music education, as well as paradigmatic approaches to westernised music education. This has been done to further develop a basis to undertaking the current study, where it is hoped a learner-centred pedagogy can be devised that stems from the relevant literature. The next section of this chapter will serve to unpack approaches to learning and teaching within a learner-centred context. Several learning models have been outlined in the next section as they have been subsumed whilst formulating my developing thesis. I have decided not to focus on such models throughout this study *per se* as it would deter investigations away from the core issues that have been articulated within the previous chapter.

Aspects of Learner-centred Pedagogy

The core of this study is founded on constructivist conceptions of knowledge and learning, and aims to produce a learner-oriented approach to teaching music theory. As stated by Anttila (2010),

This means that the main task of the teacher is not in teaching music but in teaching the pupil. The main importance is not to cover certain content but to get the pupil to develop his/her own schemata of knowledge, as well as skills and understanding connected with music. (p. 243)

Within chapter four, I elucidate my own schemata of knowledge, and outline skills attached to my understandings as a learner of music in the form of an autoethnography. Chapter five then compares student schemata with my own. Chapter six then turns focus on the construction of pedagogy around these comparisons of schema. As Antilla (2010) mentioned, the goal of the educator in the learner-centred environment is to facilitate the pupils' development of their own schemata. Each student brings their own experiential worldview to this table, and it can become difficult to fully incorporate such a factor into pedagogy, Jan Bengtsson (2006) comments on this issue,

The worldliness of the subject ... should be understood in a reciprocal way; that is, the world is subjective to the same extent as the subject is worldly. The equivalence to the genesis of the subject, therefore, is the genesis of the world. A crucial question is, then, how to meet each individual on their own conditions, in their particular world. (p. 123)

Therefore, an overarching understanding of the phenomenon to be taught is required by and of the educator. Without such an understanding, recognising difference of mindset in others would be exceedingly challenging if not impossible. This study aims to such a pedagogy for music theory. The idea of observing comparative schemata from a personalised angle is a common theme in the literature, with Lapidaki (2007) stating this factor at the heart of composition education, "Any creative work needs individual attention and encouragement for each vision and personal experience are different" (p. 107). Likewise, Bolden (2004) holds a similar viewpoint, "through composition, students have the chance to express their own unique worldview – to place themselves firmly in the centre of their own learning experiences" (p. 22). Myers (2006) claims that, "children have an intuitive intrigue about music, and that tapping into this natural

affinity for music inevitably keeps them engaged in the learning process” (p. 86). Such outlooks resonate with a premise that the student remains at the centre of their individual learning experience (Vygotsky, 1978). The more an educator understands their students, the more can be done regarding construction of pedagogy in terms of necessary resources, approaches and delivery. Harrison, Asmus and Serpe (1994) point out that, “knowledge of students' abilities and music experience could also assist instructors in selecting course materials and in determining the amount of class time devoted to particular activities” (p. 142).

There are three domains to learning: the cognitive (Bloom & Krathwohl, 1956; Anderson, Krathwohl, Airasian, Cruikshank, Mayer, Pintrich, Raths & Wittrock, 2001), the affective (Krathwohl, Bloom & Masia, 1964; Gage & Berliner, 1989) and the psychomotor (Dave 1970; Goldberger, 1980; Harrow, 1972; Kibler, Barker & Miles 1977; Simpson, 1971). Each of these domains has an associated learning taxonomy. Such taxonomies incorporate how learning is constructed throughout associated areas of the brain and are directly relevant to learner-centred pedagogy creation. This study does not dissect these learning models, yet builds upon the understanding that cognitive, affective and psychomotor taxonomies are used in educational situations in Australia. It is also understood that these learning taxonomies are often superimposed upon models of intelligence, or rather multiple intelligences (Eisner, 1985; Foshay, 1974; Gardner, 1985; Goleman, 1995; Sternberg, 1988). Kaschub (2002) examines the relevance of these models to music education. In the same way to the learning taxonomies, these theories of intelligence are not unpacked throughout this study, yet their views are built upon, as they are understood to be important to use in the development of learner-centred pedagogy. To focus on these models within this study would deter investigations away from the core issues that have been articulated in the first chapter.

This chapter has outlined areas of the relevant substantive literature that resonate with the current study and its approach to multicultural music theory pedagogy development. This has been done with the aim of building a foundation to which the remainder of the study can evolve. The next chapter will outline the research methodology used in this investigation.

3. Methodology

Central to the current study is how I have approached my research design and its subsequent collection, analysis and evaluation of data. This chapter will outline my approach to research, including its philosophical underpinnings. There are multitudes of philosophical stances one could possibly adopt; as such one must align with a particular stance in consideration of what is to be studied. The focus of investigations and how such research is approached should align with one's philosophical stance. To adopt a stance not suited to a particular research approach or phenomenon would lead to unusable results. This chapter also outlines reasons behind why I align my approach with philosophical stances of constructivism and phenomenology to research the phenomenon of teaching and learning western music theory.

My approach to research stems from focal points of the previous chapters; which looks at the way I am able to extract data relevant to the phenomenon under inquiry. Such data cannot be obtained through unethical means, hence it is important to outline how data is obtained for research. Methods used by this study to obtain data and how these methods interlink to produce a deeper insight of my research questions will be addressed. Data cannot be managed haphazardly or simply arranged out of convenience, so areas of this chapter will discuss ways in which I have overcome such data management issues. The ways in which I analyse and interpret data will be focused upon in the section named 'analysis'. This is especially important due to the specific type of phenomenon I am investigating, which yields different experiences for all. It is important to articulate how I analyse and interpret data obtained with my research model, as my own understandings of reality could easily mar any collections or findings. The processes I take to decrease the risk of this issue are covered in the evaluation section, which addresses issues of the present study's validity in terms of its trustworthiness, transferability and dependability. Through outlining the links between philosophical stance, research methodology, methods and analysis, a research design structure is shown in Figure 3.1.

Qualitative Research

Methodology and its rationale for knowledge production relate to and have parallels with the branch of philosophy concerning theories of knowledge, known as epistemology (Willig, 2009). Central to epistemology is the relationship between knowledge and the knower. A clear comparison of this link comes from Trochim (2002), “Epistemology and methodology are intimately related: the former involves the philosophy of how we come to know the world and the latter involves the practice” (para. 1). Some topics of inquiry are better suited to particular methodological or epistemological combinations than others; reliant on the varieties of data required to fulfil a particular research aim. There are two predominant approaches to research, known as qualitative or quantitative methodologies. These two methodological approaches adopt different values and viewpoints regarding the selection of types of data and methods used to gather and analyse data. Such viewpoints pertain to the various ways in which ‘scientific’ knowledge is conceived and made.

In general, quantitative research is more suited to topics of inquiry that can be measured and represented numerically. From this viewpoint, reality is considered to consist of underlying truths which are applicable to all circumstances; that a person is situated within a natural system of causes and effects (Ashworth, 2009). Wiersma and Jurs (2009) comment quantitative research as having roots in positivism – an epistemology that considers scientific knowledge by its very nature to be founded upon the existence of a reality beyond human subjectivity, variability and uncertainty (Reimer, 2006). According to Guba and Lincoln (2004), positivism “has dominated the formal discourse in the physical and social sciences for some 400 years” (p. 23). Quantitative research that relies on numerically driven data can be analysed beyond positivist imperatives, and used by interpretive and critical theorists in novel ways. The current study does not adopt this approach to reality, epistemology or data management.

Qualitative approaches are generally considered to be more suited toward investigations involving topics and phenomena that cannot be so easily measured in terms of cause and effect. This thesis adopts a qualitative approach, as the particular phenomenon under inquiry is teaching and learning western music theory, which is different for all who share its experience. Such a topic does not yield to numerical logic nor can it be defined in any objective manner, such as intimated through cause and effect. Generally, qualitative investigations focus on experience and interpretation of a phenomenon, which often yield different meanings for all. The scope of this

research concerns the experiences people have had with experiencing western music theory within the context of Australian universities. It can be assumed that the majority of students who undertake undergraduate musical studies at Australian universities experience the education of western music theory, as it is a core unit of work. This thesis explores the differing perspectives of students in an effort to draw parallels toward a deeper understanding of the phenomenon under investigation. It is hoped that elucidations drawn from the present study might be applied to any undergraduate education facility that involves the teaching and learning of western music theory around the world. This research adopts a qualitative methodological stance where a constructivist epistemological bearing enables research towards the phenomenon of teaching and learning western music theory. Below is Figure 3.1, which displays the general research layout of the current research.

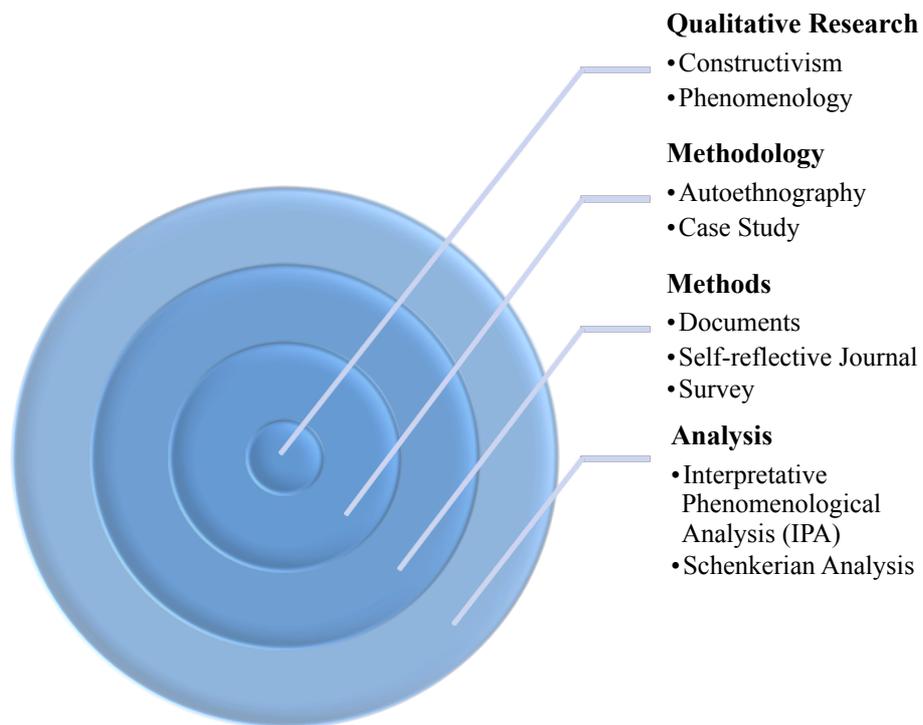


Figure 3.1: Research design underpinning this investigation.

Constructivism

For the constructivist, Wiersma and Jurs (2009) state that, “reality is seen as socially constructed” (p. 10). The constructivist epistemology views knowledge as “created in interaction among investigator and respondents” (Guba & Lincoln, 2004, p. 28). This means that one understands knowledge as linked between self-perceptions and sociocultural environment to form a shared, constructed and dialogic reality. A consequence of this epistemological standpoint unveils the existence of multiple interpretations of the same data, and as shown in the previous chapter, this interpretative quality also occurs in music. Musical understandings are constructed, understood and used by humans situated within historical and social contexts; resonating with the statement made by Hargreaves and North (1997), “it is possible to study the cultural background and context of different musical structures: historians and musicologists interpret them in relation to accepted norms and standards” (p. 4). Adding to this, Serafine (1988) recognises that, “all cultures possess music and all persons have knowledge of it to a considerable degree” (p. 1). As a consequence music is communicated, perceived and interpreted through diverging interactions of understanding. Due to its resonance with constructivism, I interpret western music to be a socially constructed phenomenon.

This thesis takes a constructivist epistemological viewpoint with teaching and learning contexts, particularly within Australian university environments. In such environments, an educator discusses musical knowledge to many people, who each bring their own perceptions and interpretations of content, relevance and importance to their own experiences. Such a learning environment demands an educator’s pedagogical delivery to align with a social constructivist stance, as differing experiences of musical concepts can be presented from a socially constructed framework of musical knowledge. A common social framework is then understood to hold multiple interpretations leading to different meanings for all. The educator’s role within this epistemological view would be to ensure the constructed knowledge framework remains consistent with the relevant, substantive literature from a background in research. There is a cultural ‘foundation’ to approaching such a pedagogical framework of music theory and is this foundation constructed as ‘western’. The ‘western’ music knowledge has a particular ‘structure’ and ‘form’ that is distinctive, yet is received and understood differently, through multiple interpretations. Hence a western-constructed pedagogy of musical structure and form is a reference point rather than a foundation. The current research unpacks the ways in which pedagogical frameworks can be assembled as a product of convergent sociocultural perceptions,

and in turn be understood as a reference of divergent personal understandings. A reciprocal relationship between socially constructed understandings and practical applications within one's own idiosyncratic and social musical experiences is discussed within chapter four. This relationship could not be ascertained without utilising a further philosophical stance known as phenomenology.

In taking up a social constructivist approach to researching music theory teaching and learning, this research thesis is phenomenological in nature. Having said that in particular, it is phenomenological in that it is autoethnographic, given that I have been both a learner and teacher of western music theory. More specifically, this research develops a phenomenological case study of western music theory teaching and learning. This is achieved by multiple methods that include reflective journal work, survey work and the use of visual documentary and diagrammatic pedagogic tools. These coalesce to build a phenomenological appreciation of the contemporary contexts related to teaching and learning music theory in Australian tertiary education.

Phenomenology

Phenomenology is the study of what people perceive in the world. Elucidating from its Greek translation, Heidegger (1992) stated that phenomenology literally means, “to let that which shows itself be seen from itself in the very way in which it shows itself from itself” (p. 284). Closely related with constructivism, it regards the study of individual experiences and the interpretation one has of a phenomenon. Phenomenology has its roots in philosophy, established by Edmund Husserl as approaching the ‘how’ of a phenomenon’s manifestation; the concept expounded by his protégé Martin Heidegger as a methodological conception (Moran, 2002). Smith (2013) defines phenomenology as,

the study of structures of experience, or consciousness. Literally, phenomenology is the study of “phenomena”: appearances of things, or things as they appear in our experience, or the ways we experience things, thus the meanings things have in our experience. (para. 5)

The phenomenological approach is concerned with underlying essences of phenomena, accepting that definitions yield only a slice of what there is to be seen. No single definition can claim to totally grasp a phenomenon, as Reinach (1969) reasons, “we see it, and yet do not see it;

we see it more or less exactly, and what we see of it is, in general, determined by our needs and purposes” (p. 180). Part of the phenomenological methodology is to set aside (or ‘bracket’) assumed knowledge concerning phenomena due to the premise that definitions cannot encapsulate the entirety of a phenomenon’s essence. This stance is adopted to sharpen focus toward a deeper understanding of the phenomenon under inquiry; by using phenomenology one “can *learn* to look; also here it is art which teaches the normal person to comprehend, for the first time, what he had hitherto overlooked” (Reinach, 1969, pp. 194-195). The more one explores a phenomenon from previously foreign angles, the greater one can understand.

There are different approaches to phenomenological enquiry; namely: ethical, existential, experimental, hermeneutical, linguistic or transcendental phenomenology (van Manen, 2011, para. 1). I align with hermeneutic phenomenology, which means I approach the study of phenomenology as largely interpretative and based upon recognition of intentionality. The intention of the current study is to explore teaching and learning of music theory. In particular this research seeks to understand how students receive and interpret this learning. As articulated by Kakkori (2009) the, “most common definition of hermeneutics is that it is the art of interpretation” (p. 19). Hermeneutics takes on a main role within the teaching and learning of western music theory as students bring differing interpretations of music and what it means to an educational environment. As postulated by Husserl and further developed by Heidegger (1992), “the perceived in the strict sense for phenomenology is not the perceived *entity* in itself but the *perceived* entity insofar as it is perceived, *as* it shows itself in concrete perception” [their italics] (p. 267). This resonates in the idiosyncrasies of interpretation with regard to all musical perceptions, which when formalised become music theories. As described in chapter two, all musical theories govern a system of analysis (a methodology of musical perception), which serve to articulate musical phenomena, as an individual perceives them.

Hans-Georg Gadamer sustained the work of Heidegger on hermeneutic phenomenology within social research through “three metaphors of understanding: the fusion of horizons, the act of dialogue and the hermeneutic circle” (Wilcke, 2006, para. 1); essential in this is the recognition of the idiographic. A particular concept that resonates within music education stated by Gadamer (1989) is, “the subject matter appears truly significant only when it is properly portrayed for us” (p. 326). This statement relates to the teaching and learning of western music theory quite directly, as understanding variations of what it means to approach subject matter is an important aspect of being an educator. In outlining such approaches through Gadamer’s analogies,

1. Western tonal music structures use the same materials across all styles and genres. Theoretical structure is socio-culturally and historically bound, as well as deeply personal to the individual. As a fusion of such horizons, music can be understood to hold meaning through sound, sociocultural, historical and/or personal dialogues.
2. The act of dialogue between learner and music is believed to be both socially and individually directed through deep musical understanding. It is socially directed in the manner of self-in-relation-to-the-world (interpersonal knowledge) and individually directed as dialogue of *Dasein* (intrapersonal knowledge) through the medium of music.
3. The hermeneutic circle acts as a mediator for understanding beyond word, and behaves much like a dialogue in itself (as unpacked in chapter two). One constantly builds from prior experiences and knowledge of music in order to advance understanding.

These three analogies are significant as they underline the first contention of the current study: that music theory is being taught using inherited traditions that have remained largely unchallenged over time. Such viewpoints also resonate with multiple intelligence theories (Eisner, 1985; Foshay, 1974; Gardner, 1985; Goleman, 1995; Sternberg, 1988). The above analogies do not actually reflect how music theory is taught currently but rather how it can be used in educational situations. When viewing the phenomenon from the combination of these three phenomenological analogies, a deeper importance to the teaching and learning of music theory emerges. Instead of merely teaching analysis methodology, this subject can teach musical thought from interpersonal, intrapersonal and purely musical angles. Following this logic, the more one understands music, the more one can understand themselves and themselves in relation to others and vice versa.

Paul Ricoeur expands hermeneutical phenomenology extending Gadamer's work. Ricoeur argues that meanings are not given directly to us, and that we must therefore make hermeneutic detours through the symbolic apparatus of the culture (Van Manen, 2011). This is particularly resonant with the above analogies, this comparison inferring the individual must interpret music theory through both intrapersonal and interpersonal understandings. This occurs through hermeneutic dialogue, which Gadamer (1989) describes, "the movement of understanding is constantly from the whole to the part and back to the whole. Our task is to expand the unity of the understood meaning centrifugally" (p. 327). As such, this thesis uses an autoethnography, which is described by Ellis, Adams and Bochner (2011) as, "an approach to research and writing that seeks to describe and systematically analyse personal experience in order to understand cultural experience" (para. 1). Considering this approach in light of the previously mentioned

analogies, the process and product of autoethnography reflects the researcher as a central to the framework of the research. I have selected this process as runs congruent with the phenomenon under inquiry.

This autoethnography is used as a phenomenological intervention given my role as a practitioner, learner and lecturer of western music theory. My reflections and ‘moving in and out of understanding’ is what I am doing as a researcher yet also acknowledging myself as a teacher and learner. This attitude aptly aligns with Bartleet’s (2009) autoethnographical experiences of “foregrounding my personal experiences and then zooming outwards to see how they fit within a broader framework” (p. 716). Ellis (2004) recounts this cyclic approach with reference to autoethnographical method:

Back and forth autoethnographers gaze: first they look through an ethnographic wide angle lens, focusing inward on social and cultural aspects of their personal experiences; then they look inward, exposing a vulnerable self that is moved by and may move through, refract, and resist cultural interpretations. (p. 37)

Autoethnography combines ethnographic and autobiographical inquiry (Ellis, 1997; Ellis & Bochner, 2000), and is a “form of cultural inquiry conducted by a cultural insider, drawing upon the inquirer’s own life-world experiences” (Luitel & Taylor, 2006, p. 92). I explore my own experiences of teaching and learning within the western music theory phenomenon as a professional performer, composer and university music theory educator. This stance aligns with Smith’s (2013) premise that, “phenomenology studies conscious experience as experienced from the subjective or first person point of view” (para. 5). From this standpoint, phenomenology and autoethnography are employed to explore and challenge my own assumptions regarding my research. Autoethnographical data in this light might be seen as a snapshot of my experiences and situated understandings; much like a teacher needing to know where students’ understandings lie before constructing new pathways for their students to venture; I explore my own critical reflections in order to construct further pathways toward understanding the phenomenon of teaching and learning of western music theory. That to explore a phenomenon in greater detail than my own perception would require an exploration of my own and others’ thinking and learning habits and experiences, which could then be referenced against each other to “uncover the interaction of significant factors characteristic of the phenomenon” (Merriam, 1998, p. 29). My perspectives and insights drawn from the autoethnographic approach are further extended by a case study of teaching and learning western music theory. This allows the

research to be extended and go past my own understandings of this phenomenon and allow deeper insights to its teaching and learning.

Case Study

The case study approach is also used within this thesis, which is defined by Feagin, Orum and Sjoberg (Eds.) (1991) as “an in-depth, multifaceted investigation, using qualitative research methods, of a single social phenomenon” (p. 2). Case studies aim to improve our understanding of ‘what’s going on’ in a particular situation, which in the case of the present study is the phenomenon of teaching and learning western music theory. Merriam (1998) states that the “case study has proven particularly useful for studying educational innovations, for evaluating programs, and for informing policy” (p. 41). A case study focuses on “establishing the how and why of a complex human situation” (Yin, 1994, p. 16). The case study is, therefore, not characterised by the methods used to collect and analyse data, but rather by its focus upon a particular unit of analysis: the case (Willig, 2008). This approach offers a means of investigating complex social units consisting of multiple variables of potential importance in understanding a phenomenon (Merriam, 1998).

A second concern is that the case study provides minimal basis for scientific generalisation. As stated by Merriam (1998), “results, however, would be limited to describing the phenomenon rather than predicting future behaviour” (p. 41). This study focuses on a single case with different perspectives, adopting learner, learner and teacher, teacher, autoethnographical and phenomenological angles in order to offer cross-correlational analysis that aims to investigate and describe different aspects of teaching and learning western music theory. Due to the cross-correlational nature of this thesis’ research structure I do make some general comments regarding potential future behaviours as generated through phenomenological enquiry.

Another concern regarding this approach is that it may lack rigour, citing that a researcher may have allowed “equivocal evidence or biased views to influence the direction of findings and conclusions” (Yin, 200, p. 14). Yet, as outlined in the National Statement on Ethical Conduct in Human Research (2007, updated December 2013), “The rigour of qualitative research should be assessed primarily by criteria of quality and credibility of data collection and analysis and not by matters of validity and reliability as defined in research designs that employ quantitative methods” (p. 27). Wherever possible, biases have attempted to be bracketed as per the

phenomenological perspective, with general assumptions for all progressive steps taken over the course of this investigation challenged and cross-examined with other sources. It is recognised that this particular concern regarding the case study approach is actually the main concern for this entire thesis and its philosophical construction. That my epistemological, methodological and phenomenological stances hold potential biases is a concern of high regard, and methods concerning this are explicated later in this chapter. Elucidating themes from multiple perspectives can give greater insight toward this phenomenon of inquiry. My methodological approach utilises the convergence of multiple perspectives to elucidate generative models from data sources.

Data Collection

As in most case studies, several data collection strategies are employed in this thesis. Each strategy pertains to a different perspective of the case study, all of which are encapsulated within my phenomenological approach. Specifically, these collections are achieved through survey, documents and the use of a self-reflective journal. These approaches to data collection within the case study focus multiple perspectives toward the phenomenon of teaching and learning music theory within the Australian university context.

Self-reflective Journal

This thesis uses a reflective journal as one of the data gathering measures to explore the phenomenon of teaching and learning western music theory whilst challenging all assumed or foundational knowledge. In the context of hermeneutic dialogue, commonalities emergent through all divergent and idiosyncratic interpretations is centrifugal to this research. In employing a reflective journal the researcher has also generated an interpretative autoethnography that adopts the wider phenomenological frame of the thesis. Such an autoethnographical examination focuses on my own engagement with the phenomenon as a professional performer, composer and educator of undergraduate western music theory.

Rather than adopting a narrative (genre) approach to autoethnographical writing, the description of and commentary about my experiences with the phenomenon in question may be considered a

reflective, qualitative self-investigation. Quicke (2010) identifies this approach as that of a “critical reflective practitioner” (p. 239). Data from my autoethnographical research is given equal weighting to all other data that may be derived from other sources or ascertained using different methods. As a social constructivist, I understand that my experiential viewpoint is merely one of many; as a phenomenologist, I appreciate that the definitions I hold to encapsulate my understandings of a phenomenon can only embrace my experiential viewpoint. Having asserted this, I challenge widely held preconceptions and my own understandings of western music theory in response to questions asked by students and challenges faced as a teacher and learner within this particular field. This has been done in order for me to widen my understanding throughout the research process. My experiential perspective on the data contributes to the formation of themes to be investigated throughout the thesis: that music theory teaches idiosyncratic musical thought; therefore, grounding for musical communication could be established through (an ideally) holistic understanding of the phenomenon. My autoethnography both frames and drives the subsequent data collection and interpretation employed in this thesis. Such methods coalesce to illuminate the progression of understandings in the teaching and learning of music theory.

I utilised the reflective practice of a research journal in which I explored the phenomenon in light of new data as it was generated and presented throughout the study. Phelps (2005) postulates that, “Reflectivity involves mental reaction to perceived issues and inconsistencies and a willingness to challenge personally held values, beliefs and assumptions” (p. 38). This is echoed in Moon (2003) who argues that, “We tend to use reflection when we are trying to make sense of how diverse ideas fit together, when we are trying to relate new ideas to what we already know or when new ideas challenge what we already know” (p. 10). The purpose of this journal was to explore the phenomenon of western music theory without any assumed functionality or presuppositions to its nature and role. Phelps (2005) explains the process of reflection as “an inherently non-linear approach to learning, and reflective journals embrace non-linearity, enabling intermingled documentation of ideas and experiences from the past, the present and the imagined future” (p. 39). I often questioned my own thoughts and identified assumptions within this journal, as a melting pot of cross-references from multiple perceptions.

Survey

The descriptive survey undertaken in this thesis aimed to identify the meanings associated with western music theory from the perceptions of first-year tertiary music students. The survey (see Appendix B) was designed to explore beginning university students' perceptions and attitudes about their own experiences with the phenomenon of learning and utilising western music theory. Survey participants were first-year undergraduates who all undertook mandatory music theory units. With ethical permission an explanatory statement, consent form and hardcopy questionnaire were given to the students. I selected this cohort as they were new to tertiary music study and their understandings of western music theory were based on their previous studies and not yet influenced by the course I was to present. The survey was undertaken before the first western music theory lecture of first semester. This anonymous snapshot was of students who have (mostly) come into university education straight out of secondary school. The survey sought to identify their musical influences, concerns, idiosyncratic musical agendas and perceptions about the role of western music theory in their own music engagements.

The survey comprised multiple answer checklists, open-ended questions that sought information about instruments, genres, music theory and so forth. In addition deep questions asked for defining statements or beliefs held by individuals. As well as providing data for this thesis, it eventuated that information provided potential discussion points and identified material to be included by the researcher (as their teacher) over the upcoming semesters. As will be discussed in chapter five, survey questions aimed identify the idiosyncratic perceptions of participant responses from which could be constructed common themes using interpretative phenomenological analysis (IPA) (Smith, Flowers & Larkin, 2009). This analytical approach will be discussed below. The survey also explored the musical backgrounds of students, such as family and school influences. In phenomenological research it is recognised that all experience is understood in the frame of prior experience. Thus it is necessary for the researcher to understand a participant's background in order to get a better idea as to how they have come to their understanding of a phenomenon.

Documentary evidence

Pedagogical materials that address elements of western music theory in general and in tertiary educational institutions are examined as to agreed content and to where texts diverge in both information and philosophy. The particular topics that have been included within each textbook, the manners in which topics have been addressed and the overall structure and outline of a greater musical picture have been examined and critiqued. Diagrams have also been used to reflect ideas and are considered both a document and intervention useful to this research. In section three of this volume, visual methods are used to present information regarding the phenomenon of inquiry. Visual approaches to realising the phenomenon have also been documented and analysed. Knoblauch, et al. (2008) noted that, “the application of visual research methods has also become increasingly widespread throughout the social sciences” (p. 1). In the current study I have used such methods to explore my own understandings of western music theory. I have also used visual representations of western music theory (based on my journal) in an attempt to access materials in verbal, aural and visual means. This approach then allows individual students to form their own understandings of their own musical engagements and the role of music theory within their prior musical experiences.

Other contextualising documents have been used, such as course guides, Music Faculty website statements and other articles relating to the teaching and learning of western music theory with an Australian university context. Documents and articles that contextually surround Australian university environments have also been used. These documents were analysed both for information and for underpinning philosophical positions about the value and role of western music theory in contemporary music practices.

Gaining Ethical Approval

As an informed, reflective educator and researcher, ethical considerations are paramount in underpinning the collection of data for the purposes of research. As part of the application for ethical permission to undertake research an explanatory statement provided a complete explanation of the purposes and uses of the student survey. In lieu of a signed consent form, the return of an anonymous survey implied consent to participate in the research. The collection and use of information collected from this survey is consistent with both the National Privacy

Principles of the Commonwealth Consolidated Privacy Act (1988) and the National Statement on Ethical Conduct in Human Research (2007, updated December 2013). As this survey was undertaken at the university during usual theory class times; no burden, inconvenience or discomfort arose beyond that of everyday experience which meant that this was considered to be low risk research. The survey itself took between 15 and 20 minutes for students to complete. The survey was completed anonymously, and any comments have been attributed to pseudonyms or de-identifying contexts. Storage of all data collected adhered to the University regulations and was kept on University premises in a locked cupboard/filing cabinet for 5 years. No person was subject to coercion or pressure in deciding whether to participate; inclusion to the study was through voluntary consent and students were under no obligation to consent to participation. Participants were not offered incentive for completion, and if consent was given to participate, participants were informed they could only withdraw prior to the survey being submitted, as no further participation was required. This survey did not require the researcher to access student personal records, and did not breach the confidentiality of any person involved.

Data collected from this survey have been de-personalised to nullify the risk of potentially infringing the rights, privacy or professional reputation of any students or institutions involved. As data collected was seeking to gain information from students beyond that normally collected within routine interactions, and data collected was intended for future publication; ethics committee advice was sought from a Human Research Ethics Committee for the implementation of this survey. Advice pertaining to the requirement of ethical approval for the use of the researcher's reflective journal was sought, yet as the reflective journal did not name any persons, nor directly involve the interactions of humans, ethics approval was not required. Ethical approval was granted for the survey (see Appendix A). The researcher had gained employment as a lecturer within the music conservatorium responsible for the teaching of music theory. As the survey was to be issued to my students, to generate non-coercive ethical distance, my supervisor made the initial approach to participants; and I was not present during this time. This strategy was undertaken to manage a potential conflict of interest according to article 5.4.3 of the National Statement on Ethical Conduct in Human Research (2007, updated December 2013, p. 89). Once data have been collected they should be analysed.

Analysis

Analysing and comparing different interpretations of sources play a large part in this thesis, as even slight variances can influence a reader's general understanding of a topic being researched. Smith (2009) explains that, "qualitative research involves collecting data in the form of naturalistic verbal reports... and the analysis conducted on these is textual. Thus, the concern is with interpreting what a piece of text means rather than finding the numerical properties of it" (p. 2); data analysis and data collection usually co-exist at the same time within qualitative research. As Wiersma and Jurs (2009) state, data analysis "begins soon after data collection begins, because the researcher checks on working hypotheses, unanticipated results ... less data are collected and more analysis is produced as the research progresses" (p. 237).

The goal of the analysis of the data is for the researcher to reach a place of understanding of the experience of the teaching and learning of western music theory. As stated in chapter two, a combinatorial approach utilising the links between phenomenology, musical analysis and IPA is used as the basis of my research methodology. Ultimately this should result in the development of an integrated statement that aligns several data sources and perspectives toward research questions and contentions stated in chapter one. Giorgi (1985) predominantly relied on the insights of a researcher who worked through all data collected to get a sense of the whole and then discriminated meaning units from the descriptions of the phenomenon being studied. Within a hermeneutic context, the analytical process is not explicitly specified as Koch (1995) asserts:

Hermeneutics invites participants into an ongoing conversation, but does not provide a set methodology. Understanding occurs through a fusion of horizons, which is a dialectic between the preunderstandings of the research process, the interpretive framework and the sources of information. (p. 835)

Koch's idea resonates with the cyclic interpretative concepts discussed earlier in this chapter pertaining to phenomenology and autoethnography (Gadamer, 1989; Ellis, 2004; Bartleet, 2009), and analysis methods with this in mind have been utilised throughout this thesis. This thesis draws on several different data sources each of which requires different analytical techniques. Data include text-based analysis of documents, open responses, a researcher journal and a survey, which utilises low-level descriptive statistics. This thesis also undertakes Schenkerian

analysis for the investigations of a) musical resources and b) informing text within the researcher journal.

Text-based – Interpretative Phenomenological Analysis

In order to accurately analyse the lived experiences of individual research participants and of the general population of first-year tertiary music students being researched, interpretative phenomenological analysis (IPA) was employed. IPA, according to Smith (2009), “attempts to explore personal experience and is concerned with an individual’s personal perception or account of an object or event, as opposed to an attempt to produce an objective statement of the object or event itself” (p. 53). In this mode, the researcher analyses the language used when one recounts their lived experiences in order to make a reasonably and justifiably accurate interpretation of the way that person views the object or event in question. This requires attentiveness to ways in which language is used, an awareness of reality as an interpretive experience, and an interest in human meaning to how we make sense of our lives (Laverty, 2003). Within the context of this thesis, using IPA enabled the researcher to analyse the language that is used to respond to the varying data collection methods (including the researcher’s own journal entries). A phenomenological approach identifies and takes account of particular influencing factors to a phenomenon that could be seen as specific approaches to its study; as underlying assumptions of western music theory are set aside in order to potentially glimpse the phenomenon in an ideal (unbiased) state.

The IPA method involves transcribing open responses given by research participants or other text-based sources pertaining such as the researcher journal. Upon transcribing various sources, the text is then analysed in a manner allowing emergent themes to transpire from the data. Emergent themes arise directly from the identification of key ideas that are noticeable focuses of the data. Key themes are elucidated from the data to coalesce to construct a phenomenological viewpoint. Through the collation of emergent themes, overarching themes are then sought, utilising the commonalities that have emerged. Once overarching themes have been elucidated, they are interpreted within the greater context of the phenomenon under investigation, aligning with philosophical underpinnings of the hermeneutic circle as described earlier in this chapter (Gadamer, 1989; Koch, 1995; Ellis, 2004; Bartleet, 2009). Interpretative meaning was discussed and modified in conversation with both supervisors, which is a form of peer debriefing or

member checking. This thesis has adopted the use of IPA to analyse text-based data for emerging and overarching themes, including documents, a researcher journal and open responses given by research participants within a survey issued (the latter of which will be evident in chapter five).

Survey – Survey marking

The analysis of the survey that was instigated also used descriptive analysis. Descriptive surveys align with a qualitative research paradigm. The main purpose of this was to judge scope of university students and to get a handle on the landscape relevant to the phenomenon of teaching and learning of the western music theory. As stated by Trochim (2006),

Descriptive statistics are used to describe the basic features of the data in a study. They provide simple summaries about the sample and the measures. Together with simple graphics analysis, they form the basis of virtually every quantitative analysis of data.
(para. 1)

The descriptive states were generated by the researcher using Excel and presented as bar graphs, pie charts and tables. From the results of the survey I was able to gain a base insight to how those students viewed the phenomenon of western music theory. The results of the survey are explored in chapter five, and are used as a point of reference to the autoethnographical investigation within chapter four to elucidate potential considerations to the creation of pedagogy. This data was also used to further understand and develop of effective teaching strategies for music theory classes aligning to philosophical underpinnings of hermeneutical phenomenology.

Schenkerian Analysis

This exploration uses the musical technique of Schenkerian analysis to explore inherent natures of the phenomenon, using music to describe music. According to Pankhurst (2013), the analysis involves “looking beneath the immediate surface of music in order to understand how it connects up into larger spans” (para. 1); Schenkerian analysis was selected for this journal exploration as

it allows “for the setting aside of sedimented knowledge, as well as a passing resemblance to the Husserlian *epoché*” [their italics] (Cook, 2002, p. 96). The method involves the adoption of scale degrees, Roman numerals, figured bass and other symbols as a cypher for understanding underlying systems to music being analysed. The method is stipulated here by Karl-Otto Plum and translated by William Drabkin (1988),

Schenkerian analysis is commonly viewed as a way of approaching music from two directions: from the foreground (the score of the complete piece) to the background and ultimately to the single underlying structural chord, through a series of levels representing the successive 'reductions' of the piece; and also the reverse process by which the foreground is determined from the background by the application of a number of 'prolongations', at different levels, to a basic tonal framework. (p. 143)

Schenkerian analysis is open-ended and interpretative in nature; single chords, phrases and sometimes, even tonal centres can be seen as constituents of differing musical contexts. As such there is no dogmatic approach to either its teaching or learning. This being said, there is a rigorous underlying syntax to its use, and in a case where there are multiple interpretations or analyses of the same snippet of musical data, there can be a judgement made as to which interpretation is ‘more correct’ than another – usually the most simplified explanation to the particular musical data. Some instances may occur where multiple interpretations or analyses are ‘as correct’ as each other, and will require further justifications to argue musical points. At such a juncture, Schenkerian analysis utilises music’s socio-historical framework to associate the most probable interpretation as ‘more genuine to thought of the period’ than another. As stated by London and Rodman (1998), the “processes of gathering and interpreting analytical data are tightly intertwined and mutually influential, the need to take such contextual information into account may be all the more pressing in those instances where we do not find what we expect” (p. 101). Schenkerian analysis is usually the main analysis tool for musicologists, theorists and professional musicians around the world. Temperley (2011) states that it “remains the dominant approach to the analysis of tonal music in the English-speaking world” (p. 146), and hence is often a focal point to music theory teaching and learning at university level. As discussed in the preceding chapter, Schenkerian analysis resonates with the phenomenological and hermeneutical approaches that frame this thesis. It is not intended to give an introductory example of undertaking Schenkerian analysis of a given work. Examples of this can be found in several texts (Forte & Gilbert, 1982; Pankhurst, 2008; Cadwallader & Gagne, 2010; Beach, 2012) and online tutorials (Kelley, 2002; Solomon, 2002; Pankhurst, 2013).

Evaluation

There are a handful of influential works from the late-1980s that concentrated their focus on the evaluation of rigour in qualitative research to meet standards of inquiry. The evaluation of rigour in qualitative research can be argued to require differing concepts than those that traditionally govern quantitative methodologies (Leininger, 1985; Agar, 1986; Lincoln & Guba, 1986; Guba & Lincoln, 1989). Such discussions arose as methods for determining rigour in quantitative methodologies were found to not be appropriate the idiosyncratic nature of qualitative studies. Regardless of the multitude of ways in which rigour or validity might be defined, the concepts revolve about a question as stated by Lincoln, Lynham and Guba (2011),

Are these findings sufficiently authentic (isomorphic to some reality, trustworthy, related to the way others construct their social worlds) that I may trust myself in acting on their implications? More to the point, would I feel sufficiently secure about these findings to construct social policy or legislation based on them? (p. 120)

There have been several models proposed regarding trustworthiness of qualitative research (Guba, 1981; Leininger, 1895; Pratt, 2009; Tracy, 2010; Birks & Mills, 2011) which build upon criteria proposed by Lincoln and Guba (1985); articulating the notion of trustworthiness as a parallel of traditional notions regarding rigour. Trustworthiness is outlined in terms of credibility (analogous to internal validity); transferability (analogous to external validity); dependability and confirmability (analogous to reliability and objectivity respectively). According to Krefting (1991), “Too frequently, qualitative research is evaluated against criteria appropriate to quantitative research and is found to be lacking” (p. 214). Therefore, qualitative researchers need models that are appropriate to qualitative research designs so as to ensure rigour without sacrificing the authenticity of their investigation. According to Patton (1999) the “qualitative researcher has an obligation to be methodical in reporting sufficient details of data collection and the processes of analysis to permit others to judge the quality of the resulting product” (p. 1191). Hence, a qualitative study may be called trustworthy (or even credible) when it presents such descriptions and interpretations of human experiences in such a way to allow people who might share that experience to instantaneously recognise the descriptions being suggested. For Birks (2014) “Qualitative research may be undertaken from various philosophical and methodological perspectives and this raises questions about the ability of a single evaluation tool to be fit-for-

purpose” (p. 233) As a matter of consequence I have listed the mechanisms I have utilised to ensure rigour within this thesis, which too are based upon postulations made by Lincoln and Guba (1985).

As an example of my rigorous attempts to generate trustworthy data, this thesis began with my lifelong engrossed contact with western music theory and eventually through its teaching and learning throughout my lifetime as a student, performer, composer and educator. As a tertiary educator of music theory, my methods, understandings and interpretations of the phenomenon were constantly and consistently challenged by those I taught. Seeking trustworthiness and credibility, I reformed, reflected and re-evaluated my approaches, thoughts and understandings constantly. I have developed western music theory models that utilise elements through the dissemination of texts, musical scores and other pedagogical materials over several years of in-depth investigation of elements found to be significant and effective within my teaching and learning to others and myself. This development expanded upon experiences as a university theory educator, and built upon models previously formed as pedagogical elements for western music theory teaching and learning. In search of authenticity this thesis also utilises the cross-examining of several perspectives to western music theory. Models created have been cross-checked against all varying perspectives in order to check for consistency of application across all levels. Each chapter has been cross-checked with each other chapter to ensure common themes remain consistent. Also pertaining to credibility, I have utilised the method of peer debriefing (also known as member checking) throughout the production of this thesis, articulating and reiterating my working designs, thoughts and attitudes toward the phenomenon of investigation. Upon constant constructive criticisms, suggestions, and re-evaluations of data and approaches, I have attained intellectual catharsis – I understand that my experiential viewpoint is merely one of many; as a social constructivist I understand knowledge is socially constructed within this field and as a phenomenologist, I appreciate that the definitions I hold to encapsulate my understandings of a phenomenon can only embrace my experiential viewpoint.

Pursuing transferability, I have provided descriptive interpretations of data about the context of the phenomenon of teaching and learning western music theory. It is written in such a way that it is hoped the reader may make judgements to its applicability to idiosyncratic contexts outside of my own. This approach is designed to invite readers to make connections between elements of the study and their own experience. Shenton (2004) suggests that, “after perusing the description within the research report of the context in which the work was undertaken, readers must determine how far they can be confident in transferring to other situations the results and

conclusions presented” (p. 70). For Patton (1999), “Focusing on what is learned by the *degree of convergence* rather than forcing a dichotomous choice – the different kinds of data do or not converge – typically yields a more balanced overall result” [their italics] (p. 1194). Where appropriate, I have made suggestions as to potential limitations of transferability to external contexts, and I do make some general comments regarding potential future behaviours as generated through phenomenological enquiry.

Toward seeking thesis dependability, there are places within this thesis with outline areas of reciprocity; these are not to be taken as governing laws, yet if the reader within their own experiences can see these reciprocal points, then this speaks for the study’s credibility. An external appraisal requiring both the establishment of an audit trail and the carrying out of an inspection by competent external, disinterested examiners have been arranged for the purpose of determining the dependability of this thesis. Ultimately, this research will be disseminated in scholarly journals thus coming under the critical gaze of multiple experts in the field who will be able to impart judgements based upon the process results (as a dependability judgment); whilst also impart judgements with concern to the product (data and reconstructions) as a confirmability judgment.

This chapter has discussed the methodological considerations that have influenced this research and ultimately this thesis. The next chapter will begin the approach to the teaching and learning of western music theory through an autoethnography akin to a reflective qualitative self-investigation. This is a driving force to the thesis and explores my personal experience of the phenomenon of teaching and learning western music theory education as a professional performer, composer and educator of western music theory at Australian university level.

II – Western Music Theory Teaching and Learning

4. Reference Preference: An autoethnography in musical thought

The principles that people routinely reference are always tangled up with the experiences that people preference in their learning and teaching of music theory. From my reckoning western music theory is the specialist subject knowledge where the medium of musical thought is made familiar to the individual by understanding structural interactions of music. Understandings can be expressed through a range of musical skillsets; and everything else – the way in which people experienced, practiced, perceived, interpreted or even understood music – is stylistically individual and personal. The issues to be explored in this chapter have emerged from my immersion in the fields of music as a performer and composer of western art music, and as an educator of western music theory at university level. There are three overarching themes that I wish to explore from my experience as a musician. These three themes are recognition that, (i) musical perception is individual, yet (ii) there are rules and convention to musical structure, and that (iii) the potentialities of musical communication are dependent upon structures of music theory. A focus on these overarching themes emerged through practice; university students constantly challenged my original musical assumptions as a performer and composer as an educator during my years teaching western music theory. Franklin (1977) has argued that the practitioners of curriculum research should be “individuals whose primary training is within the specific curriculum domain” (p. 74). Such specialist knowledge and involvement informs the formation of questions and problems for exploration. It may be that a specialist would identify issues significant within the particular discipline that might not be recognised by a non-specialist inquirer.

Castelán, Gaeta and Cavazos (2014) state that, “curriculum design constitutes an essential part in the educational process, being the starting point for instructional planning, through the structuring and organizing of a series of elements that create the foundations of theoretical and methodological framework” (p. 6999). This chapter will explore my experiences, understandings and perspectives regarding the teaching and learning of music theory from such a perspective. As a starting point, observing my own experience, western music theory demands particularly complex and abstract understandings within its teaching and learning at a university level.

Drawing from this experience, it is my understanding that each learner relates to theory differently due to such cognitive demands. This leads to my own general observation that many students tend to mimetically follow the teachings demonstrated by an educator rather than constructing or developing idiosyncratic interpretations of the material. The perceived established approach is more teacher- than learner-centred, which begs the question, ‘how can western music theory be taught in a learner-centred fashion?’

One such approach can be to allow minds to understand music without having to translate into verbal language – to develop its own musical lexicon. Whilst a student at secondary school, I used to develop my sight-reading by exploring much of my instrument's repertoire from the library: I had figured the only way to train sight-reading was to have a constant source of scores previously unseen. After consistent exposure to this practice, I noticed I was able to 'hear' pieces if I read them without my instrument: the visual signifier of each printed note conjured finger movements and sonic abstractions within my mind as if all had been compressed to the same schema. I could say that I was 'hearing' with my eyes, although the sounds were completely internal, with colour-feeling associations familiar to some accounts of musical synaesthesia (Sacks, 2007). Upon realisation of this additional musical feature, I wondered if other such abilities could be learned. I noticed my focus evolved as I developed my sight-reading, from beat-to-beat processing and translating to reading ahead and taking notice of more subtleties on the fly. My own relationships and understandings developed by the sight-reading exposure did not require translation into a verbal medium – I understood music within my perception based on my prior musical experiences and understandings. As time progressed, I would inquire of my colleagues if they had made any similar connections with their understandings of music. Everyone would give me different answers, which made me believe that musical perceptions are deeply personal and are based on the idiosyncratic musical experiences and understandings of the individual.

Over time during solo practice and with the study of western music theory, I began to identify musical interaction systems that underlay a written score whilst performing or sight-reading. If I were performing or sight-reading within a group scenario, I would also listen outside my part (being read ahead) to get an idea of the greater musical realities of the band. Being able to identify areas of music such as dominant progression, local chordal flow, non-harmonic sequential movement or tonicization (amongst other concepts) aided me greatly in terms of contextually and systematically understanding 'what is happening' within a piece of music and allowing me to follow the score in a fluid manner. Reading into a score in this way required a

complex and rather abstract understanding of theoretical systems whilst employing performance and/or sight-reading skillsets. This mindset took a long time to develop, yet once the skillsets informed each other; they provided an interesting take on what kinds of information could be received through a score. In terms of deriving learner-centred approaches of this experience, the specific time constraints outlined may be a limitation to a lecture environment, yet a main point that can be taken away is that the development of one's understanding (and hence eventual) application of western music theory structures is of significance. I am postulating that when a learner understands structures taught and knows what can be done with information provided by western music theory, individually motivated applications can emerge. Therefore, a key area of a learner-centred approach to the teaching and learning of western music theory would be the development and maintenance of how each learner understands applications of the material as referenced within their own musical experiences – how each learner thinks musically. Ipso facto, learner-centred approaches to the teaching and learning of western music theory focus on the realisation, development and consequent autonomy associated with personalised musical thinking.

As a western musician, I have come to adopt the viewpoint that music theory is the subject in which the medium of western music was made personally familiar, of which understandings were able to be articulated through one's preferred musical skillsets, say, an instrument of choice (including voice) or conducting. Expanding from this viewpoint, the **first theme** of this chapter is that every single student (the educator included) of western music theory has a different perception of the phenomenon and why its study is undertaken. As an educator it was rather difficult to simply place one umbrella definition to justify music theory – that would imply I knew the commonality of every student's intentions within each class. When asked why the study of western music theory was important, I would often give the answer, “to understand the nature of western music”; but this statement did not seem to satisfy all perceptions. Explaining, “The commonality of this subject is difference” is even more cryptic, and threatened to confuse students before they had begun – I could not develop and deliver a course on such intuitive premises and so I sought to unpack this belief.

As my musical focus expanded from solo and orchestral performer to composer and theorist, it did not take me very long to realise that theory was not composition. Whilst composing, theory helped to quickly develop and organise conceptual ideas in terms of frameworks, structures and linkages, as if translating ideas into the medium of western music. Once the framework had been established, it would usually be expanded from the theoretical design by aural and other means.

In essence, I would use the ideas brought about from western music theory to generate a structurally-based ‘scaffold’ of a piece; after which I would spend the next period of time happily breaking all the conventions I had just so carefully set up. Throughout this process I noticed that each ‘phase’ of construction and subsequent deconstruction were gradually coming to me quicker. I could listen to a theoretical frame that was written and hear where it ‘wanted to go’ within different emotional contexts. I later realised I was developing my emotional relationship with theoretical frameworks – my personal ‘take’ on the subject matter of western music theory. As every student (educator included) holds a different perception of western music theory, approaches to its teaching and learning need to accommodate the development of the individual and are explored in this first theme.

The **second theme** I wish to explore in this chapter is one inherent within the subject matter itself: that ultimately, when writing music, one can ‘do anything’, yet there are ‘rules’ to learn that seemingly govern the ways music ‘works’ from a western classical standpoint. These musical ‘rules’ could be defined as culturally devised guidelines pertaining to specific styles of musical expression. Each ‘rule’ taught must be made known, after which each should be explored, challenged and even broken by students in order to be understood fully. There is no dogmatic or specific methodology to explore, challenge or break a musical ‘rule’. Instead, the individual is given the opportunity to understand each musical ‘rule’ in terms of their own musical preferences by exploring the boundaries that surround each. Such an opportunity allows individuals to engage in hermeneutic dialogue. This second theme stems from the first: commonality is this found to be differences of interpretation.

Throughout constant performance, composition and theory practice, I began to understand the ways I related to music. I had completed a Bachelor of Music and Bachelor of Education undergraduate double degree; and began coordinating music theory and aural courses, lecturing to first and second year undergraduates as I undertook my master of education postgraduate degree. The constant exposure to differing perspectives of western music theory to my own served to reform my own understandings, and reinforce the idea that everybody holds a unique view of the subject. The approaches I took to deliver the content were consistent with my thoughts of exploring and challenging western music theory conventions in order to teach by example to individual learners. Nearing the end of the year, discussions within the lecture theatre were of a different nature to those at the beginning; students were able to communicate with each other regarding theoretical elements that they could hear within musical examples. For instance, there was a particular buzz around the concept of the Neapolitan sixth chord within one

lecture that used Franz Schubert's song cycle, *Die Winterreise (The Winter Journey)*: and focused upon the third movement, *Gefror'ne Thränen (Frozen Tears)*. Before the first hearing I demonstrated how one could use the Neapolitan sixth as a means of modulation through an aural-based approach. I had unpacked the chordal concept in order to demonstrate the sounds to 'listen out for' as the piece was played and offered the challenge to describe the emotional effect this combination of devices brought about within the individual listener. The combination and relationship of previously learned techniques must have triggered a few brainstorms, as there was a twenty-minute group discussion about how Schubert had utilised the device and the differences in the way the device was received. As an educator, the experience astounded me: a great deal of musicianship and musicality was required to engage in such a conversation. Each student was able to discuss their comprehension of the theoretical underlay; whilst each had their own manner of relating the musical affect the devices had upon the piece. Examples such as these instances throughout the years supported my thinking that individual interpretations emerge from socially constructed musical concepts or structures; thus adapting education approaches to work for (rather than against) this phenomenon seems appropriate: these are explored throughout this second theme.

The **third theme** I would like to unpack is the concept of musical communication through theoretical structures. The concept of communicative qualities within music via structural means is a topic of interest within the literature (Serafine, 1988; Berliner, 1994; Friberg & Battel, 2002; Nussbaum, 2007) hence I am not postulating this idea to be new. As mentioned by Reid (1962), "A subject can be properly understood by those who have worked and lived within it" (p. 3) and I wish to explore the development and application of this concept based from my experiences as an educator of music theory as the idea stems from the first two themes of this chapter. It is my understanding that in order to communicate musically, one must first be able to make sense of music: to be able to think musically. I will be exploring musical thought as an idiosyncratic frame of mind that emerges through structural and contextual understandings of music theory. With such an understanding, one can then express them through whichever musical means they prefer.

Throughout this chapter I unpack how musical thought can be facilitated through symbiotic thought structures: formal references (sociocultural and historical-based information), and personal preferences (as established through the **second theme**). This is based upon an acknowledgement that musical skills ultimately fall under two interdependent categories that determine overall function and purpose. Either a musical skill is employed to understand an

aspect of music, or it is used to demonstrate one's understandings of music. In other words, a musical skill could be seen to inform either understanding- or practice-based disciplines. These two categories are unpacked and defined within the next section of this chapter. Lastly, this autoethnography is aimed at challenging the established traditions surrounding the teaching and learning of music theory to investigate the field's underlying purpose and function as taught in Australian universities.

Musicianship and Musicality

In order to contextualise themes explored in this chapter, I will need to explain the definitions I hold regarding terminology. This chapter ultimately examines the ways in which I perceive the learning of music theory to occur and the means by which such perceptions may be facilitated from a learner-centred approach. This insight emerges from individual perception, along with a working appreciation of the rules and conventions and the structures of western music theory. It can be argued that information- and practice-based skillsets can be seen as constituent components to musicianship and musicality respectively. Within this section I shall unpack constituent skillsets of both musicianship and musicality in order to define these overarching concepts in terms of purpose toward individual musical development.

There are a collection of skillsets that serve to develop and contextualise musicality and musicianship and hence contribute to overall experience and understanding. Each concept is interdependent and when combined can form, inform and reform individual musical understandings and experiences. The visualisations in Figure 4.1 outline the interdependent skillsets that contribute to the formation of musicality and musicianship. Approaches to music theory education have remained rather unchallenged over time, which is a main contention of this thesis so I would like to begin by presenting two previously seminal approaches in Piston (1941) and Macpherson (1920). As elucidated by Piston (1941),

It is clear that this knowledge is indispensable to musicians of all fields of the art, whether they be composers, performers, conductors, critics, teachers, or musicologists. Indeed, a secure grounding in theory is even more a necessity to the musical scholar than to the composer, since it forms the basis for any intelligent appraisal of individual styles of the past or present. (pp. xix-xx)

A few decades prior, Macpherson (1920) held a similar view of theoretical structure,

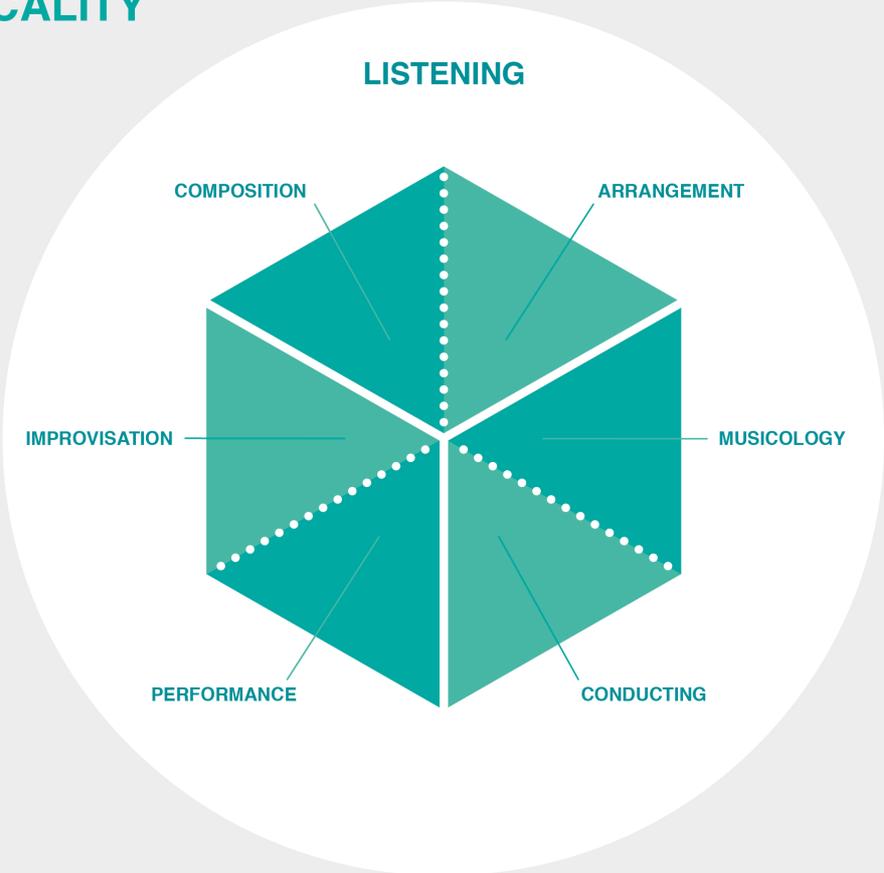
Instead of being regarded solely as a preparation for the work of the would-be composer, it is beginning to take its rightful place in the musical development of the average student, as a natural corollary of his elementary aural training, both melodic and rhythmic. (p. i)

From such a standpoint, an educator can allow for idiosyncratic adaption and growth as each learner is shown various ways in which structural information might be used.

Figure 4.1 outlines how interrelated musical skillsets contribute to define the overarching terms of musicality and musicianship, and this section will unpack my perceptions of how these terms are defined as governing mechanisms of information- or practice-based skillsets. Musicality draws from intuitively understood meanings within musicianship to be used whilst practicing. From this angle, musicianship is seen as the overarching understanding one holds of music using information-based skillsets. Musicality is hence seen as the act of drawing from information-based skillsets in order to facilitate and direct practice-based skillsets. I will be unpacking this symbiotic relationship throughout this section. It should be noted that above all, as noted by Swanwick (1979), that “listening is first on the list of priorities for *any* musical activity” [their italics] (p. 43). Swanwick expands upon this notion with the concept of ‘audition’, which “means attending to the presentation of music as an *audience*... Audition is the central reason for the existence of music and the ultimate and constant goal in music education” [their italics] (pp. 43-44).

Figure 4.1 outlines musicality before musicianship. This ordering holds no particular meaning, save outlining practice-based skillsets before information-based ones, hence I shall fashion my discussions in a similar manner. I perceive the structural underlay of western music theory to be a socially constructed phenomenon to which each learner derives idiosyncratic understanding in terms of purpose, function and practical application. Each constituent skillset shall be discussed separately as an overview of how I perceive such interdependent relationships to occur.

MUSICALITY



MUSICIANSHIP

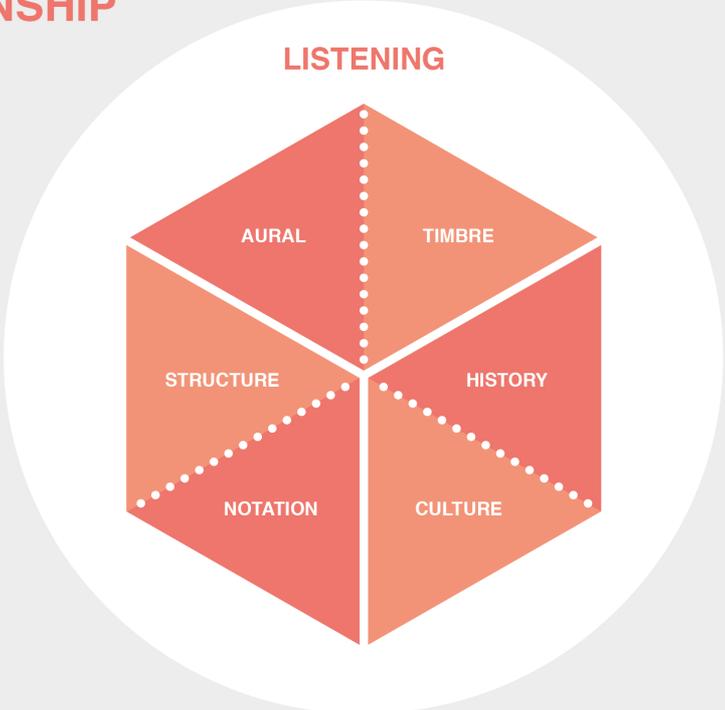


Figure 4.1: Musical skillsets contributing to the formation of musicianship and musicality.

Composition can be argued to contain the skillset of articulating and manipulating musical structures to suit musical preferences. It is a major skillset of a musician as it concerns the creation of music whilst documenting a score that can then be used to communicate the performance of musical preferences. Swanwick (1979) defines composition as, “the act of making a musical object by assembling sound materials in an expressive way” and that a, “composer may know what materials will sound like from past experience in the idiom” (p. 43). Such preferences could be demanded of a design brief, or less formally as an expression of individual or group musical understandings. Of course, a composer will often utilise their skillset in a manner that is most familiar, and there is a possibility a composer might not adopt theoretical structures as a tool for writing music. Whichever approach may be undertaken to create an individual composition, it can be argued that the creation process involves a degree of problem solving involving musical structure. Since music theory informs the learning of musical structure, it can be argued to play an important role in the compositional process.

A composer is able to utilise the theoretical structures inherent of western music theory to design or sketch scaffolds to underlay a piece being written. Upon completion of such scaffolds, other skillsets such as aural mechanisms or understanding timbre can serve to modify, enhance or evolve ideas that were theoretically conceived. This approach to composition considers influential elements and structures as they are explored, compiled and analysed of a theoretical model on which a piece is based. This approach can also help to form, inform and reform such structural understandings as they are practiced. Manipulation and reformation of the underlying theoretical grounding would then become a priority as these structures are heard. As one hears and understands how their theorised structures sound in actuality, aural skills can be used (and consequentially developed) to reinforce or restructure particular aspects of the underlying theoretical scaffold. As particular elements are identified as preferred, divergences may also be heard simultaneously, as one hears where the piece ‘wants to go’. At such a juncture, a composer would decide which divergent path would best suit their musical preference. Being a major skillset, composition involves many interdisciplinary skillsets in order to professionally articulate and express musical preferences. It can be argued that all musicianship skillsets can be used whilst undertaking composition, yet the link I wish to focus here is the use of theoretical structure within this practice. As one continues to use theoretical models to create preferred sounds, it can be argued that a referential understanding of underlying musical structures emerges and evolves as a result of regular practice. It is this referential understanding which helps one build, evolve and monitor self-growth of personal musical understandings.

Arrangement can be argued to be the investigation of established theoretical structures within a composition and manipulation thereof to suit reformed stylistic musical preferences. Musical arrangement requires an understanding of structural formations underlying a given piece of music – identifying structures that give a piece its particular sound or flavour, with an intention of being reworked to a new stylistic setting. With any arrangement, elements of the original piece will still be heard, yet given a new musical perspective. Theoretical understanding can greatly assist to complete this undertaking, as one can utilise musical structure to capture the particular musical interactions outlining the key ideas within a composition. An arranger may be able to capture significant ideas or frameworks by ear or by analysis. By whichever means, the formations can be argued to reference theoretical structures inherent of a particular piece. This means theoretical understanding can be used as a reference to manipulate the settings around core ideas identified to be reworked.

Instrumentation and orchestration skillsets help to inform the instrumental and vocal colour palette in terms of timbre, as tonal qualities of instruments differ and can even change throughout varying tonal registers. Skillsets pertaining to timbre also help understand particular constraints of instruments and voices with respect to range, articulations, effects, technical limitations, stylistic preferences, intonation and blending. Such information overlays musical structure, as a selection of instrumental matchups can be considered within a particular setting. Other information-based skillsets can be used to undertake arrangement practices. Aural mechanisms can serve to identify important structures within and piece as well as informing progress of the revised setting. Historical and cultural understandings of musical styles of pieces to be reworked can also greatly assist the general success of an arrangement. *Ipsa facto*, as notation can be used to represent structures that underlay a given piece, arrangement can also be argued to be undertaken using musicianship skillsets. As a key aspect to arrangement is the identification of significant structures and re-setting them in new musical contexts, music theory can help contribute to the practice of arrangement.

Musicology and **Ethnomusicology** can be argued to focus on historical, sociological and cultural contextualisation from investigation of preferred structures, such as the oral traditions of folk music or the cultural impact music has upon particular social demographics internal or external to western society. These skillsets require the use of theoretical understanding in order to associate influential musical structures with cultural behavioural patterns. For instance, a musicologist might be interested in particular sociological or cultural approach toward the performance of a particular piece of western music, or analyse any inherent structural element

that might influence practices. These fields aim to explore and understand music through historical and sociological context, serving to contextualise performance interpretations based upon findings. For instance, researching the life and times of Ludwig van Beethoven have given plenty of historical insights into the ways people would have received his music during his lifetime. Discussing the interdisciplinary connections music theory holds with other musical subjects, Clague, et al. (2009/2010) elaborate on performance, aural, musicological and theoretical connections, “the most obvious cross-curricular synergy for musicology lies between music history and theory” (p. 149). In order to approach a performance true to the historical context of Beethoven’s compositions, one would require greater sociological and cultural contextualisation to understand particular mannerisms people of Beethoven’s time would have practiced. Such investigations can focus on varying levels of influences, from familiar structural models used by musicians of the period to sociocultural aspects of the environment in which a composition was performed. Such tasks require the use of interdisciplinary musicianship skillsets. Each musician has varying breadths, depths and levels to each information-based skillset as contextualised from personal musical experiences, each musicologist can be argued to have a different take on music and its effect on culture.

Ethnomusicology involves similar work to musicology, save that musical structures explored are not of western origin. Solis (2012) argues that music theory, “should be – and indeed is – neither of limited value to questions about music as a social practice nor marginal to the discipline of ethnomusicology at large, but rather of central importance in practice and in principle to both” (p. 533). Theoretical tools can assist as a counter-reference to autochthonous modes of theorising – of society, culture and structures – inherent to ethnomusicology. Kang (2006) observes, “As a theorist who has done some ethnomusicological research and taught ethnomusicology courses, I find one remarkable similarity between the teaching of theory and ethnomusicology at various institutions of higher learning” (p. 45). Although ethnomusicology has the potential to reap new and unused theoretical or structural ideas for use within western music, cultures should be preserved within their own musical contexts. A western musician would need to understand the cultural practices and mannerisms of the particular musical contexts in order to fully respect the origins of such musical formations. Kang (2008) articulates that theorists “have been quite keen to point out the intersections and continuities between musical cultures ... [and] that musical cultures around the world have never been discrete; there has always been exchange and synthesis” (p. 105). This being mentioned, it goes to show that ethnomusicologists can benefit from music theory frameworks, structures can be references or articulates as a convergence or

divergence from western musical structure. Quite often, an ethnomusicologist would need to understand musical structure in a comprehensive manner as contextualised within western practices. Kang (2006) articulates this requirement from a pedagogical standpoint,

Music theory practiced in general, universal terms is often vague and unsatisfying, because it is the in-depth investigation of a musical culture that produces understanding and interested engagement. At its most effective, music theory deals with the conceptual, technical, and formal details that define a music's sound, style and aural interpretation. All music scholars, including ethnomusicologists and historical musicologists, deal on some level with theoretical and analytical issues in their research, sometimes even formulating a new vocabulary and creating entire theoretical systems in order to better explain musical repertory or musical practice. (p. 51)

If there are no formal musical structures with which an ethnomusicologist can reference, one would have to devise standalone systems of theoretical structure in order to make sense of the way music is conceived within a particular culture.

Conducting can be argued to be the kinaesthetic interpretation of musical structures based upon historical and sociological contextualisation. Temporal movements are expressed with silence or pitch structures, which can flow in manners analogous to a conductor's actions. Before the conductor can communicate ideas to an orchestra, a conductor should understand the music to be performed in terms of its historical and cultural context, so one can interpret in a manner genuine to the time, style and customs of the sociocultural contexts within which it was created. A conductor should also understand theoretical frameworks within a composition as this information can serve to familiarise a conductor with inherent prominent, supportive, elaborative and possibly superfluous structural underlays. Theoretical knowledge can also assist to determine which instruments should be prioritised at any given point in the music, and this assessment is based from the identification of significant musical formations throughout the piece. Understandings pertaining to timbre should also be known, as the balance of instrumental colours and flavours is important to the overall artistic vision to be articulated.

All of these musical understandings are monitored by the use of the conductor's aural mechanisms and hearing what all musicians are doing to contribute to the composition as outlined by a score. With these understandings in mind, one can begin to kinaesthetically demonstrate the nature of the music in terms of how it is perceived to sound as a whole. There is far more to conducting than this thesis can articulate, yet the point here is that all musicianship

skillsets can be utilised to facilitate and develop this practical skillset. Theoretical understanding assists the conducting process, as it helps navigate the formations occurring within a given piece of music. Conductors do more than simply keep time for an orchestra; they are interpreters of a greater musical vision, collective of all constituent musical elements as written by a composer.

Performance can be argued to be communication through interpretation of articulated musical structures using an instrument or voice within individual or socialised contexts. According to Altenmüller and Gruhn (2002) music performance “involves all motor, somatosensory, and auditory areas of the brain” (p. 63). Ultimately, both instrumentalists and vocalists use musicianship to facilitate and contextualise performances. Information-based skillsets can help interpretation and individual expression of musical structures as notated in a score or memorised. The memorisation of pieces to be performed can be achieved through structural familiarity, a technique supported by Aiello and Willianmon (2002), who state that students “should come to value the importance of describing and analysing all the theoretical aspects of the pieces to be memorised” (p. 176).

A performer can use structural understanding to navigate what is happening throughout a performance and gauge musical ideas that are greater than their own part. For instance, certain chordal degrees may require alteration of tuning; other group performance considerations include one’s dynamics, balance, timbre, intensity or blending. Aural mechanisms are used to regulate and facilitate these performance considerations in terms of the individual within the musical whole, using understandings of timbre to distinguish between musical ideas at any given moment. Cultural background and history provide contexts to performance including the way in which pieces are performed or marked within notated scores by an individual or group. There is much more to performance than this glancing discussion, yet it can be argued that all information-based skillsets are used throughout performance practice.

The final practice-based skillset depicted in Figure 4.1 is **improvisation**, which can be argued to be the communication of musical thoughts through articulation of preferred structures. The act of improvisation requires finely tuned instrumental and aural skills. The act also requires an extensive understanding of theoretical structures, as postulated by Berliner (1994) “exploration of individual pitch combinations produces new vocabulary patterns ... [and] manipulation of these components in relation to the formal structures of pieces, whose elements are also subject to variability” (p. 222). Theoretical structures are used both as references and materials to understand present musical realities, and split-second decisions are made during a performance.

Theoretical structures inform one's musicianship, which intuitively receives and interprets musical meanings using this information. Meanings made reflect individual and cultural understandings and preferences, and the more one understands their own musical thought; the faster and easier one can work with all factors involved. As articulated by Swanwick (1979), "improvisation is, after all, a form of composition without the burden or the possibilities of notation" (p. 43). There is much to the art of improvisation, requiring a musician to be able to think in music – a concept which I will be unpacking throughout this chapter. I have not encapsulated all factors contributing to the formation and learning of improvisation, as this would require a separate volume. It can be appreciated that this musical act requires the totality of a musician's capacities in order to successfully achieve fluency of this practice-based skillset.

From such descriptions, practice-based skillsets each use information-based skillsets in combinative ways to achieve musical goals. I have used the overarching terms of musicality and musicianship to refer to the culmination of practice- and information-based skillsets respectively. As articulated within each description, as one is musicking, musicality draws from musicianship. From this angle, musicianship is seen as the overarching understanding one holds of music in terms of information-based skillsets. Musicality is hence seen as the act of drawing from information-based skillsets in order to facilitate and direct practice-based skillsets. In a way, my thinking and modelling of such musical undertakings can be seen to correlate yet expand upon the C(L)A(S)P mnemonic proposed by Swanwick (1979, p. 45). I will now describe my perceptions of information-based skillsets, which contribute to the formation of musicianship, which describe the medium of music from different angles.

Firstly, musical **structure** can be shown using several visual systems of representation, such as notation, Schenkerian analysis or visualisations as given in later chapters (seven and eight). Notation can be used to represent theoretical structures in score-based contexts, such as an orchestral score, chart sheet, guitar tablature or non-traditional notation techniques. Schenkerian analysis can be used to demonstrate evaluations of structural information from a score. The visualisations given in chapter seven categorise analysed structures in the context of operational interrelationships; whilst the interval matrix shown later in Table 8.5 can assist in the entire process of analysis, contextualisation and visualisation of musical structures inherent of a score. Musical structure focuses on understanding the nature of music through its contextual, cultural and interrelated frameworks. **Analysis** techniques are adopted in order to gain insight into structures inherent of a score. The theoretician is able to identify, analyse, reference and classify

familiar musical structures in order to ‘map’ stylistic boundaries. This practice enables further musical investigations to occur which utilise musicality in conjunction with a preferred skillset.

The skillset of reading music requires an understanding of **notation**. When notation is used as a noun, it is not so much a skillset in itself, rather a medium for the communication of musical ideas that can be used in performance, composition, arrangement, musicology, conducting and adopted in understanding improvisation. Notation can be seen as the written medium of western art music. Although variations may be used in order to depict differing ideas, its core conventions tend to be understood by musicians within the western world. It is one common ground that is used as the medium of compositions ranging from solo pieces to epic orchestral symphonies or operas. Fluency in reading music notation can lead to hearing notes by sight, as if one were reading a story and hearing their own voice inside their mind. Complete fluency in reading music notation can lead to deeper intuitive connections or abstractions, very much in the same manner as reading a book and receiving an abstraction pertaining to conceptual meaning.

Ultimately, music is sound before anything else. **Aural** mechanisms are facilitated to refine musicians’ listening skills to hear structural frameworks inherent of a piece of music. This is done to monitor and understand musical realities and enable one to act upon them. Structural aspects may be identified and utilised in a variety of ways, either through performance, improvisation, musicology, arrangement, conducting or composition skillsets. Ideally, theory and aural can be taught synchronously, yet not all university music schools take advantage of this alignment. Timbre may also be used to differentiate elements of musical structure. An educator may request a class to listen to particular instruments in a recording as they demonstrate a structural element. Timbre, when used in this aural fashion, can be a great way to differentiate different musical aspects and assist both theoretical and aural understandings at the same time.

Aural mechanisms are linked very closely with auditory memory and help to refine the type of music one hears within their mind. Performers heavily rely on their ears in order to determine their place within the music, as postulated by Aiello and Williamon (2002) that, “teachers might encourage their students to develop their auditory memory, explaining that above all, music *is* sound” [their italics] (p. 177). Improvisers also heavily rely upon their aural facilities in order to keep a sharp ear whilst combining musicality skillsets. Essentially, all walks of musician utilise their ears in order to connect and communicate with their music and other musicians. The more one’s ears understand the inherent natures to musical styles performed (such as identified

theoretical structures), the easier it is to facilitate personal development through the reformation or refinement of such understandings. The process becomes even easier if the aural mechanisms are tuned to subconsciously identifying greater theoretical structures of music being performed. It is this powerful information-gathering link between the ears (through aural mechanisms) and eyes (reading or analysing a score) that can be heavily exploited for significant gains in personal musical development. With this idea in mind, approaches to teaching and learning which utilise these two areas as a combined link seem an ideal medium to understanding musical structure. Alongside listening in terms of structural identification, timbre is another large aspect to what is heard within a piece of music. On a surface level one is able to identify instruments through their timbral signature, yet deeper than this lays the study of instrumentation and orchestration.

Instrumentation and Orchestration involves understanding restrictions, capabilities and textures to **timbre**, the qualities of sound that colour structural frameworks. An understanding of available instrument limitations (including technological) does much more than serve a musician to the ways in which ideas may be articulated. From a performer's point of view, such information informs interpretation, as understandings direct particular playing styles. An expert understanding of instrumentation and orchestration would know a fellow instrument's particular range and tuning tendencies, and adjust their own pitch to compensate. One can also learn where register changes affect quality of sound within fellow instruments, prompting an appropriate compensation to counterbalance any disparity of timbre. If one were to perform with such concepts in mind and also command a theoretical understanding of a particular piece; one would be able to identify, for instance, that "in this duet line, the clarinet is playing the countermelody against the flute". This would inform the clarinet player to play 'underneath' the flute line, whilst understanding that when they are playing the root note of the chord progression, to give a slight tenuto in order to support the melody whilst adhering to the balance of tuning and tone quality between instruments. This example serves to show the contextualisation provided when theory, instrumentation and orchestration are utilised within the performance skillset. Essentially, to a performer, it enables clearer musical communication between instruments that play with each other.

Verbal approaches to musical understanding can take the form of examples from **culture** and **history**. Such approaches would often include the use of story regarding theoretical elements or concepts to be taught. These approaches are similar to musicological practices, and serve to provide contextualised understanding to the formalised reference structure of musical structure. They describe historical and sociocultural influences of musical structure, which serve to

contextualise practice-based skillsets. Both culture and history play an immensely important role in musical understanding, as music and people are intertwined. Every individual culture has a musical identity and a history of how such understandings and practices came to be. Through such study, a musician is able to adapt understandings to reflect, comment, expand or evolve upon cultural and historical practices based on individual preferences. Trevarthen (2000) comments on this,

At the same time as it recites tradition, music-making needs to break free of history and rules. It is seeking after new patterns and narratives that will offer drama on first hearing, and that can stimulate excitement, inspiration and the impulse to sing and dance. In this creative mode, music is insistently new, and yet its melodies, its textures and its architectural shapes often become unforgettable and fixed, out of time... New, but unforgettable; intuitive, but learned, cultivated and skilful; timeless but made inside time – the experience of music seems full of paradox. (p. 156)

From such an angle, the musical self can be argued to be in philosophical dialogue with such sociocultural and historical influences. The section in chapter six entitled *The Individual within Culture* aims to unpack this relationship in greater detail, for the moment it is important to understand that musical structure is socially constructed and can be used in philosophical dialogue by an individual through cultural and historical understandings.

Hence, at the heart of the matter lies the individual. Music theory can help one to determine a structural representation to ‘what music can be’, in terms of formations that may be manipulated to suit personal tastes; yet in order to utilise music theory in this manner requires one to understand what personal tastes may be. With all the different spheres of musical development, it can be difficult for some to determine what it is one may actually want to do with a musical career, let alone figure out a personalised definition of music. From personal experience, studying the ways in which other musicians have solved their musical problems structurally (through theoretical understanding), has given me insight into my personal tastes. Constant contextualisation of theoretical structures has enabled me to understand the formations that govern the sounds of the pieces I enjoy the most. They have also provided contrasts, upon investigation of pieces I do not prefer (for whatever reason) and aiming to figure out the frameworks to determine why this is so; such exercises have provided my own definitions of music and helped gain some clarity with respect to my own musical tastes.

The more I understand music, the more I understand myself. Music theory allows me to think ‘musically’, a process enabled through the medium of musical structure, which is used by musicianship and musicality, which is part of the self. This process of musical thought is enacting knowledge-based skillsets to inform practical-based skillsets; in turn, the idiosyncratic perceptions gained through practical-based skillsets inform understandings, which can be utilised by knowledge-based skillsets. Every individual contains varying levels of musicianship and musicality, as well as varying breadths and depths of constituent skillsets. The relationships between constituent skillsets are interdependent; the relationship between musicianship and musicality is symbiotic. These relationships culminate to form musical thought, which is understood through the medium of musical structure, and is shown in Figure 4.2 over the page.

MUSICIANSHIP INSIDE MUSICALITY

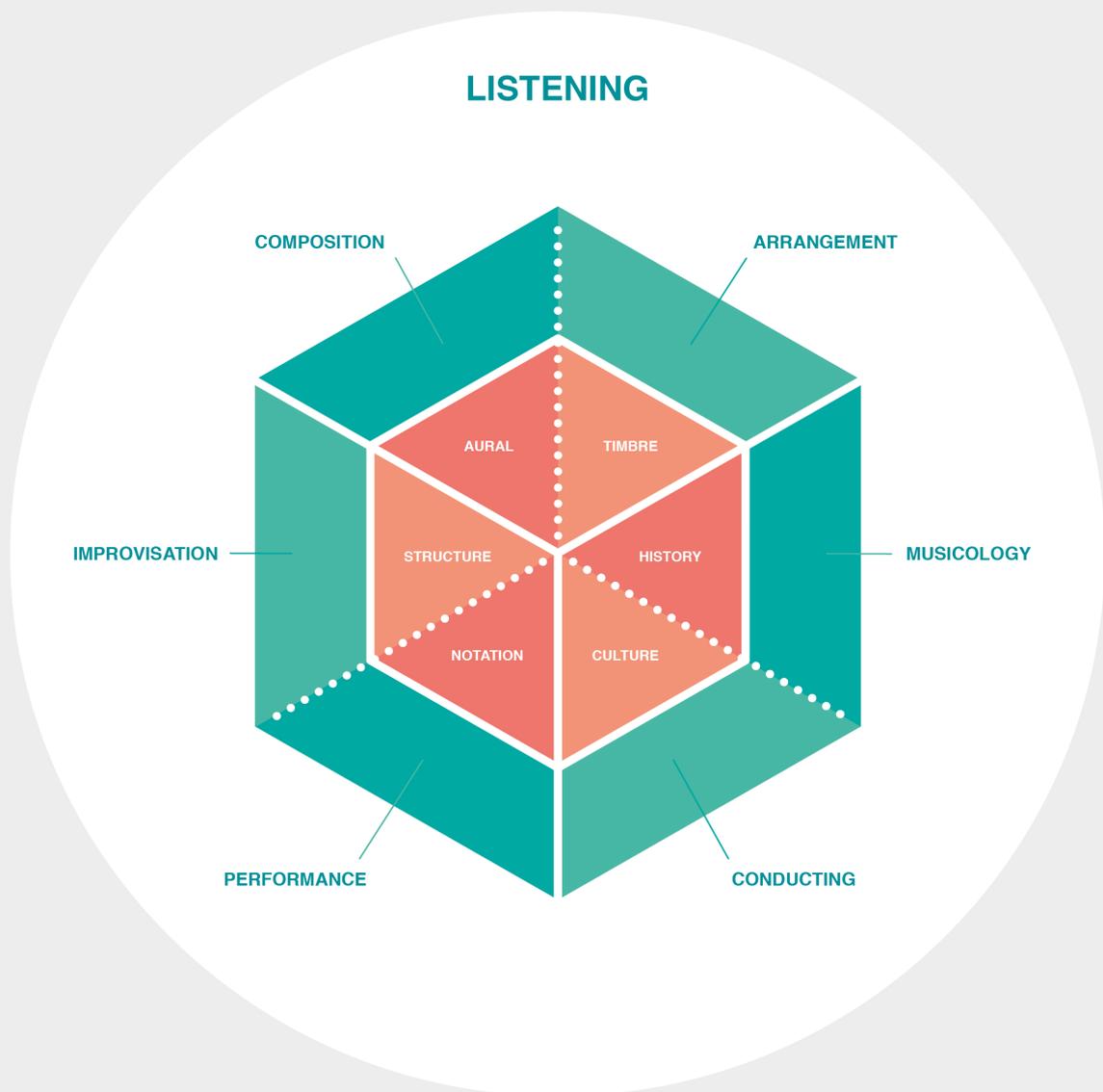


Figure 4.2: Interrelationships of musicianship and musicality skillsets.

It can be argued that information- and practice-based skillsets can be seen as constituent components to musicianship and musicality respectively. From this angle, musicianship is seen as the overarching understanding one holds of music using information-based skillsets.

Musicality is seen as the act of drawing from information-based skillsets in order to facilitate and direct practice-based skillsets. Consequentially, there is a symbiotic relationship between musicianship and musicality, as information-based skillsets can use practice-based skillsets to form, inform and reform understandings of music through practice. Likewise, practice-based skillsets use information-based skillsets in order to direct and facilitate experiential understandings. This symbiotic relationship can be argued to outline the formation of musical thought, as all musical skillsets have been arranged to form, inform and reform musical understandings through structural understandings of the medium.

For instance, demonstrating the manners in which the content learned within the study of western music theory might assist endeavours in performance, composition, improvisation, conducting, arrangement or musicology may assist students and educators to perceive the phenomenon of music from a holistic standpoint. Thus, direct relevance to development of personal musical goals might be addressed as each concept is introduced within its greater context and allowed time to have specific boundaries explored by the individual. This link between musicianship and musicality emerges from individual perception, along with a working appreciation of the rules and conventions and the structures of music theory. It is not my intention to outline all aspects to each subject that is external to music theory. I merely wish to articulate the manners in which I have utilised structures learned through the study of music theory in combination with these external skillsets.

This section has aimed to define the concepts of musicianship and musicality in order to articulate how these concepts lead to the formation of musical thought. Skillsets available to a musician are used in different ways for different means, just as the ways in which music is received and interpreted differ for every individual. The next section of this chapter unpacks and investigates the ways in which musicianship and musicality contribute to reception and interpretation.

Plurality of Perceptions

One thing that can be said about music is that it will be received and interpreted differently by every person who hears it, “people listen according to differences in their life-worlds, interests, values, backgrounds, and present intentions and needs” (Regelski, 2005, p. 17). This statement implies that interpretation is largely guided by particular experience and preference. I would then also like to insist that the concept of musical thought is central to the relations between individual style, rules and conventions. As music theory teaches musical structure, which is the medium of musical thought, it can be argued to be significant to each student’s music education. This implies that there are varying depths, breadths and intensities to musicianship and musicality held by each person who expresses using musical thought.

As expressed in *Musicianship and Musicality*, the link between these two concepts is symbiotic and contributes to the formation of musical thought, which is facilitated through understandings of musical structure. Musical thought can be an experience argued to be significantly different from those who do not study musical structure. It may even be argued that those who do not study music at any level may not understand the concept of musical thought, let alone possess it. However, all people who have had musical experiences (which would tend to be everybody considering the musical saturation of western society) would have culminated some form of musicianship and musicality, yet may not understand how to utilise them, or even know of their existence. Musical thought is the core being of a musician, it is their ‘musical identity’. It is their artistry and the following passage from Paynter and Aston (1970) captures its significance:

Rarely do we look at things as closely or as intensely as artists do. They see the beauty in nature and their intuition and skills define it in terms we can understand... the artist does more than make a record: he projects feelings into his materials - paint, wood, stone, words, movement, sound or whatever - until the materials become like the reality of his imagination. Through his work we feel what he feels; we see with his eyes and hear with his ears. (pp. 3-4)

This “reality of ... imagination”, the sense-making of the medium, where a musician draws upon cumulative knowledge and experiences with music to inform present and future endeavours, is the essence of musical thought. It is the culmination of identity, musical experiences and understandings and the manner by which they are all utilised. Skills such as performance or composition are employed to manifest thoughts that are created through one’s musical

understanding. For instance, using the former skill as an example, one may perform a piece of music in a certain manner: as it is understood through one's musical experiences of that particular style. Using the latter example, one may draw upon composition skills in order to realise sounds generated through musical understandings. As articulated by Swanwick (1999), this makes the formulation of education models doubly challenging; "Awareness of this kind of many-faceted relationship with music prevents us from making assumptions about musical preferences and values on the basis of identifiable cultural groups" (p. 30). The pedagogical problem inherent is that every single person understands music differently. Musical thought, musicianship and musicality are all interdependent products of pedagogy, which are interpreted by an individual and expressed through their musical identity.

Since musical thought and identity are so closely linked, I will now briefly explore the limits between the two. I understand and express aspects of my own identity through music, yet not all students tend to have this mode of thought available to them, hence an alternate comparison should be made. Identity can be more commonly understood and expressed through language and word (Klimstra, et al., 2010; Krettenauer, 2005), so it makes sense to contrast attributes of musical thought and word (the medium of verbal thought). It is not my intention to perform a complete investigation into the phenomenological natures of word and music; I am merely highlighting some symbolic similarities to contextualise the reader.

Within both music- and language-based thought, cognition is initiated through the interplay of familiar or unfamiliar experiences (Swanwick, 1983). Writing through word is a powerful communication tool: it is aimed at defining objective experience (Humphrey, 2013); yet is subjective in terms of its comprehension (Byers, et al., 2012). More detailed explorations abound in works that highlight the semantic and syntactic crossovers inherent to the word and musical notations (Benson, 2003; Swanwick, 1999; Lewin, 1986; Ferrara, 1984). Language also has its limitations when describing music, as Paynter and Ashton (1970) discuss:

Words may be the most obvious way, but they are not always sufficient. Sometimes we say we are 'speechless with indignation': we feel so indignant, there are no words to express what we feel... There are other situations which can leave us wishing for ways to say things where we don't have to rely on words. The words run out and we have to look for another medium. (pp. 24-25)

It is the researcher's belief that where word can be used to define objective experience, music may be used to describe subjective experience: of the relationship between an individual and

their lived environment. As an educator I had previously attempted to use words to articulate the nature of musical structure; it had been an arguably fruitless endeavour, met with glazed eyes of students who could not relate to my wordy analogies. From my experience in teaching music theory it has always been best to let the music 'speak' for itself, to let the students form their own understandings of the newly presented materials and allow for discussion once the unfamiliar aspect had been experienced. There was always a great temptation to guide students through examples using words, or to point out locations of theoretical models within musical examples. This approach was not focused on students to engage with musicianship through aural and theoretical skillsets, nor utilise musicality in practice. I needed to get students beginning to think musically, and at the time I surmised that words need only frame the task to undertake: for instance, what to listen for in the next exercise. Following this, facilitating students to experience and connect with music requires time without thinking in words. In this way, meanings in musical examples can be made through engagement with fore-meanings of music theory reference structures in hermeneutic dialogue. Words were great to discuss and reflect upon experiences students had of a task, but always seemed to 'get in the way' of learning when employed to explain musical concepts that were newly introduced to students. Askew (1993) writes of a similar conundrum, where intuition is offered up as a key source of knowledge-formation that overcomes the problem of words getting in the way,

Intuition is not limited to aesthetics and emotions. It plays a part in all aspects of our lives, including scientific investigation, and although you may be unable to verbalise your experience of its existence is undeniable. If a friend admitted not knowing what a nashi was you might be able to provide such information as its vitamin, sugar and starch content, its colouring, texture, shape, origin, growing requirements and its cost. As well as scientific information you might include similes such as, 'It is sweet like a pear,' and, 'It's like biting a crunchy apple,' yet all this information would not be enough to provide your friend with a real knowledge of the fruit because a nashi is greater than the sum of its parts. Only eating could provide 'nashi-truth'. This is why Beethoven, when asked to describe the meaning of his *Eroica* symphony, threw up his hands, sat down at the piano and played the first few bars. (p. 38)

Here, Beethoven's argument is that music has its own explanatory capacities, in that its experience informs and contextualises an individual in more ways than it can be described using words. In this way, perhaps intuition shares a common aspect with musical thought: that

experiencing a phenomenon has as much to do with the learning process than being able to translate meaning into words, yet it is not enough to merely experience something; one needs to correctly understand what it is they are experiencing. In Askew's (1993) case, one starving outsider may come across a wild nashi and experience 'nashi-truth' whilst eating it, but not know the name of the fruit. As a consequence, they would form their own interpretation of the nashi and understand it to be something completely different. In this way, one would semantically label the nashi from the closest relatable fruits in their experience as they interpret through hermeneutic dialogue. They might call it a 'prapple' and attribute nashi-truth to the newly created title. This example of incorrect semantic labelling can cause communication problems to those who understand the 'proper' name of nashi. This analogy is directly relatable to western music theory's formal sociocultural structures.

There are frameworks of musical concepts which all have labels and names; with experiences of each containing understandings related to particular incident and context – care needs to be taken to ensure labels are not mistaken for other musical concepts. The issue becomes one of facilitating the musical experience (in terms of musical thought) with the structures taught within music theory. Berger (1984) highlights the multiplicity of sensibilities inherent to the apparent 'singular' sense of sight:

Seeing comes before words. The child looks and recognizes before it can speak. But there is also another sense in which seeing comes before words. It is seeing which establishes our place in the surrounding world; we explain that world with words, but words can never undo the fact that we are surrounded by it. Each evening we see the sun set. We know that the earth is turning away from it. Yet the knowledge, the explanation, never quite fits the sight... We never look at one thing; we are always looking at the relation between things and ourselves. Our vision is continually active, continually moving, continually holding things in a circle around itself, constituting what is present to us as we are... The reciprocal nature of vision is more fundamental than that of spoken dialogue. And often dialogue is an attempt to verbalize this - an attempt to explain how, either metaphorically or literally, 'you see things', and an attempt to discover how 'he sees things'. (pp. 7-9)

Hermeneutically, I often attempt to use words to describe sensory experiences similar to which Berger (1984) refers; constantly endeavouring to articulate through a process of interpretation and questioning through words in order to 'see things'. I would like to insist that music attempts

to do the same thing through divergent articulation – through sensibilities and structures rather than through convergent articulation of words. With divergent reference frameworks, sensibility, like musical thought requires one to open things up yet be developed and formed by opening things up. Much as the blind person sees with their hands, their sense of smell and through taste, which are different references to reality than sight. This is the nature of music theory's inherent structures and frameworks which assist to define musical realities: one's musicianship needs to be constantly reformed and refined by one's musicality in order to artistically express one's musical experience. This relates directly back to the contentions at the beginning of the chapter about (i) perception is individual, yet (ii) there are rules and convention, and that (iii) the potentialities of musical communication are dependent upon structures of music theory. It is a particular sort of experience as it relates to (i), (ii) and (iii). As Paynter and Aston (1970) mention, "A lot has been said about the similarities between the visual arts and music. Drawing parallels like this may seem a little forced, especially when we remember that the visual arts are seen in space but music is heard in time" (p. 83). Of course music is not sight, yet there seems to be a commonality between the natures inherent within these phenomena; that experience is required in order to gain understanding

Through the researcher's undergraduate experience, theory was taught to come after a piece of music had been created, whereas the study of composition came before the piece. It is this circuitry between theorising music and making music that hinges on interpretation as a prism. Structures inherent in music theory tried to explain cultural interpretations symbolically (which would be interpreted differently by each student), through analysis methodologies. By the completion of the undergraduate course, I had found analysis to be useful in its own right, yet compartmentalised from other musical understandings - it was not connected with any form of bigger musical picture. In the words of Piston (1941), "if we reflect that theory must follow practice, rarely preceding it except by chance, we must realise that musical theory is not a set of directions for composing music" (p. xix). Time was needed to relate the musical analysis symbology I had learned with my performance practices, aural mechanisms, compositional technique, improvisation understandings and pedagogical standpoint.

Any system of analysis requires learning a symbolic language and syntax, adding a layer of translation between learning and music. This layer demands time to teach and learn the methodology, which can easily become the focus of the lecture series (and subsequent assessment tasks). The teaching and learning of analytic systems run into similar difficulties to what was previously discussed regarding the concepts of music and word: as a medium to

understanding music, one approach seems insufficient to encapsulate the musical phenomenon in its entirety. As people understand music in accordance to their life-worlds (and hence are individually unique), analysis should not and cannot be the core of music theory, or the assessed focal point of a course. Music theory is not analysis. Analysis is a methodology, and there are several modes available. In a sense, the subject matter of music theory is analogous to core frameworks of musical understanding. Music theory education should not be focused solely about the teaching and learning of an analysis methodology; it should provide a means for students to learn to think musically.

In chapters seven and eight, the current study will attempt to provide visual explanations of western music theory's conceptual frameworks. This has been done with the intention of adopting visual means to teach music theory, bypassing words to provide a platform that can facilitate musical thought. In this way, I aim to provide bottom-up and top-down reference models made using related musical structures. It is important to note that structural frameworks of music theory connect at a conceptual level, and in rearticulating Askew (1993) such structures need to be experienced in order to be interpreted by an individual. In this way, music theory can provide for musical understanding, contextualising musicianship and musicality and thus musical thought. Using this approach, one is equipped with musical understandings based on the principles of *Verstehen*, as hermeneutic dialogue engages with cyclic interpretation and questioning of musical structures. Students are able to draw upon the use of practical- or information-based skillsets using musical structure in order to express themselves musically. Through synthesised understandings musical thought emerges; namely, between the principles of musical structures and *Verstehen*. This mode of thinking cannot, by any means, hold any objective commonality with another's relationship with music, nor to their musical thinking – but it can be communicated, shared and exchanged and it can also enrich or divert others' understandings or perceptions. To the researcher, the reference frameworks of musical ideas gained through the study of music theory provides a useful toolbox to understanding compositions heard. The study of specific styles of music can also provide contextual references to its use. Internal analogies may also be drawn from familiarity with the motions of the musical structures being heard or personally explored. Musical thought, whilst individually understood, is socially referenced in that musical structure is a social construct. This means that musical thought can behave at a level beyond that of the individual.

The matter of facilitating and recognising the values of idiosyncratic learning is the penultimate issue underlying learner-centred curriculum and pedagogical approaches. The very same

difficulty applies to the nature of music itself: it becomes plain to see that each music pupil has their own collection of musical influences, beliefs, skills, motivations, preferences and experiences. With this in mind, the issue gains an added layer of complexity insofar as how one might create an education paradigm that encapsulates the particular musical world of the student and the broader educational and philosophical visions of the educator. An analogy can be drawn: the issue is much like playing in an orchestra: individual parts bring unique sounds to the overall picture, as governed by the conductor. Following this analogy implies that this potential education paradigm needs to be composed in a manner akin to musical structure itself.

For this research thesis seeking to understand tertiary pedagogy and how it attempts to foster the education of multiple idiosyncratic experiences and variable sociocultural perceptions in the lecture theatre is what is at stake. The main challenge comes when an educator can (arguably) only develop pedagogy from an individual ontological standpoint – but what then happens when an educator’s ontology is one that encapsulates the nature of dynamic variance? The discussion of musicality offers some beginning insights into the approaches and music education paradigms and the place(s) of music theory.

Multitudes of Meanings

The education of university-level music theory carries with it a unique paradox: the underlying foundation of ‘rules’ must be known, challenged, reconstructed and sometimes even broken in order to be fully understood. For instance, underlying interactions of chordal movements have a set structure to them, but a student needs time to personalise their understanding of each concept in order to relate or find relevance in its study. Within current models of music theory education, formal texts imply that their content is drawn from the repertoire as a series of rules to follow. Once understood, theoretical models are simply tools ranging from architectural designing to extraction of raw materials. Knowing them does not necessarily make one a better musician, for it is the way in which one understands and interacts with the tools and constraints given that is artistically valued - an expression of one's understanding of the phenomenological framework model.

The subject of western music theory defines the phenomenon of music in terms of its inherent structural makeup. At the same time, structural frameworks can be interpreted through the idiosyncratic experiences of the particular and reformed by preferences, which create a

secondary reference framework. For example, as a student I was taught that chords are constructed using combination sets of simultaneous major or minor third intervals of a given scale that are piled on top of each other. I was also taught that notes of the same scale that are outside the selected chordal framework are considered non-chordal tones with varying degrees of dissonance – they do not make up the formal chordal framework and hence recommended not to be used as they would compromise the quality of the sound. Throughout my compositional practice I have constantly interposed non-chordal tones into chordal frameworks – often replacing one with the other. Sometimes the musical atmosphere suggests the ‘imperfection’ is more relevant to the musical statement, or the greater melodic tapestry intensified by the mere alteration of one note. Within these musical situations the thought process is not dogmatic; yet the more experience I gain with challenging formal frameworks the more I understand them in my own manner, taking note of the resultant difference from the ‘proper’ manner and my own experiments. This example ultimately reflects a practical application of reference and preference frameworks acting as fore-structures, which are constantly interpreted and questioned in hermeneutic conversation.

This section aims to explore the advantages inherent with teaching the formal sociocultural ‘rules’ of music theory and then allowing students to adapt them to suit their own musical preferences. In my student experience, the main foci of music theory classes seemed to be based upon analysis, composition and aural identification processes using a western cultural lens. Such an approach does not provide complete means to understanding the phenomenon of music. Askew (1993) writes, “...a teacher who only accepts musical activity during music lessons is likely to be artificially isolating music from its part in the ‘whole’ lives of the pupils concerned. A ‘whole music’ program cannot be locked away in a weekly block on a time-table.” (p. 37). In light of discussions within *Musicianship and Musicality*, all practical and information based skillsets can serve to contextualise understandings of musical thought and structure from different perspectives. In this way, musical structures can be approached from many angles, which helps address the issue regarding multiplicities of musical interpretations.

Eventually one will come to see parallels with musical thought and real-life experiences; common patterns will emerge as one begins to look at things from a musical perspective. This happens through exploration of the boundaries of each rule: one can begin to see the inherent nature of the phenomenon under inquiry. For example, to demonstrate one of the ways I understand harmonisation I will use an analogy of planning a surprise party for a friend. I look at a guest list to determine whom I should invite to the gathering. After a few moments I realised

that the task was not as easy as I had first come to suspect, as certain people were not compatible with others unless another was present and so forth. I instantly drew a parallel to notes and chords within scalar contexts. Within the celebratory atmosphere (a given scale), certain members (notes) worked well with others (formal chordal frameworks), but not others (non-chordal tones), yet with the inclusion of certain people in specific contexts (bass line formations), the personalities could be balanced, and everyone can get along. This somewhat abstract analogy demonstrates the nature of musical thinking: problem-solving with dynamic variables. Within this analogy, the more I know people the better idea I have regarding interactions that could happen within larger contexts: the same principle applies for coming to understand musical structures. Therefore, the educational context of the school or the university needs to better recognise, connect with and challenge or reinforce musical thought derived from individual experiences from outside the institution.

When setting a task for students to challenge a rule that has just been taught, it is ultimately asking them to identify an ‘antonym’ to the concept. In essence, the educator is simply inviting a student to engage in hermeneutic dialogue, interpreting and questioning musical structures in the light of experiential preferences. This is done to encourage a student to own the concept – to understand it in terms of preferential musical experiences. The terminology used (‘make your own version’ or, ‘break this rule’) can encourage the degree of reformation to the extreme of open-ended creativity. This task can also make the learner create a musical scenario (through whichever musical means they wish), adopting a concept to solve a musical problem, hence experiencing the frame in an intimate manner. Discussions in chapter nine explore this concept.

Musical thought can be facilitated with hermeneutic conversation, through understanding musical structure. Each student must be allowed to explore concepts that are introduced from the model and reform it in their own way. The student will need to explore conceptual boundaries that surround western music theory conventions in order to achieve this. When one is able to articulate how and why they reformed a ‘rule’, they have demonstrated two things: understanding of how the model behaves, and their own take on its nature. The former understanding contributes to defining a sociocultural musical reference, the latter providing a counterpoint of individual personal preference. Combined, these two perspectives can triangulate with any new musical framework heard. This active process is the researcher’s experience: the dual models attempt to predict musical structures via the interplay of one’s musicianship with heard musical realities. These musical realities contain models that are elucidated in Gauldin (2004), “each model sets up a harmonic and melodic implication or expectation, which is

followed by its realization or resolution” (p. 649). The models also infer linkages with surrounding concepts to demonstrate a greater framework – allowing one to relate their own musical understandings within the larger context of their musical thought. As these linkages then reform previous expectations and thus inform of diverging approaches to familiar frameworks, relationships are symbiotic and an example of communication through such representations of musical structure.

The more I understand music, the more I understand myself. When studying music, I am constantly taught by it, shown new potentials of expression, new perspectives to consider, it also forces me to look inward. For example, I may be inclined to change musical attitudes if hearing a piece (that may have otherwise been overlooked due to personal biases) within a different environmental setting. It teaches me open-mindedness: as acceptance of differing views allows the expansion of my own musical palettes, understandings and practices; hence increasing my musicianship. Understanding music also teaches me of the importance of teamwork: orchestral performances depend upon cooperation to be successful. Engaging with music also teaches me communication via nonverbal means: communication through musical implications or movement is paramount to performance. Finally, understanding music also helps to create new pluralities and expand palates through exposure: I respect (and often enjoy playing) musical structures of other cultures. Learning anything modifies behaviour.

Musicians are able to communicate on multiple levels at once. With greater familiarity of musical structures come greater understandings of how one can express or communicate. Engaging with musical thought enables me to explore, understand, document and/or express my entire being from my perspective of how I experience my life as situated within sociocultural environments. Musical thought is relative to the individual and juxtaposed with sociocultural understandings in order to develop and build both reference and preference structures. If I, as a composer, cannot form an opinion on the where, what, how and whys of the musical realities I hear, I would not be able to form an understanding of my material. I might constantly make the same mistakes so to speak, or lose motivation as a composer when everything I produced ‘sounded the same’. I have a framework of musical understanding I keep inside my mind. I use it to reference aspects of the music I hear. For instance without this, I would not be able to grow as a musician by 'adding more strings to my bow' whenever I can identify a previously foreign musical structure.

Understanding music teaches me how to be disciplined because in order to train, develop and finesse instrumental fine-motor memory, consistent and dedicated practice is required. As a reference, Sennett (2008) focuses on practice, technique and craft and argues that, “ten thousand hours is a common touchstone for how long it takes to become an expert” (p. 172), however this reference must be acknowledged as contentious. Constant attention to detail is facilitated through the concentration needed to hone in on fingers or posture whilst playing and familiarising with a new instrument. Practice regimes force one to think about the progression of one’s own skills, outlook and aspirations. In musical contexts, many people relate to the word ‘practice’ in the instrumental sense, yet this applies for all skillsets. This means that the discipline required to understand music is often overlooked or taken for granted. Music curriculum can provide a space for developing the possibilities of consolidated practice and thus develop individualised musical thought. Curriculum development provides a structured and intentional way of understanding materials to be progressed and methods of expression and interpretation to be explored and experimented. This systemic thought process has allowed me to view my musical progression in long-, mid- and short-term aspects. Coincidentally, this mode of thought has also assisted with non-musical thinking such as project planning and general management, and as such may be beneficial to include in assessment strategies.

Musical Communication

Musical thought can help facilitate one’s own artistic definitions as a reference of what has already been done, what resources are available and discovery of new combinatorial interactions that suit personal preferences of expression. Aesthetically, musical experience can be defined as a transformational awareness; enabling one to receive information, communicate, analyse and interpret music utilising various control systems learned, using the entire body - a connection is made with the medium. The final section of this chapter takes a snapshot of the researcher’s musical experience, of musical thought in the nature of Swanwick’s (1999) elucidation:

Any attempt to explore the functions of music cannot arise from semiotics or cultural studies but must be grounded in the particularity of musical experience itself, in musical ‘events’ of one kind or another... the interface between minds and music is the central focus of musical engagement and therefore music education (p. 30).

In order to clarify my thoughts on musical communication, I will briefly recap the main concepts of each section within this chapter so far. Firstly, musical thought uses musical structure as its vehicle for understanding. An individual interprets musical structures according to principles of *Verstehen* (through hermeneutic dialogue). Music theory defines musical structure as it articulates paths of musical interaction, where a concept of music theory defines an aspect of musical structure. As elucidated within *Musicianship and Musicality*, structural concepts can be used by any musical skillset to facilitate teaching and learning. Musical skillsets contribute to the formation of musicianship and/or musicality, which form the overarching concept of musical thought. As discussed in *Plurality of Perceptions*, I use two contextualised frameworks simultaneously (made from conceptual structures): one of formal reference (sociocultural and historically based) and one of personal preference (based on my reformed interpretations). These frameworks are understood intuitively, and can be recalled through cognition if provoked or deemed necessary to do so (perhaps to teach, or to solve a musical problem). Combined, the dual-frames allow me to see cohesion and difference in greater musical schemata. These schemata link directly to my musical thought, allowing a synthesised perspective where any new music heard can be triangulated in order to reform new musical meanings. In this way, musical thought is relative to the individual and juxtaposed with sociocultural understandings in order to develop and build both reference and preference structures. Hence, musical thought can be argued to be both an individual and social construct, meaning that it forms, informs and reforms an individual's life world, which can be seen as a formation of identity situated between the self and music. I view musical communication as the social dialogue of musical thought.

Aural identification mechanisms combined with theoretical understandings provide a strong analytical mindset that can be used to think musically. This analytical mindset is also a strong tool for forging structural frameworks of self-understanding within these sets. For example, one might consider idiosyncratic musical interpretations - the structural 'rules' that have been reformed as expressions of musical affinities and beliefs held by a given artist. According to Friberg and Battel (2002) with regard to performance, "The key is how the musical structure is communicated. Therefore, a good understanding of structure – theoretical or intuitive – is a prerequisite for a convincing musical performance." (p. 199). When one supposes that these very expressions are the key 'points' to the piece, a means of communication and exchange of tool sets or arrangements may be potentially realised.

In thinking about music in this manner, one can navigate musical frameworks using a top-down approach. The use of this technique also requires the use of a bottom-up structural perception of these frames: the phenomenon of music as it is experienced from the 'insider' perspective, the individual perception of sociocultural frames. For further detail, see chapter seven of this thesis, which provides bottom-up visual concept linkages. Such a visual, bottom-up, structural model can be utilised within lecture theatres as a unifying artwork of exploration from a top-down perspective of delivery. This could be used to cross-reference the individual progression of students who would create their own meaning of the models taught; in the words of Paynter and Aston (1970), “we must learn how to discover what the materials can do” (p. 7). In learning how to discover what musical materials can do, the provision of top-down and bottom-up perspectives serve to facilitate educational delivery.

Musical thinking can be communicated as a demonstration of theoretical models understood by a musician within a given piece. A musician can demonstrate how larger musical ideas overlap and interplay with each other through interrelated structural frameworks. It is possible for one to understand what is heard within a given piece of music in terms of:

- Its adhesion to or diversion from sociocultural musical frameworks or historically traditional models
- Manners by which pathways of musical discourse have been challenged, or where frameworks have been broken, challenged or reinvented
- Overall approach and selection of theoretical structures to create musical realities
- The arrangement of temporal and rhythmic elements of a given piece
- Conceptual layering or imaginative spatial awareness
- Selection of timbral palette and consideration of tonal qualities

The experience is received through the establishment of an empathic relationship with the music heard. Musical thought contextualises what is heard in terms of structure, which informs formal references and personalised preferences of the listener. If one listens with empathy, verbal cognition does not attempt to dominate the process, leaving musical thought to develop in terms of musical sensibilities, understandings and experiences. Listening with empathy requires:

- A contextualised understanding of the artist's intent to expression
- Appreciation of music as one continuous flow from beginning to end, yet with a pulse
- Appreciation of musical structure in terms of sociocultural and historical frameworks
- Appreciation of divergent preferences of structural frameworks as individual expression

- Sharp aural mechanisms in order to identify aspects pertaining to musical thought
- Appreciation of aspects pertaining to musicality and practice-based challenges

In this model, both one's prior musical experience (their musicality) and structural understandings are used as familiar reference models where aural mechanisms can facilitate and reference new data. Or at least, this is the general information I receive whilst listening with empathy and analytic intent. It is a process of using structural frameworks as reference models: the more familiar I am with interactive structures, the more information I am able to receive. For instance, if I play a piece of music from the western traditional paradigm, musical features identified can be referenced against my musical understanding through hermeneutic engagement with musical thought. If I had previously performed a similar style of music, more information could be referenced. If I had previously performed the particular piece of music, even more information is available. Contrastingly, if one were to then hear a piece of heavy metal music (a style in which I have not previously performed), my lack of performance understanding denies particular analytical processes to take place. I would still be able to identify and analyse core musical frameworks, but the majority of the listening process would be aimed at redefining my structural understanding of the musical style (kind of like reading a book about it, or rather, adding to the experience). Whenever I encounter an unfamiliar musical structure, it is referenced against the next most familiar musical structures: 'which structures gravitate or attract?' It is by these means I am able to 'capture' musical frameworks heard via analytical intent, consequentially forging schematic connections that combine old and new structures given in each realisation.

This chapter has explored themes that have emerged from personal experiences as a musician and music theory educator. Anchoring musicality to three overarching conditions has done this: conditions of individual interpretation, rules and conventions of musical structure and musical communication. It is anticipated that the insights and conceptual reasoning foregrounded through this chapter add to pedagogical resources that may be devised to sympathetically hone musicality in a plurality of way. The next chapters in this dissertation will explore student perceptions toward the phenomenon of music theory, music education paradigms and western music's pitch structure.

5. Student Perceptions of the Western Music Theory Phenomenon

This chapter builds on the ideas developed in the preceding chapter on the phenomenology of musical thought. By providing a snapshot of understandings and expectations regarding student university music experiences in Victoria, Australia, this chapter draws from a survey to open up, challenge and develop the concept of musical thought. In this way, the current chapter reports on a survey of undergraduate music students. The survey is an exploration of the perceptions held toward music theory by students with several questions as a basis – what aspects do students see as the most important within the field; how do students define their perceptions; and how might educators design pedagogy with such information in mind?

All students that undertook the survey stated that western music theory was important to their overall development as a musician, and diverging reasons were given to how or why this was so. Upon initial speculations, many students seemed to miss the idea that theory informs understandings that underpin musical practice. If this is the case, students have the tendency to compartmentalise understandings of music theory as separate to their practical music education; rather than acknowledging its bridging properties. This issue may be inherent to student engagement, teaching approach, or aspects of either domain. Therefore, it is beneficial to explore student perceptions and teaching approaches involving the phenomenon of music theory. As these two domains are not entirely separable, this chapter will focus explorations from the student perspective, with investigations inclusive of teaching matters perceived to relate to student experiences. The educator perspective will be explored and discussed in the next chapter. In order to identify teaching matters related to student experience, some contextualisation is needed.

Formally integrating music theory into the conservatory model of undergraduate education ('academization' as Wason (2002) puts it), may have distorted its teaching and learning. As Wason (2002) recalls, "The intimate connection between theory pedagogy and musician composition began to weaken ... and despite a few exceptions, in the twentieth century this connection was largely severed... the academization of music theory may be seen to have come

at a cost” (p. 73). From this view, the academization of music theory appears to have decontextualized its underlying connections with other musical fields of inquiry. Possibly due to a lack of educational research into appropriately updated pedagogical techniques within music theory, “there has been a serious loss with the dedicated study of theory: the connection with musical composition as a living, evolving entity seems to have been cut, once and for all” (Wason, 2002, p. 73). Such a disconnection with the study of music theory hampers the development of new pedagogical approaches to its teaching and learning from emerging. Alongside this disconnection, the consequences that arise from static and unchanging music course structures has been outlined by Regelski (2005), “[The benefits of music] are not noted or valued by the public at all! [This] has led to a widespread marginalisation of music in school schedules, budgets, etc.” (p. 9). As such, static course structures marginalise music theory, as approaches to teaching and learning in this way do not cater to dynamic properties of music.

In such an arrangement where no public validation exists, the reality of financial support within the university context becomes an issue. An emerging marginalisation can be represented as such: static educational delivery within a dynamic context can lead to poor student reception, which leads to negative feedback regarding a course, thus cuts in both budget and timing toward the subject occur. This would set off a chain reaction, as budget cuts usually indicate the university would not be able to afford the highest quality educator, and may be tempted to hire people who demonstrate high musical content understanding yet have a compromised educational experience; or vice versa. This chain reaction would then compound into a downward spiral, as compromised content knowledge leads to undeveloped higher-order modelling and exploration. Such a scenario would compromise music course frameworks as lowered content understanding with high educational experience can lead to a restricted understanding of what music theory can teach. On the other hand, an educator who holds high content understanding with compromised educational experience can lead to undeveloped student potential and disconnection in a room full of grossly differing personal objectives and perspectives. The non-educator may not have heard of pedagogy, nor understand appropriate educational philosophies in order to approach such diversity of perceptions. Music theory does not confide to one particular point of view, it is received and interpreted differently by all. Cook (2002) comments on this feature, “epistemological slippage becomes not so much a defect in music theory as one of its defining characteristics” (p. 102). A dynamic, learner-centred approach is required in order to accommodate for Wason’s (2002) ‘academization’ of music theory.

Through my personal experiences, the university approach to teaching and learning music theory in Victoria, Australia is largely teacher-centred rather than learner-centred. To recapitulate, within the teaching and learning of music theory, factors inhibit innovation and the subsequent marginalisation of music courses among other arts and fine arts oriented programs. Static educational approaches can affect the attitudes of students toward music theory before classes have even begun. Within music theory, this can be risky, as students are forced to see things from a solitary perspective or point of view. This is a conventional approach yet it undercuts the possibilities for engagement within music theory though the development of musical thought. The subject of music theory contains concepts that are open to interpretation and a dynamic teaching environment is required in order to cater to this.

Learner-centred approaches (McCombs, 1997; Paris & Gespass, 2001; Smart, et al., 2012; Kelly-McHale, 2013) put the main points of focus upon the learner as an individual, where the more known about each student, the better the overall quality of a given pedagogy and general ‘success’ of an educator. Given the unique nature of music theory and idiosyncratic relationships held toward its learning; teacher-centred approaches do not focus on the development of the musician as central to its teaching and learning. Despite this, music theory in particular continues to be taught using archaic, teacher-centred paradigms. The current study aims to develop suggestions toward learner-centred pedagogical approach. As Harrison, Asmus & Serpe (1994) state, “Knowledge of students' abilities and music experience could ... assist instructors in selecting course materials and in determining the amount of class time devoted to particular activities” (p.142). Resonating with the nature of musical thought, the more an educator can understand their cohort, the more specialised the educator can tailor delivery of musical structure.

Familiarisation with the Cohort

In order to develop approaches to learner-centred pedagogy, there needs to be an understanding of the students being exposed to it teaching and learning. A survey was issued to a student cohort in order to address this. Looking at an overall snapshot and focusing on age and gender

distributions, 97% of students were aged nineteen to thirty (54% were aged nineteen); of the entire cohort, 42% were female and 58% were male. There were 190 family members of the cohort who play at least one instrument, and thirty of these self-identify as composers.

The collected data show that the majority of students see music theory as contributing to their understanding of music, yet do not classify this understanding in the same way as musical thought is defined within the previous chapter. Many students see a connection between music theory and other domains of musical inquiry; yet find it difficult to express how each link reciprocates. For instance, some students feel there is a connection with composition and music theory, yet there is no mention of how this link is established. In such student understandings, music theory may be segmented from overall musical development. If a particular student has defined music theory in such a manner; then it can be difficult to see its importance or relevance to other musical interests. The previous chapter outlines how the development of musical thought can be facilitated by musical structures taught within music theory. Hence the core of a learner-centred approach should contain the objective of facilitating individual musical thought. In order to facilitate individual musical thought, the individual preferences and influences of students and time to reform interpretations should be taken into account. Pedagogy can be built around the perceptions and influences of students as they have been identified. It is with this idea in mind that surveying students can inform the development of learner-centred pedagogy. The more data gained from such a survey, the more it can inform pedagogical design.

At the university of the surveyed cohort, units of music study were divided into two distinct streams: the ‘classical stream’ that traverses traditional western art music through to modernistic musical inquiry; and the ‘jazz stream’ that blend traditional jazz and contemporary musical approaches. The cohort surveyed consisted of students enrolled in undergraduate music theory, which featured as a compulsory component to both music streams. This survey was taken at the beginning of their first music theory lecture, before any opening statements were made, under the impression of administrative setup. The thinking behind this approach was to capture the insights of transitioning students. If this survey were to be given at any other time, there is risk of two fundamental hermeneutic environmental influences marring the data: the philosophical dialogue between lecturer and student; and the cultural identity reformation within each student as a result of the streamlining of courses. At the beginning of semester, students’ prior comprehension is relearned – this is so a lecturer may establish a common wavelength and perception of foundational concepts with which to build over the coming semesters. Potentially

impressible statements forged from interpretations of philosophical beliefs can prove to be heavy influences within one's educational foundation (Kelly-McHale, 2013). Ultimately, a teacher-centred approach would conform students to the single philosophies, perspectives and viewpoints of the educator. This influence does not allow students to form their own musical thought as built from prior understandings, perceptions and influences that would be undertaken using a learner-centred approach. The researcher wanted to survey the cohort before this clustering of individual perceptions occurred.

The second influence to beginning students' musical thought is the social discourse and identity-reforming groupings that naturally emerge as a result of the learning environment. Separating into two main streams makes assessment and administration far easier to manage, but it does not come without cost. It is teacher-focused: this segregation of units tends to band members based on underlying musical philosophy, yet it is not based on an approach of developing musical thought. In such an environment, students are observed to mostly befriend only like-minded students; or seclude themselves from people who do not understand their preferred music as well as they might, which is not particularly helpful to music at a greater philosophical level. Philosophically speaking, music contains the social experiences of banding: bringing diverse backgrounds, perceptions, people, societies and cultures closer to understanding each other (Hargreaves & North, 1997; Crozier, 1997; Russell, 1997). With increased research toward unifications – globalisation and the sort – it may be worthwhile for university music pedagogy to align music education paradigms to be more culturally accepting and less segregated (Ladson-Billings, 1995). To fully cover this issue would require another study in itself, yet there is one point I would like to make at this juncture: if a university prerogative is to 'improve the human condition', subconsciously encouraging the perpetuation of artistic mediators to a segregated cultural viewpoint will not help to achieve this aim. The researcher wished to survey the student cohort before any new identities – unified or otherwise – had been formed due to this environment. Considering the age grouping of the majority of the cohort, influences may (more often than not) be subconscious, yet they are still of real value. Of course, it is not considered possible to survey a totally 'pure' transitioning mindset without university influence. Students had been given course outlines and may have had introductory discussions from other classes that were attended before music theory.

The surveyed cohort comprised of first year students beginning to undertake a music theory course at their university. One hundred and five students completed the survey, fifty-seven

students were under twenty years' old (forty-seven of these being the age of nineteen); forty-five between the ages twenty to twenty-nine inclusive and three students were above these age brackets. Forty-four of the participants were female, and sixty-one were male; giving a proportionate gender distribution of 42:58 respectively: males outnumber females, but it is not an overwhelming majority. Questions within this survey were open-ended and allowed for multiple responses and ideas from members of the cohort, this means that responses to questions often total larger than 105. This open-ended framework was designed as a means to map direct associations held by members of the student cohort for enlightenment toward pedagogical context, not to necessarily devise any sort of formal hierarchy. As a consequence, there is no issue regarding balance of power or representation of individual voices if some students gave multiple responses where others gave one or no responses, all answers were regarded to hold equal weighting.

Within the survey, students were asked questions regarding general musical exposure and activity outside the formal university context. Survey questions aimed to inform of familiar musical influences such as, 'What styles of music interested you during your time at school?' Other influencing factors such as family also played a part in understanding the student cohort, 'Do you have any family members who play a musical instrument?' aimed to catch a glimpse into potential musical influences at a personal level. These questions are significant to the construction of learner-centered teaching approaches, as familiar aspects and influences can be played to advantage. Familiar concepts can be used as points of departure toward the new, and influences can be utilised to stir motivation within the learner, working from the known to the unknown. In particular, musical influences inform an educator toward both familiar and influential artists which could be effectively used as examples in which students can get to know and understand devices of musical structure. The materials might then seem more familiar to the student, and if an example uses a piece of music which was influential to some students through their lives, then both influential and familiar factors would contribute to student engagement. These factors of influence directly contribute to the interpretation themes raised within the previous chapter; that (i) perception is individual, yet (ii) there are rules and convention, and that (iii) the potentialities of musical communication are dependent upon structures of music theory.

Musical familiarity and influences are individual, yet particular styles adhere to rules and convention (which can be explored by the learner), and that the potentialities of musical communication are dependent upon the student's understanding of structures inherent to a

familiar or influential work in order to determine divergent structures contained within the unfamiliar. Idiosyncratic musical thought is then expressed as communication of musical understandings through preferred skillsets using musicality, received through skillsets in terms of idiosyncratic musical thought to inform musicianship. Musical understandings inform musical experiences and musical experiences inform musical understandings. Figure 5.1 shows the distribution of influential musical styles of the surveyed cohort.

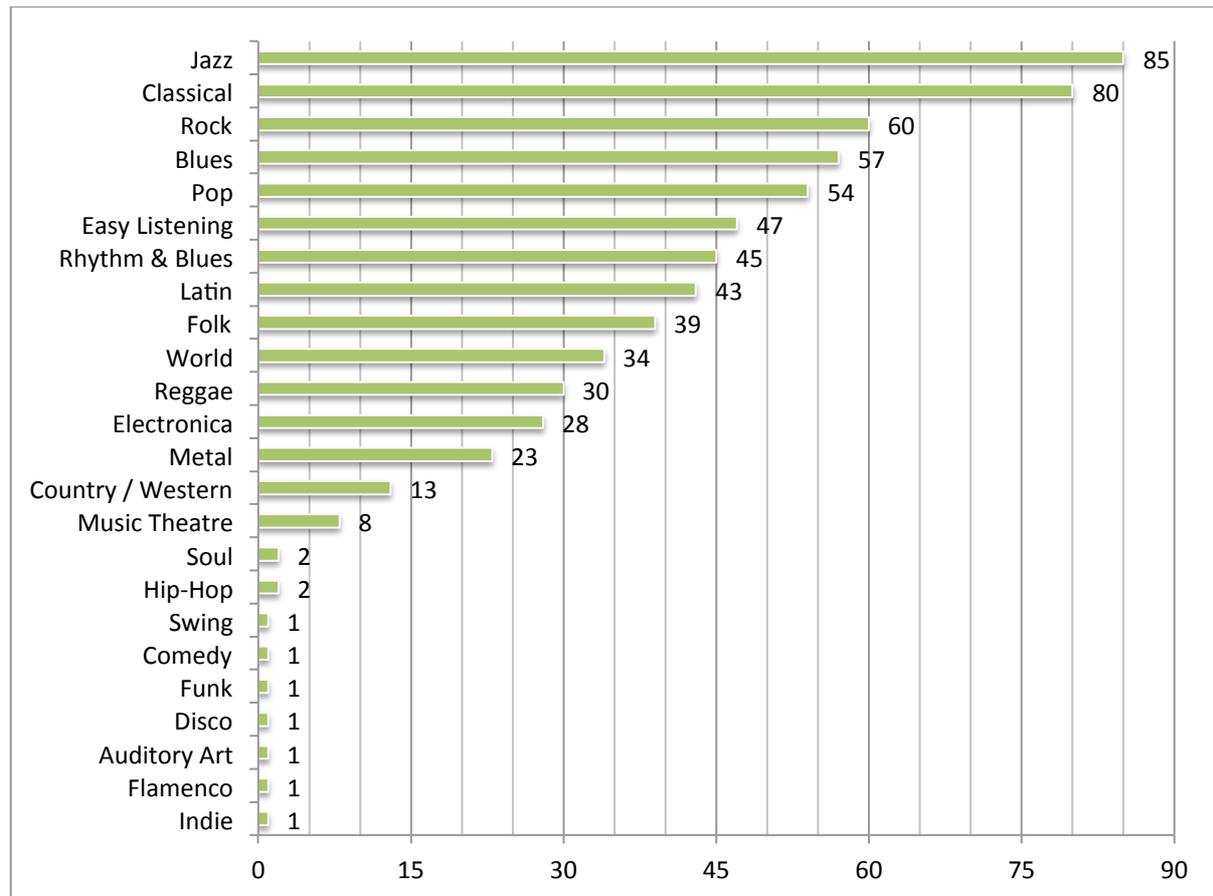


Chart 5.1: Student musical influences during secondary school.

More respondents claimed to be influenced by jazz than classical, although not by much. There are a total of 657 responses to this question, as not one person responded to only having one musical influence throughout their schooling years. The bar graph in Figure 5.1 shows the fourteen categories that were provided on question thirty of the survey (from jazz to country / western), the remaining genres have emerged from participant responses that ticked ‘other’ and provided their own. In terms of relevance to pedagogy, this information can be used to determine which musical examples may hold particular relevance to demographics within the student body. This graph tells the researcher that the selection of a hip-hop track may hold little familiarity to this particular cohort, yet may provide a good contrast if concept bridging is necessary.

For the educator, structural familiarity of musical resources and understanding influential musical styles (or even styles in which the majority of the cohort are willing to be receptive toward), are important to understand; as the closer a teacher gets to student familiarity, the more personalised the course can feel. Figure 5.1 implies that many students listen to a broader range of music rather than a narrow specialisation. Considering the vast distribution of musical influences, demonstration and application of a broad range of musical styles can be of advantage. Many of these styles overlap structurally as well as philosophically, and adherence to one style would ultimately restrict students from utilising others within their studies, even if they had been influential in the past.

The home culture and environment can potentially foster student development of musical identity. People can view themselves in relation to the social and cultural roles existing within music or the ways in which music may form a part of other aspects of the individual's self-image (Hargeaves and Marshall, 2003). Musical families can be argued to have experienced life as a musician and could be more likely to appreciate student endeavours. Family members who are composers may or may not use music theory yet could still be an influence to students, or a potential resource to an educator as a guest lecturer. Conversations may be engaged with student and family regarding materials and content discussed at university at a musical level, aiding in reflection and comprehension speed: the more ideas are deliberated with others', the clearer concepts may become to the student. The potential of family influences are an important factor in hermeneutically interpreting a subject's understanding of music; as family members' who pass their experiences and understandings to their kin (i.e. a student in the cohort) may produce a different outlook to the subject than someone who does not have this family background. Table 5.1 shows the distribution of family members of the surveyed cohort and they instrument they play.

	Mother	Father	Sister	Brother	Grandparent	Uncle	Cousin		Total
Banjo	0	0	0	0	1	0	0		1
Viola	1	0	0	0	0	0	0		1
Ocarina	0	0	0	0	1	0	0		1
Recorder	0	1	1	0	0	0	0		2
Oboe	0	1	1	0	0	0	0		2
French Horn	0	1	0	1	0	0	0		2
Double Bass	1	0	0	1	0	0	0		2
Didgeridoo	0	1	0	0	1	0	0		2
Trombone	0	2	0	1	0	0	0		3
Euphonium / Tuba	0	4	0	0	0	0	0		4
Cello	3	0	1	1	0	0	0		5
Bass Guitar	0	2	2	2	0	0	0		6
Clarinet	1	2	2	2	0	0	0		7
Flute	1	2	3	1	0	0	0		7
Trumpet / Cornet	0	4	1	4	0	0	0		9
Drums	0	3	2	4	0	0	0		9
Violin	1	1	5	1	1	0	0		9
Saxophone	1	3	2	4	0	0	0		10
Vox	2	2	11	4	1	1	1		22
Guitar	3	10	2	21	0	0	0		36
Piano / Organ	14	9	15	11	0	1	0		50
Total	28	48	48	58	5	2	1		190

Table 5.1: Family members of research pool who play a musical instrument.

All categories shown in Table 5.1 emerged from the participants' responses to question six of the survey given. There were no instrumental categories suggested within this question to prompt responses. Of the 105 participants, fifty-nine of them come from a family where at least one person played a musical instrument, as opposed to forty-six who were the only musical members of their family. Translating this data towards learner-centred pedagogical development, an educator can know that as students develop individualised musical thought, they can discuss what has been learned with family members.

It is also of interest to note that contained in the survey data, fifteen of the 105 students indicated that they have family members who identified as composers. Of particular interest, there were no composing mothers, even though twenty-eight could play instruments. Brothers who played guitar come as no surprise as the mode. This opinion has been formed with consideration to the ease and accessibility of tabulation notation for music performance and media distribution of social repute toward such guitar players in contemporary musical culture makes this musical path a popular choice. Unfortunately, one major problem occurring within contemporary

Australian musical culture is a stagnation of fresh ideas due to the very systems that spread its popularity. Table 5.2 shows this distribution.

	Mother	Father	Sister	Brother	Uncle		Total
Blues	0	1	0	0	0		1
Latin	0	0	0	1	0		1
World	0	1	0	0	0		1
20th Century	0	1	0	0	0		1
Indie	0	0	1	0	0		1
Soul	0	0	0	0	1		1
Funk	0	0	0	0	1		1
Flamenco	0	1	0	0	0		1
Worship	0	0	1	0	0		1
Minimalism	0	1	0	0	0		1
Classical	0	1	0	1	0		2
Contemporary	0	0	1	1	0		2
Pop	0	0	1	2	0		3
Jazz	0	3	0	1	0		4
Folk	0	1	1	2	0		4
Rock	0	2	1	2	0		5
Total	0	12	6	10	2		30

Table 5.2: Family members of research pool who compose their own music.

There are sixteen different styles in which students’ family members compose. There were thirty total responses, giving an average of two styles per composing family member. All categories were generated from responses given by the cohort as per question eight on the survey. The most popular styles in which these family member compose are: Rock (five); Folk and Jazz (four each); Pop (three); Contemporary and Classical (two apiece). Fathers and brothers were the main family members who have composed – twelve and ten respectively; then sisters (six); and finally, one uncle who compose in both funk and soul.

‘Contemporary’ is a rather vague classification in terms of musical structures. I feel the term ‘contemporary’ music is given to any style of western music that could be classified into mainstream culture or industry-based music and media output. Often when a musician labels their own style as ‘contemporary’, it is an over-arching term used to describe the use of common musical devices associated with mainstream discourses; but arranged to suit the idiosyncratic taste of the musician. Yet, what factors ultimately determine that a piece of music is specifically contemporary? Drawing parallels with the classification of blues which contains established structural formations such as ‘12- or 16-bar blues’ which determine its style; some

‘contemporary’ music utilise 12-bar blues structures, as well as music from soul, indie or funk classifications. If inherent musical structures are not the signifiers of this musical classification, then perhaps ‘contemporary’ styles of music refer more to production techniques or the utilisation of technologies within, rather than structural formation of musical ideas. This terminology may be the essence of topical discussion within a lecture setting. It would be interesting to determine whether theoretical structures are utilised anywhere along the composition process of these family members. Family members who compose may be attributed with having knowledge in musical theory; yet this may not be so, as such composition is not completely dependent on the use of music theory – however, this potential influence should not be overlooked.

Distribution of Student Responses

The data discussed in this section represents student responses to the question, “In your own words, do you think learning music theory is important? Why or why not?” Each response given was categorised according to subject focus; subsequent justifications toward learning music theory were then subcategorised. The resultant information yields a collection of pie-charts which map the perceptions the respondents held toward the subject of music theory. Each respondent’s replies indicate a preference and an interpretation toward music theory, which are critical components to one’s understanding of music theory and musical thought. The overall allocation of responses is shown in Chart 5.1; and each appropriate section of this pie will be subdivided into the categories that constitute the overall distribution. These categories emerged from student responses to the questionnaire. With such an open-ended question style to the survey, multiple answers were given by each participant – this is why there are many more responses than total number of surveyed students within the cohort.

There were 116 responses (fifty-two percent) that stated the multitude of ways in which the subject develops an understanding of material but did not mention this understanding to involve musicianship. Eighty-two responses (thirty-six percent) felt music theory helped contribute to the development of the skills required to be a musician; fifteen replies (seven percent) related theory to musicianship factors as defined in a similar manner to chapter five of this thesis. Of the remaining responses, ‘Semantics’ holds a few sub-distributions within its category: six

accounts (three percent) reflected of the nature of theory to contain some aspect to semantic language and communication. Minor relationships such as theory reflecting personal attitude, social interaction, and specific musical attributes are also present. The groupings of ‘Attitude’, ‘Social’ and ‘Attributes’ hold only one type of response and could be classified together under ‘Idiosyncrasies’ or ‘Miscellaneous’. From the responses from beginning university students, every student regarded music theory as important to their musical development. The reasoning as to why music theory was important to each student varied as shown in Chart 5.1:

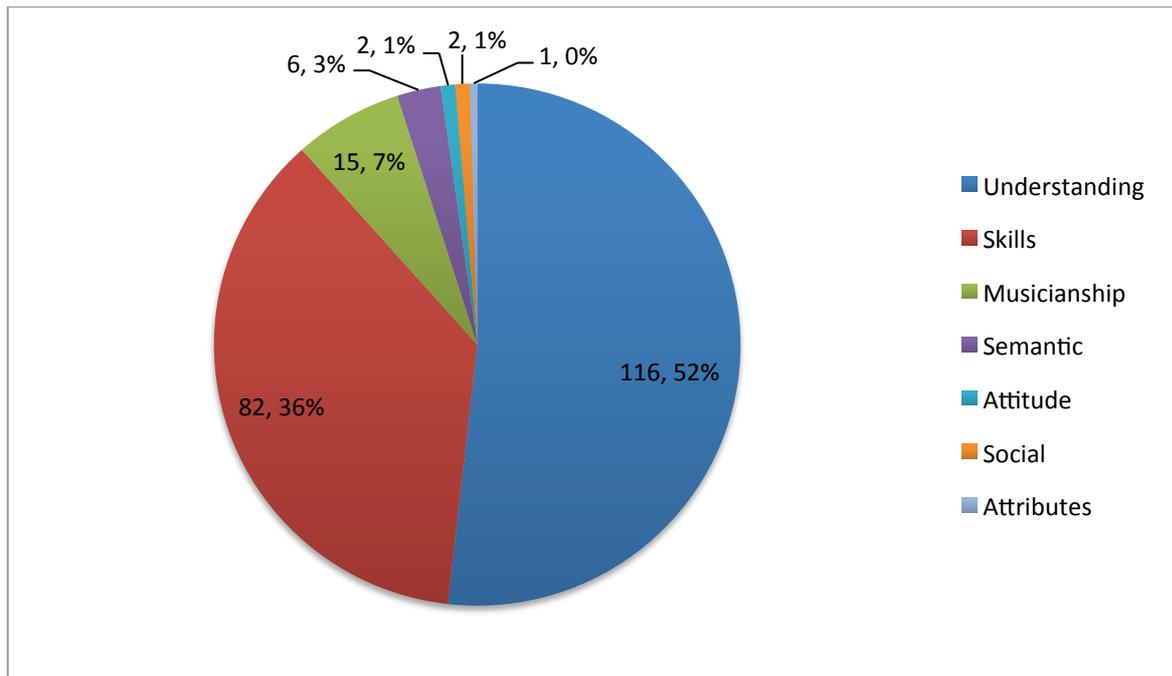


Chart 5.2.0: Distribution of students’ cognitive associations to the overall importance of music theory.

From an overarching standpoint, over half of the students who participated in the survey identified music theory as being pivotal to the development of musical understanding; whereas over a third of the total responses were to do with music theory’s usefulness to specific musical skillsets. These two categories cater for 88% of all responses to the question, “In your own words, do you think learning music theory is important? Why or why not?” The remaining perceptions held toward music theory’s importance relate to connections held between the phenomenon and: musicianship (fifteen per cent); semantics (three per cent); idiosyncratic attitudes, social trends (one per cent) and musical attributes (one response). It is interesting to note that ‘musical understanding’, when coupled with overall musical experience, is musicianship as defined within chapter five of this thesis; yet the majority of students did not articulate this relationship.

It is interesting to note that the subject of music theory usually discusses social trends of frameworks, techniques and devices in terms of reception. As only two respondents mentioned this correlation, it is notable to mention the majority of responses do not look at this wider social picture. Most responses are confined to an individual outlook; this is possibly reflective of the age distribution of the cohort. Categories of this overall distribution hold subdivisions within themselves, which shall be explored within their own capacity for pedagogical contextualisation of student relationships with subject material. Chart 5.2 shows the ways in which students articulated music theory to contribute to understanding, the highest proportion of the distribution shown in Chart 5.1.

Breakdown 1: Musical Understandings

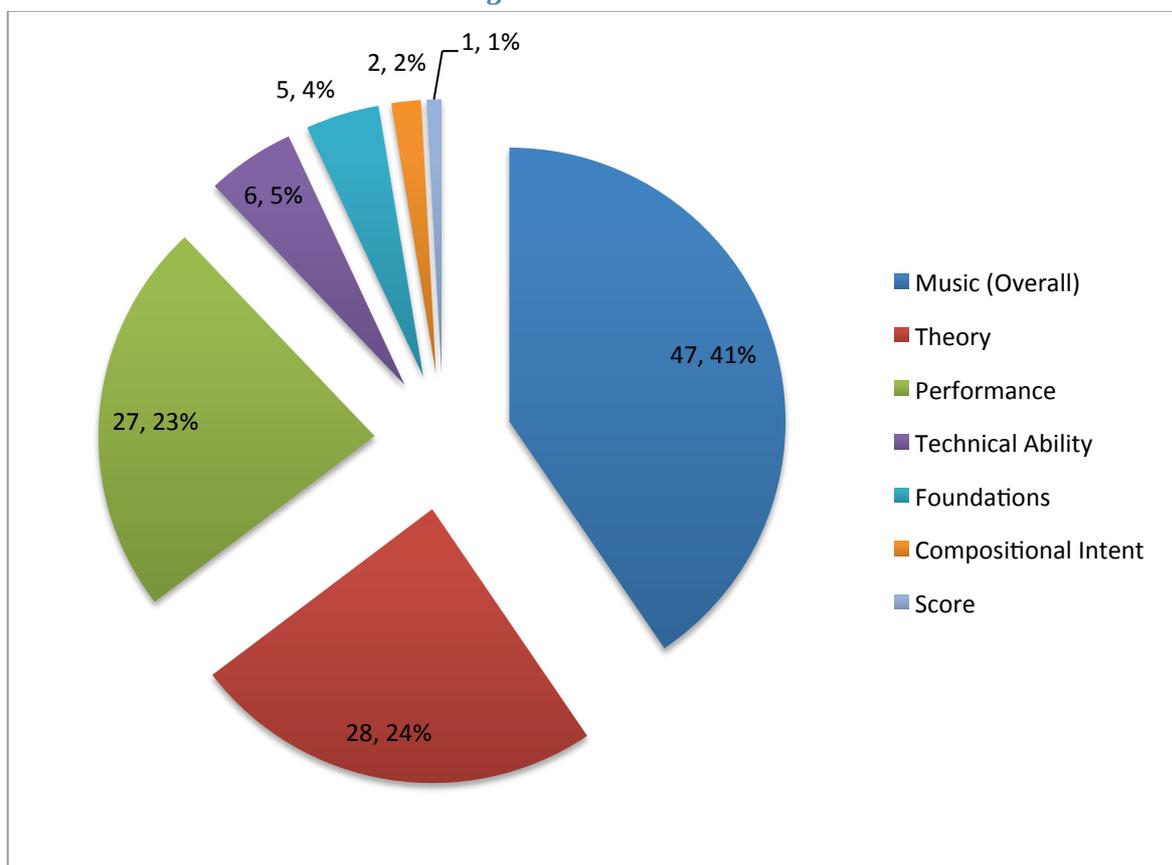


Chart 5.2.1: Breakdown of research pool's perceived importance of music theory to musical understanding.

Many students identified music theory as an aid to improving and increasing their understanding of music in an extended and broader sense. This is important as it reveals the function and importance of music theory. Music theory is generative – it can help facilitate musical thought to assist in practice. The education of the subject, after all, is an unpacking of the tools and techniques of musical structure in order to make idiosyncratic sense of the phenomenon through the use of one’s own self-exploration of expressive preferences. In this sense, the meanings behind theory contribute to understanding of overall musical structure and its purposes of

application. Drawing from another section in chapter four of this definition; these forty-seven respondents have experienced ‘nashi-truth’, yet have labelled the ‘nashi’ as a ‘prapple’: ‘musical thought’ has been labelled as ‘musical understanding’. Such a semantic association may not infer any emotional connection of music, and this inaccuracy could lead to difficulty perceiving music theory’s capacity to interconnect with other musical skillsets.

The second largest response to the contribution music theory gives to understanding was given by twenty-eight participants who stated that, “Music theory is important because it helps to clarify understanding of music theory”. This underlines a lack of clarity of the intentions and purposes of learning music theory. This shows that these responses hold no discernible definition toward the subject. Unpacking and better articulating the intentions of the subject may eradicate this amorphous and fuzzy response. The consideration of students putting little to no effort into a survey that means little to them seems a realistic view, yet this implies the very same students will need a motivational hook when the subject gets tough.

An encouragingly large percentage of students (twenty-seven) responded with, “Music theory is important as it aids understanding the context of a performance”. It could be said here that students’ perceive music theory to facilitate socially constructed understandings of performance. This shows that music theory is seen as a model of cultural and historical understanding for these individuals. As discussed earlier, this is key of a learner-centred approach to music theory teaching and learning. Five percent of these responses felt that music theory enabled stronger understandings of technical ability. Technical ability can be seen as control of fine-motor skills that are used when delivering a musical output (i.e. performing, improvising, etc.; in general, playing an instrument requires hours of identifying, understanding, training and controlling small physiological nuances that are unique to the instrument played). Students may be confusing this association of contextual interpretation to mechanical nuance (how much finger pressure to use etc.), which is a very specific mindset, and may actually intrude or hamper performance mindsets if further developed consciously.

Five of the responses to the survey positioned music theory as a way to understand the ‘foundations’ of music. This is a teleological view that misrecognises larger applications of music theory. It fails to recognise that each theoretical concept and idea can be used in combination with any other theoretical concept to create infinite, non-linear sonic effects. Foundations are built upon, yet are not the be all and end all of music theory. An important ideal for an educator is to enable a student to realise which musical contexts suit which particular

style. Given this, student responses in this vein could also be interpreted to simply recognise importance in establishing strong foundations from which to build.

Only two people suggested that the study of music theory can develop an understanding of compositional intent. It is interesting that this statistic is so low – music theory is often considered to be the toolset for composition. Granted, this chart represents a subset of musical understanding, yet this does imply that respondents may feel composition is mainly an intuitive skillset. Music theory involves techniques which enable one to make sense of a score: it is usually the main focus of information-collecting during university lectures – under the guise of musical analysis. Only one person believed theory can assist in understanding the score – this statement holds the equivalent of ‘musical potential energy’ to a budding conductor – maybe this is the case. Extending from the similar breakdown within the ‘understanding’ category, Chart 5.3 shows the perceived importance music theory holds toward musical skillsets.

Breakdown 2: Musical Skillsets

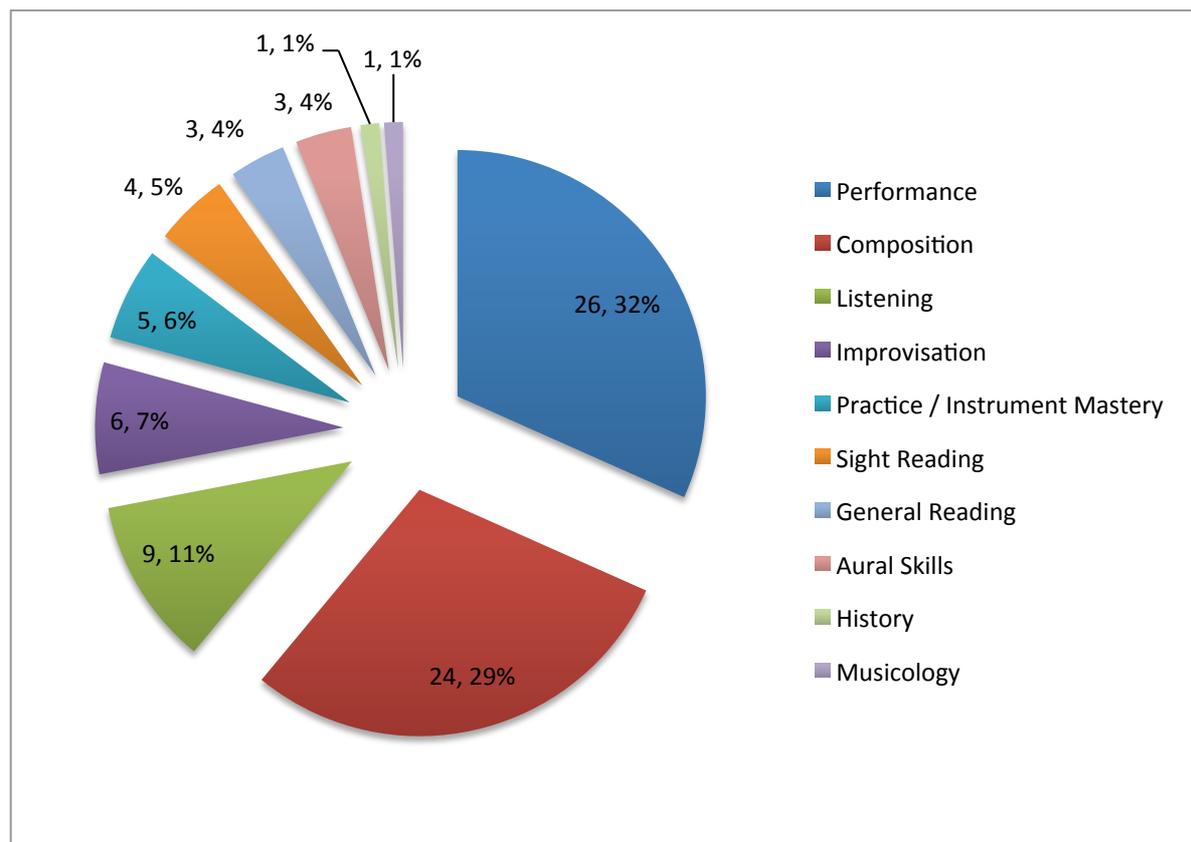


Chart 5.2.2: Breakdown of research pool's perceived importance of music theory to musical skillsets.

The largest proportion of students within the ‘skills’ grouping (twenty-six) responded with statements such as, “music theory helps give context to my performance”. This is encouraging, as it demonstrates that a link between performance, style and theoretical context has been

established through multiple perceptions. There appears to be some crossover perceptions, with differences in emphasis. For instance, music theory “helps understanding performance”, or “can help performance” directly. There is a slight difference between these two perceptions; the emphasis of the former being understanding – cognition; the latter, performance – a skillset.

It is not clear whether this link is one of authenticity to the social practices relevant to the appropriate time period or a contextualisation brought about from a structural understanding of compositional elementary frameworks; regardless, within this proportion of the cohort, music theory is understood to aid performance practice in some manner. This being said, the two respondents that claimed music theory, “...assists with understanding the historical context of my pieces”, and, “...connects with musicological understanding” provides some insight into expanded perceptions. Extrapolating from prior discussions regarding Figures 4.1 and 4.2, either perception towards theoretical contextualisation may assist a performance of western art music. Understanding of the musicological, sociological and historical elements behind a piece can inform musical devices such as accent, articulation and rubato; and authenticity to the historical social practices of the time period can inform phrasing, intensity and general expressional elements of a performance. Musicological contextualisation overlays musical structure as realised through theoretical analysis; all components reciprocate to assist in building understanding towards the generation of one’s unique interpretation. This connection between musicological and theoretical understandings is also presented by Blasius (2002), “the engagement between theory and history is profoundly reciprocal” (p. 40).

It is significant to note that no responses claim to put analysis as a skill in which music theory informs, fosters or develops. According to this distribution, students did not directly identify music theory as directly related to analysis techniques at all. This is particularly curious, as analysis can assist with understanding structure in order to assist composition. The second-largest response in Chart 5.3 indicated a perspective that, “music theory can help with learning how to compose”. This is interesting: twenty-four responses see the subject of music theory as a potential toolbox for composition, yet none made mention of analysis as a tool to extract the information required to understand how one made a composition. This may require more explicit explanation in lectures to elaborate how structures can be outlined with analysis, as merely knowing the tools available will not necessarily enable an understanding of how to compose. From the researcher’s experience, in order to compose, one must know themselves so they can implement personalised strengths, characteristics and personality into the music written: this

way, one can draw upon their own life experiences as sources of inspiration. As this process is self-generative, the composer may find it difficult to run out of creative steam.

The next few categories of responses show a more developed musical sense: although there are less than nine responses in each, they highlight valuable perspectives on music theory as a subject: the first being that, “music theory helps my critical listening”. This comment implies interesting connections: that the student has related music theory concepts with aural methods (which can be understood through critical listening); and that by understanding music theory through listening, are engaging in their own form of musical communication. Coincidentally, all three responses that mentioned music theory as assisting aural skills also mentioned its importance to critical listening. This connection also relates to concepts discussed in the previous chapter pertaining to musical thought: theoretical structures can be used as reference points and contextually reformed with every hearing. Any adherence or deviation from the framework informs the current musical realities, understanding of which enhances the potential compositional output of the musician.

There were six responses that mentioned music theory “helps develop my improvisation skills”. This demonstrates that a small percentage of the student cohort understand that in order to improvise, one should theoretically understand the musical style with which they are working. Knowing that there was a mix of jazz and classical stream students also helps to tentatively place these six respondents as ‘perceptive jazz majors’, but further exploration throughout the semester may prove otherwise. It would be interesting to explore the overall cohort perceptions held toward improvisation specifically, and the ways in which theoretical structure informs or hampers engagement. If there is time throughout the semester, this may be a possibility for discussion.

Regarding the five responses that say, “Music theory helps me to master my instrument and practice techniques”; these are of particular interest, as they could be interpreted in different ways. In terms of practice, one could say that technical work outlines the foundations of music theory – scales in their various permutations, arpeggios and so forth contribute to a large amount of technical faculty. Extending from this idea, these students are also intimating that the theoretical techniques with instrument mastery. How do these students define music theory exactly? Having a technical faculty that outlines larger theoretical frameworks can be pushing the realms of improvisation within the styles dictated by the theory itself. This signals the potential usefulness of making explicit in music theory the commonalities and differences

between performance, practice, theory and improvisation with students – within the context of building technical faculty from strong foundations of theoretical understanding.

There were a total of seven responses that claimed music theory aids general or sight-reading. It is not certain how this conclusion has come to pass, unless students associate the study of music theory to be the familiarisation of music notation. This is of course, not what the study of music theory is all about at all; as Paynter and Aston (1970) state, “Notation is not music. The sound comes first” (p. 14), yet one can argue that music theory may provide context for expressional output in performance, as discussed earlier in this section. Notation can assist with the communication of musical ideas, yet in terms of contextualisation of expression in performance, this does not tend to happen during sight-reading; as rhythmic and pitch concepts are the key points of focus whilst music becomes learned through sequential readings. Perhaps these students understand the reference frameworks that contribute to musical understanding of a previously unfamiliar piece of music: in which case, merely looking at the score would increase familiarity (as one can ‘hear with the eye’, as discussed earlier in Chapter four). In terms of specific instrumental difficulties inherent of a score, theoretical understanding would hold little relevance. A musician must have a strong familiarisation with the overall theoretical framework in order to utilise music theory to assist with sight-reading, and even then the framework might get in the way – the process would be too cognitive – it would need to have become an intuitive understanding. It may be slightly ambitious to believe transitioning students may hold this perception, yet there may be a slight chance of prodigy. Some probing through questioning of the cohort would draw out a prodigious mind – if they are present, it will be noticeable as musical thoughts will seem perfectly natural to articulate when aligned to one’s patterns of thought. As students are assessed against each other, the publicised presence of this mindset may lead to an increase in overall productivity of the class if managed correctly. It is rare for prodigious mindsets to emerge; yet it is useful to be aware of the continuum in which students may hold perceptions. Chart 5.4 outlines the proportion of cohort perceptions directed toward music theory’s contribution to musicianship.

Breakdown 3: Musicianship

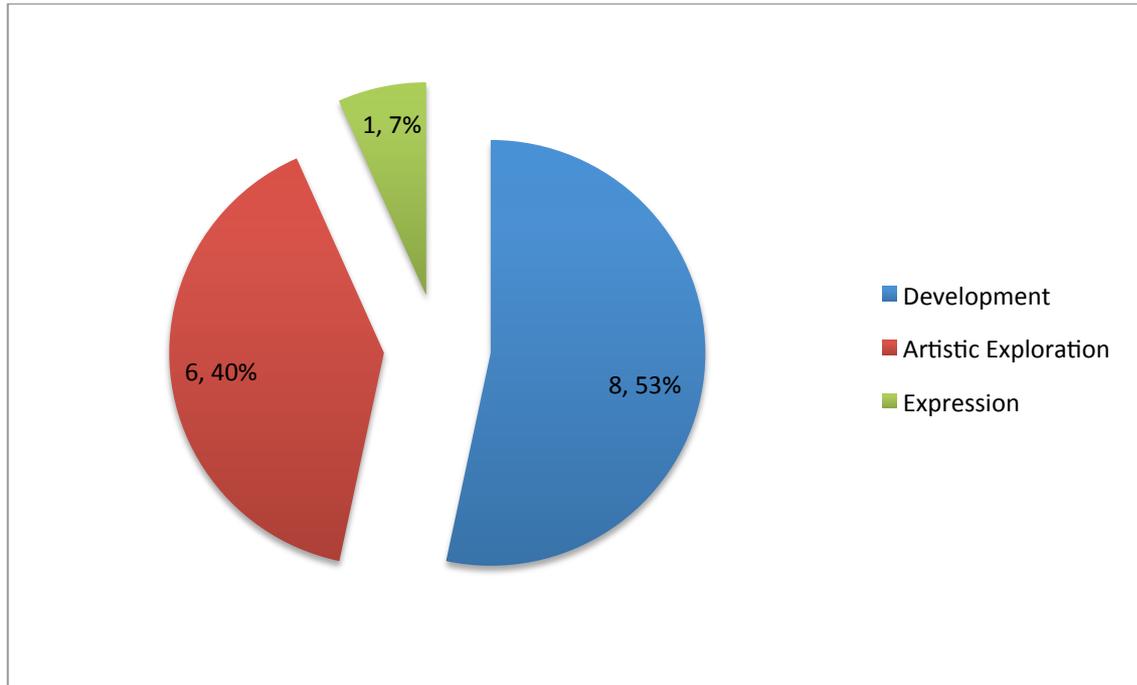


Chart 5.2.3: Breakdown of research pool's perceived importance of music theory to musicianship.

These last two categories are interesting to note, as they may either be from students who are more emotionally developed, or simply hold an interesting relationship with music theory as a subject. Several students' responded, "Music theory is important as it helps to develop my musicianship" which holds an interesting connotation – that these students see the subject of theory as a component of their own musicianship, which in turn may signify a deeper understanding of the material. It all depends on how each student may define the concept of 'musicianship' – which could be something worthwhile to discuss in a lecture setting. These associations hold direct parallels to definitions made with Chapter four, outlining musicianship to be the overall understanding of music as informed by information-based skillsets. I did not expect this thought process of first-year undergraduate students, yet it is interesting to come across such an association.

Chart 5.5 shows the proportion of students who identified a semantic association as the importance of music theory. A semantic association could be defined as ways of thinking which are analogous to the way one thinks musically. This came as a surprise as it showed potential of students identifying musical thought as defined in chapter four.

Breakdown 4: Semantic Association

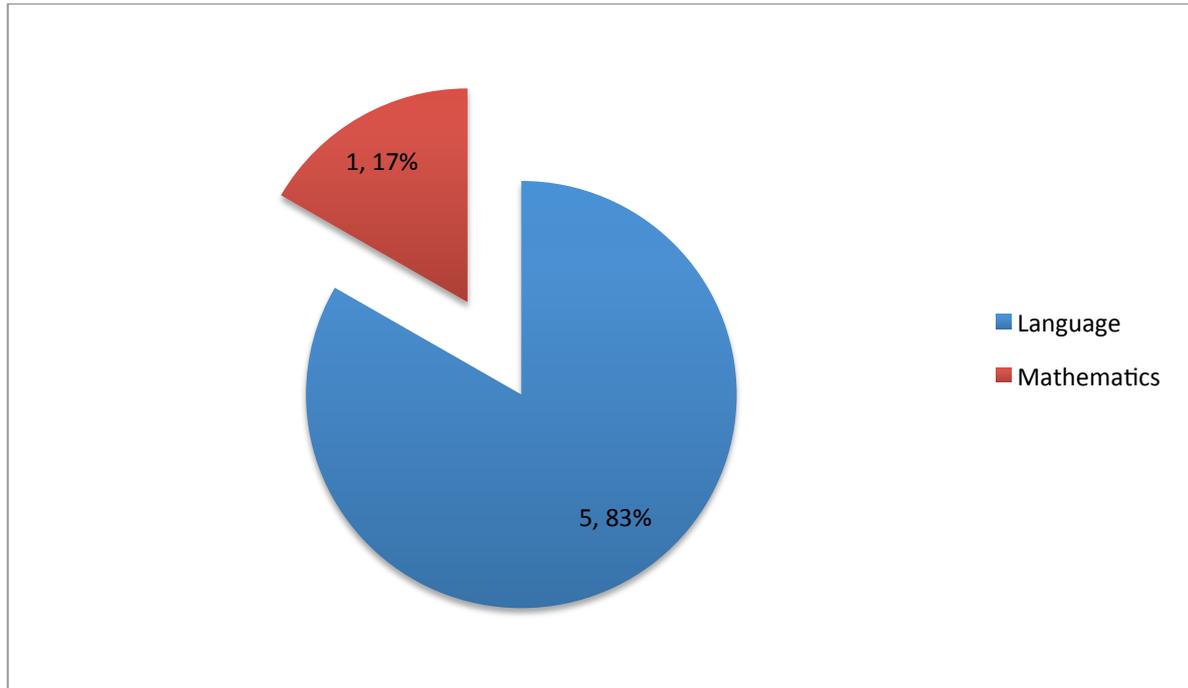


Chart 5.2.4: Breakdown of a proportion of the research pool's semantic relationship to music theory.

It is also of interest to note that a small percentage of students felt a semantic connection with the importance of music theory, with responses dichotomised, “Music theory is important as it is the language of music” to, “Music theory is the mathematics of music”. Such schematic relationships held toward music theory would insinuate an understanding of theory as a mode of thought, yet none were mentioned in the skillsets breakdown. Perhaps students see language and mathematics as different forms of ‘logic’, which may give insight into similar relationships being held by these respondents toward music theory as a musical ‘logic’. Perhaps these respondents prioritise the perceived purpose over the tool, or have experienced (and consequentially related to) such definitions through encounters with other ‘disciplinary’ traditions. The topic of mathematic associations would require more specialised data in order to fully investigate and falls outside the scope of this dissertation; as according to Nolan (2002) there is a “broad range of interrelationships between music theory and mathematics” (p. 272). Likewise, there are brief discussions regarding links between music and language within Chapter four; the overarching and philosophical interconnections being much larger in scope than this research.

It is very interesting to see such a connection to music theory specifically, yet there is much debate about music itself being a language or not. Within the bounds of music *theory* being a ‘language’ to music would be a curious topic to develop over group discussion, which inklings

toward musical thought as independent from or related to verbal or mathematical thought. It is worth discussing individual and sociocultural frameworks of music theory at this juncture, as scaffolding this can provide a context of structure as the medium of musical thought.

Points of Interest

Through responses to these survey questions, themes emerge, and educational philosophy can be articulated or expressed from a meaningful context of the research pool (Smith, 2009). Educators and other pedagogy designers may use such data to formulate their own ontology, overlaid with their choice of educational philosophy with a learner-centred approach. From the data presented above, through collation and triangulation of themes that have emerged; the following educational philosophies can be argued. These philosophies aim to outline the overarching concerns to which curriculum and pedagogy aim to address.

The subject matter should contain relevant information for all styles of music offered at the university, demonstrating stylistic plurality. Ultimately, the teaching and learning of music theory can facilitate the development of musical thought. The educator should demonstrate how understanding music theory informs musical skills as outlined in Figure 4.2, whilst simultaneously allowing for idiosyncratic adaption and growth. Stemming from this idea is that music theory is not merely notation. One who understands idiosyncratic musical thought and communication can begin to appreciate and grow from divergent applications of structures shown by the musical expressions of others.

Looking at an overall snapshot and focusing on age and gender distributions, 97% of students were aged nineteen to thirty (54% were aged nineteen); of the entire cohort, 42% were female and 58% were male. The delivery of content should cater to these age and gender demographics, yet also allow for the three students over this age bracket – their experience might be an asset and should not be excluded. For instance, a study guide or presentation slides (if either are used) may adopt a very inclusive style, with no personal pronouns used; sacrificing some formality in order to appear more inviting to the younger demographic. To assist with material selection, the musical influences shown in this chapter can help inform familiar resources for this cohort. For instance, it would seem a safe idea to analyse some jazz, classical, rock, blues or pop music for examples of the subject matter being taught throughout one's course.

There were 190 family members of the cohort who play at least one instrument, and thirty of those self-identified as composers. The home culture and environment can potentially foster student development of musical identity. Musical families have experienced what it is like to be a musician. It would be safe to assume that some musical parents may understand some music theory and hence provide means for discussion. Family members who are composers may or may not use music theory yet could be an influence to students, or a potential resource to an educator as a guest lecturer. Some students feel there is a connection with composition and music theory, yet there is no mention of analysis.

It may be useful to also discuss the commonalities and differences between musical skillsets with students in order to get to know the students a little better and perhaps catch a glimpse into their perceptions or family influences. Such discussion could prove to be interesting, as from the data, multiple angles have been deliberated. For instance, the second-largest proportion of students holds no discernible definition toward music theory; a few students demonstrated an understanding of the theoretical mindset required for improvisation; and a large proportion feel there is a connection between theory and performance, yet did not articulate precisely how this is so. From this discussion, light may be shed on information regarding questions raised throughout this chapter. For example, regarding the second-largest percentage of students, ‘What is causing this lack of purpose toward music theory?’ One might be able to get to the bottom of the questions, ‘How does theory aid performance? Do they see the connection as one of historical context or structural frameworks?’ Discussions of this sort can contextualise the cohort and also give the educator a chance to set their education philosophies and principles in which students can follow for the remainder of the course.

A proportion of students define technical faculty or instrument mastery as practice techniques, which are different to physiological mechanics – this may cause developmental problems down the track. Scales and arpeggios are seen as technical work – they also appear in theory textbooks: the educator must demonstrate how theoretical understanding can inform all musical skills as it contributes to musicianship via historical or structural analogy. A small amount of students linked theory with musicianship but did not define the latter concept in itself. How do students define musicianship (one’s cumulative understanding of music)? What remains clear is that while it is necessary to provide students with a consistent reference framework of the subject material; it is not ideal if musical relationships are entirely cognitive. Students should be given

the opportunity to interpret and question musical understandings through hermeneutic dialogue, whilst being mindful of the reciprocal relationship between musicality and musicianship.

This chapter has sought to analyse the perceptions held toward music theory of first-year undergraduate students in order to contextualise the formation of a learner-centred teaching approach. It has also attempted to discuss factors inherent to the teaching and learning of music theory as seen from the perspectives of students surveyed. The next chapter will focus upon the teaching and learning of music theory from the educator perspective. It is hoped that the symbiotic relationship between student and teacher perspectives can contribute to the creation of a learner-centred approach to music theory at university level.

6. Between Paradigms: Pedagogical Considerations

It seems clear that in order to create a paradigm of understanding, one must first define the phenomenon under investigation. It follows that once an author has attained a suitable definition of a phenomenon, a path may be created from these ends in order to justify the means.

Continuing the phenomenological position adopted throughout this thesis, this chapter embarks upon an autoethnographic exposition about music theory education as a teacher-researcher-musician because music theory cannot (and should not) be restricted to the worldview of a single definition. As the musical phenomenon is multi-dimensional and as its experience is unique to every participant, so too should its definition(s) in order to cater for such a trait.

Expanding from a purely individual musical viewpoint (single-lens phenomenological perception) to life-world complex (interdependent phenomenological overtones) is a difficult matter of transformation. Fortunately, Jan Bengtsson (2006) touches on this with clarity:

To be a human being is to live in a world, to be worldly, and this should not be understood in an accidental way, but as a characteristic of being human. It is, however, equally important to understand that the world is also dependent on the individual subject, that someone understands the world in a certain way, with a certain meaning, and is motivated to act in a corresponding way. As long as we live, the world is not indifferent to us. The concept of life-world expresses, in other words, an interdependent relationship between world and life, and not a deterministic relationship between the two. Accordingly, there is no such thing as a world or a life in itself. This interdependency also implies that the world as well as life is open and incomplete. So, even if pedagogical practice always takes place in a world, it is also always an individual subject that understands it with a particular meaning and acts in it with a particular intention. The world, therefore, does not mean the same for all people, and in a pedagogical situation they do not all make the same out of it. (p. 123)

Bengtsson touches on an important and underlying reason for recognising the value and worth of a plurality of perceptions that not only assist in the construction of a music theory pedagogy, which is fundamental. From personal experience, the education of the subject is not as simple as scaffolding from an assumed reference of experience and understanding – not all undergraduates

have their thoughts cast in stone with regard to definitive concepts of music theory. When asked a question, students may need to be provoked to explore rather than respond with the first solution that comes to mind. Problems may also arise when asking a student to describe musical phenomena via verbal means, as words oftentimes do not highlight core values held by a student. As explored in the previous chapter, mapping distributions of student perceptions hoped to gain insight to the variations of experiences toward the phenomenon. Relating such student perceptions to my own autoethnographical explorations in chapter four hoped to build perceptions toward the teaching and learning of music theory in a way that reflects Bengtsson's pedagogical approach. Deriving themes from this combination of data points may lead toward the construction of pedagogical approaches with a plurality of perceptions as its cornerstone.

Musical meaning is deeply personal, and dependent upon the context in which it is created by its composer – which in turn will be a different association of meaning than that of its audience(s). Determining the source by which one defines personal meanings to music is largely dependent upon individual personal experience as a whole: the culture in which the individual grew, and the understandings one has made of their world. In terms of contextual sensitivity, as explained by Kwami (2001),

The fact that the classroom context is different from any music's cultural context can make it possible to ensure the application of equal opportunities... in doing so, value judgements cannot be ignored. But the teacher can present an unbiased perspective if they remain open and present both sides of the coin. (p. 151)

The individual - their identity - brings forth reason and meaning to the aesthetic structure of musical tools. Each culture of the world has their own perception of musical arrangement - their own aesthetic of the phenomenon - and in turn, each individual of that culture will bring their own experiences to their learning. As articulated by Askew (1993),

The message for music educators is thus, if you are only studying the parts then you are not providing any music in your curriculum. The comparison of parts with whole and intuition with analysis draws our attention to the place of apparent opposites in our lives. (p. 39)

In current music theory educational discourse, the bigger musical picture is being left to learners of such teaching materials to connect and ascertain for themselves – there is no conceptualised guidelines to doing this, no teaching support. As such, students are being asked to form top-

down or overarching understandings of music theory without any reference or guidance. This may run the risk of critical information being pieced together in a less efficient manner than an educator may foresee, or being learned in a way that hampers the future development of students. Repeated mistakes in understanding material may emerge, and perpetuation of misguided concepts can cause a plethora of education issues if not handled appropriately. Students ought to be taught in a way that facilitates big-picture and smaller concept thought: the bigger-picture can outline and contextualise smaller concepts in which students are attempting to piece together themselves. An educator can also provide insight into various sections or focal points to this pedagogical puzzle; by groupings of ideas or skills (and how they might be used to explore music); or even help to guide students through paths previously explored by musicians of differing styles (ideally, musicians the student may find inspiring).

Briefly touched upon in chapter two, neither the Aesthetic nor Praxis paradigms hold full coverage of the issues faced in the teaching and learning of university music theory. These paradigms can be seen as two sides of the same epistemological coin: musical thinking is circular (Kwami, 2001); contains both cultural (Goble, 2003) and individual (Swanwick, 1983) underlying phenomenological structures (Friberg & Battel, 2002). This inherent multifaceted nature to music interplays with idiosyncratic experience and sociocultural perceptions of norms, values, beliefs and symbols (Peterson, 1979). It appears that a combinatorial approach to pedagogy development may be required, which focuses on the strengths within each paradigm.

An integrated approach implies equal distribution of educator focus upon the development and understanding of two educational aspects: structural elements of the subject matter and personal artistic development of the particular individual(s) situated within culture(s). As articulated by Paynter and Aston (1970), “Education does not begin with specialist boxes filled with facts to be memorised. It should be child-centred and start from the needs of the individual” (p. 2), thus pedagogical approach must be designed from the particular experience of the educator, with growth of students in mind. Therefore, for at least one side of this paradigm, this researcher cannot possibly construct a ‘one-size-fits-all’ pedagogy to personal development of the particular as artistic development depends upon sociocultural and individual idiosyncrasies to which only local educators would be familiar.

Comparing Paradigms

This chapter aims to explore the connections and interpretations of music theory education paradigms with everyday, real-world practice. This section continues from discussions made in chapter two: the music education paradigms known as ‘Aesthetic’ and ‘Praxis’ will be explored in terms of their relevance toward music theory teaching and learning at university level. For full accounts of each music education paradigm, it is recommended original expositions be explored by readers (Swanwick, 1999; Elliot, 1995; Alperson, 1994). Constituent aspects from both paradigms will be compared with themes discussed in previous chapters. The act of comparing these paradigms with themes presented in the current study aims to explore and challenge my own assumptions regarding my research, “for if we subscribe to an inadequate or false account of the value of arts activities, we shall mislead others to distort the enterprise itself” (Swanwick, 1983, p. 9).

The proceeding section will focus on aspects of identity development within music theory education, namely cultural and intrapersonal dimensions of musical discourse usually offered within Australian university frameworks. The words of Reid (1962) state the cause, “for the teacher, upon whom practical decisions constantly depend, it is not enough to think with as much integrity as he can muster: he has to make a deliberate orientation towards making real his values in practice. This is not in itself a philosophy, but it is important” (p. 94). This section will touch upon aspects teased from the current section, as to account for the full gamut of approaches to cultural and individual identities veers from the core of this research and into the realms of ethnomusicology. As such, the boundaries of the Aesthetic and Praxis approaches identified as relevant to university music theory education define the scope of this chapter.

The Aesthetic and Praxis paradigms are two basic educative models for secondary school music. The first places music as central, while acknowledging that personal, social and cultural benefits are collateral outcomes of music study. The second places personal, social and cultural benefits as central to learning, while acknowledging that music is one of many means to achieve such outcomes (Carruthers, 2008). Rather than attempting to prioritise core alignments in a general sense, I wish to explore these educative models in light of perceived relevance to university music theory teaching and learning. In such a comparison, a central question emerges, ‘does the focus of music theory teaching and learning contain music or social and cultural benefits at its core?’

Aesthetic music education subordinates the ultimate question, 'what is music?' by looking at music and its education in terms of the question, 'what is music's function?' Swanwick (1999) continues this breakdown,

The question 'what is music's function?' is therefore best subordinated to the question 'how does it function'? This immediately gives a critical edge to educational transactions and has us attend to the actual discourse of music itself, not as a set of signals pointing to social origins or as a symptom of the psychology of musicians, but as symbolic form redolent with layered meanings. (pp. 35-36)

Here Swanwick states the alignment of the Aesthetic paradigm: that the focus of education should be on music, not socio-historical analysis. For example, the method by which a major triad is constructed remains the same for all students of western music theory (the inclusion of a major third and perfect fifth intervals above a given note). The application of such a chordal construction can be identified by ear and this is a domain where aural and theoretical skillsets connect; yet these structural interactions form different meanings to different people. This infers a culturally bound structure that underlays western music, yet such a structure is not provided in a formalised sense. The basis of the aesthetic music paradigm relies on two fundamental principles, according to Reimer (1989),

The first principle is that aesthetic educators must be acquainted with the deepest values of music as they are understood by the professional scholars whose business it is to explain them... The second principle of aesthetic education is that we must do all we can as educators to represent the art of music to children as authentically and as comprehensively as our understandings of music and our teaching expertise allow. (pp. 25-26)

These principles imply that music should be taught with the considerations of the most relevant aspects of music as deemed by the professional; and that educators should teach to the best of their abilities. In light of discussions in previous chapters, the current study finds the deepest values of music theory education to be:

- Music contains different meanings for all
- Understanding music in terms of convergent and divergent structures facilitates musical thought
- Musical thought, utilising both interpersonal and intrapersonal intelligences, can express convergent and divergent understandings, which guide an individual's practice of music

With such values in mind, it leads to the thought that music is an ‘Art’, as it embraces coherence and divergence of perception. This occurs insofar as there is a socially constructed convergence of understanding, which individuals personalise through divergent meaning making to individual experience. A question emerges in order to teach and learn from this central perspective, ‘does educational approach need to centre about the person or the phenomenon?’

In approaching such a question, it is important to discuss some differing interpretations of the central theme of the Aesthetic paradigm within the literature. For example, reviews of the text *Foundations and Principles of Music Education* by Charles Leonhard and Robert W. House (released in 1959 and then re-issued in 1972) indicate an underlying hermeneutic issue. This text was considered seminal at the time of its release. In a review by Normann (1960) he states a principle focus of the text, “The focus should always be toward bringing out and sensing the expressive elements inherent in music of worth” (p. 51); to Crews (1973) the very same authors say that the, “primary purpose of the music education program is to develop the aesthetic potential, possessed by every human being, to its highest possible level” (p. 86); and according to Goolsby (1984) it is written by Leonhard and House that “the primary objective of music education must be to develop the innate musical responsiveness of every individual to the highest possible level and to nurture and expand his potential for the aesthetic experience” (p. 15). The next few paragraphs will highlight a hermeneutic conundrum presented by Normann, Crews and Goolsby’s citations of Leonhard and House.

Normann, Crews and Goolsby all identify their respective statements as citations essential to Leonhard and House’s argument; yet they do not speak of the same phenomenon. With all perspectives allegedly converging on Leonhard and House’s seminal quotation, there remain divergences in their interpretations. Normann’s version focuses on elemental components believed to hold particular expressions within an entirely structural domain. Highlighting that such elements are contained within ‘music of worth’ also implies a particular cultural aesthetic judgement that could lead to false imperatives. Crew’s citation hones in on the development of latent aesthetic potential, which implicitly infers aesthetic experience to be embodied within individuals as an objective ontology. Goolsby’s quotation concentrates on the development of an individual’s responsiveness to music and hence places aesthetic experience as a phenomenon defined by a particular sociocultural perspective. Such differing interpretations of core aesthetic music philosophies open cracks in its argument, which allow re-interpretations of the concept where one can interject a divergent stance. When comparing the interpretations of Normann,

Crews and Goolsby's versions of Leonhard and House's central argument for the aesthetic paradigm, their differences outline key areas of the Aesthetic / Praxis debate.

Normann (1960) brings an important hermeneutic aspect to light by addressing structural aspects that determine 'music of worth'. Without the tools to find commonality within the multitudes of stylistic musical divergences, the concept of what defines 'music of worth' remains open to interpretation. The underlying implication of this statement ultimately points to western 'classical' art music as the 'only' music 'of worth', which many people interpret as elitism and segregation of culture – maybe culturally narrow, too. This idea resonates with discussions brought about within the current study's literature review, where segregation of musics based on quality judgements impact which musics are taught in educational institutions (Anttila, 2010; Chenoweth, 2009; Imada, 1999, Kang, 2006; Wiggins & Nketia, 2005). That western art music has incorporated hundreds of years of continuous analysis and evolution of its own materials (Burkholder, Grout & Palisca, 2006; Christensen, 2002; Morgan, 1991) holds considerable merit. It is believed that this quality is behind what was truly meant through this iteration of 'music of worth'. Interpretation plays a big part in determining the nature of music, and seems to play a major part when comparing the aesthetic approach with the counter-argued 'Praxis' philosophy.

By addressing the development of 'aesthetic potential', Crews (1973) implicitly infers Leonhard and House's (1959) seminal notion of aesthetic experience to be embodied within individuals as an objective ontology. Swanwick (1999) touches upon this aspect, "as we have seen, one weakness in the idea of the aesthetic seems to be that it separates out music and the other arts from other forms of discourse, isolating it from other achievements of the human mind" (p. 7). Leonhard (1968) defers to John Dewey, arguing he "emphasized that the basis for aesthetic experience lies in ordinary creature experience" (p. 40). Here, one's interpretation of what Dewey meant by 'ordinary creature experience' can influence the outcome of one's understanding of aesthetic experience. To interpret this pivotal theme of the Aesthetic paradigm (to develop the 'aesthetic potential'), whilst regarding it to be of 'ordinary creature experience', infers qualities common to both forms of experience. This can lead to understanding 'aesthetic potential' as synonymous with understanding 'ordinary creature experience'. This can then lead to interpretations that imply the 'aesthetic' as an ontological property of everyday experience, wherein the study of an artistic phenomenon could inform understandings of experience. In light of discussions in chapters four and five, such an angle can hold true with regard to an individual understanding experience within purely musical domains, yet when the same logic is applied to

non-musical understandings of everyday experience the argument does not hold. Regelski (2005) states that for Dewey, “aesthetic experience is a qualitative, affective sense of unity that pervades ‘an experience’, as opposed to being ‘in’ art ‘works’” (p. 11). This raises the point that the aesthetic experience remains within the bounds of the individual, not as a socially constructed phenomenon that is commonly experienced by all. Adding to this view, Oppy and Trakakis (2010) mention that “Kant’s doctrine of aesthetic autonomy rests on the claim that aesthetic pleasure follows from the judgment itself; it is not tied to pleasure in the object” (p. 10). Here the concept of the aesthetic is associated with an individual’s relationship to a value-based judgement. At this juncture it remains clear that complications of a hermeneutic nature have played a role in creating dissonant understandings of what contributes aesthetic experience. When considering this in light of the underlying question driving this section, ‘does educational approach need to centre about the person or the phenomenon?’ it appears that the emphasis focuses on the former over the latter.

Goolsby’s (1984) interpretation of Leonhard and House’s (1959) seminal quotation articulates the development of an individual’s responsiveness to music and hence places aesthetic experience as a phenomenon defined by a particular sociocultural perspective. Such an articulation resonates with the values of music theory as discussed within chapters four and five; where a differentiation between individual and sociocultural approaches to music is made. With this in mind, the development of an individual’s musical thought can be the focus of educational delivery, regarded as personalised understandings of a socially constructed and culturally defined aesthetic perspective of music. When interpreted from this angle, the educational approach of music can be argued to concern *both* the person and the phenomenon. As this hermeneutical issue remains unresolved through unpacking underlying views and interpretations of the aesthetic approach, I will explore the key areas just discussed from the context of the Praxis paradigm.

Ultimately, the Praxial philosophy focuses its attention on the humanised involvement of music, concentrating on what humans ‘do’ with music from a methodological standpoint, rather than attempting to understand the phenomenon within or for itself (*Verstehen*). This places the central educative focus upon personal, social and cultural benefits to learning, while acknowledging that music is one of many means to achieve such outcomes (Carruthers, 2008). Instead of attempting to answer the question of ‘what is music?’ directly, the question, ‘what is music used for?’ or ‘how do humans use music’ shifts the focus from phenomenon to purpose, which relies on experience and interpretation for its foundation.

The praxis philosophy seeks to unite culture through music – while is a noteworthy intention – this eclipses the aim of music as expression where differences are made and celebrated through varied perspectives and practices. Following prior discussions of this thesis, a, approach suited to divergent understandings is required rather than one that is convergent. In this way, praxis is seen as socially convergent and aesthetic is individually divergent. Expanding upon this are two points raised by Goble (2003), “First, that ... the concept of “music” itself is *not* a cultural universal, and, second, that they are members of a profession that has a vested interest in seeing it as such” [their quotation marks and italics] (p. 34). In such light, the representatives of paraxial philosophy appear to develop students by facilitating musical experiences through practice, yet seeks approach music as a cultural universal. There is not one way to experience music; likewise there is not one way to experience culture, these are all dependent upon the individual, who interprets music through his or her own value-based judgements.

Where the aesthetic argument raised an issue regarding ‘music of worth’, perspectives from the Praxis camp interpret the matter as depending on a certain *connoisseurship* of knowledge and experience (Regelski, 2005), suggesting elitism and disregard for the collective cultural musical perspectives. Here, Regelski draws upon Eisner’s concept of educational connoisseurship, where a teacher can inform student action using analogy through an immersed and experienced perspective. As Eisner (1979) divulges, “Connoisseurship, as has been noted, depends upon the differentiated use of anticipatory schemata. These schemata allow one to bracket phenomena so that they become defined and visible.” (p. 15). This idea of ‘visible’ related to music, attempts to make music known, understood or felt as translated through visual analogy. As the aesthetic paradigm does not include pathways to such a schematic connection, it can be argued that adopting such an approach to the intangible phenomenon of music could potentially be misaligned. This being said, Regelski is using Eisner’s term as a means to infer elitism and in so doing, presents his argument in a way that can potentially sway a reader rather than concentrating on the issue at hand. It is one thing to say that determining ‘music of worth’ does infer elitism. It is another for Regelski (2005) to claim the ‘elitist aestheticians’ to remove themselves from a praxis paradigm as they have considered themselves to “*transcend* particulars of time, place and person” [their italics] (Regelski, 2005, p. 11). Here, Regelski is confuses the argument against ‘music of worth’ and elitism with defining the aesthetic experience.

The analogy between the Aesthetic experience and Praxial camp’s adoption of Csikszentmihalyi’s concept of ‘flow’ (1992) resonate to describe a similar experience. Aesthetic musical experience and the concept of creative flow both emphasise a heightened state of

emotional awareness (when I was younger, I used to call it ‘connecting’ with music). From experience, when I am ‘connected’ in such a way in practical contexts (during performance), I am able to utilise my musicianship. As I have matured the more I have come to understand music in a structural sense, the more I am able to draw upon and utilise this state of mind as it is occurring. The debate regarding aesthetic experience as transcendent or a concept of creative flow may be a case of a nashi being called a ‘prapple’ as discussed within chapter five.

There are inconsistencies to beliefs held by members of the Praxial philosophy (Goble, 2003; Regelski, 2000); which tend to make understanding the underlying educative frameworks that regulate such a philosophy difficult to pin down. For instance, Spsychiger (1997), in her comparison of praxis views against ‘music education as aesthetic education’ (shortened to MEAE) she states,

Elliot identifies fundamental problems in MEAE’s philosophy; for instance, he says that the assumption of a genuine association between musical structure and human emotion – and consequentially MEAE’s intention to educate feeling through music education – is illogical. (p. 33)

The basis of this viewpoint suggests that the aesthetic model assumes all emotional thoughts or feelings to be similar within each individual undertaking music education; which could never be taught as a model similar to all. Yet Elliot (2000) claims,

We feel specific emotions that form in and arise from subconscious processes linked to a variety of genetic, cultural, and personal factors. The key question that remains is this: How does a brain substrate of feeling become known to us? In other words, how do we become aware that we are feeling an emotion? [Their italics] (p. 82).

It was stated earlier in this section that aesthetic experience remains within the bounds of the individual, not as a socially constructed phenomenon that is commonly experienced by all. Elliot is asking how does an individual become aware that they feel an emotion. It follows that an emotion as questioned in this light would require some reference schemata or framework in order for one to make meaning of a feeling through any sensibilities. In terms of music education, it would implicative of musical structure to be such a framework. The educative question remains as thus, “How can one combine the seemingly diametrically opposed musical learning philosophies: commonly-conceived reference and pattern frameworks linking to musical thought (aesthetic), versus social hermeneutics and experienced association (praxis)?”

In light of discussions in previous chapters, the current study finds the deepest values of music theory education to be that:

- Music contains different meanings for all
- Understanding music in terms of convergent and divergent structures facilitates musical thought
- Musical thought, utilising both interpersonal and intrapersonal intelligences, can express convergent and divergent understandings, which guide an individual's practice of music

Discussions throughout this section have outlined key areas of the Aesthetic / Praxis debate. There appears to be a concurrence in the debate when focusing on the value in determining 'music of worth', as it can lead to interpretations of connoisseurship within cultural perspectives. Concerning discussions of creative flow and aesthetic experience, each pertains to a heightened sense of emotional awareness. These both remain within the bounds of the individual, not as a socially constructed phenomenon that is commonly experienced by all. Musical thought is deeply personal and related to identity formation based on value judgements concerning the individual and the individual in relation to their perceived environment (local, social and cultural contexts). There remains to discuss the influence of sociocultural influences upon the individual and how this occurs within a musical context.

Within a secondary schooling context Anttila (2010) found that, "many adolescents thought that the most important task of school music education was to develop the pupil's own relationship to music within his or her own culture(s) – not the transmission of the old cultural heritage" (p. 247). University students who continue to hold such a perspective from their secondary schooling may risk viewing music in a compartmentalised manner as stated by Aiello and Williamon (2002) who claim, "Those students who do not fully integrate the various components of their musical knowledge fail to make the inherent connection between music performance and music theory" (p. 176). It goes to follow that identity development in such a context would fail to acknowledge interpersonal and intrapersonal knowledge to contextualise music theory, which then informs practice.

The Individual within Culture

A continuous theme of the current study is that every person who experiences music will interpret the phenomenon differently. This implies that interpretation is largely guided from subjective experience and/or external influences. Experience, a phenomenon which all humans share yet remains idiosyncratic to the particular, informs the way in which one interprets reality (including musical realities). When the individual brings their own mode of thought to the social table, meanings can be conversed, as discussed by Blacking (1973),

What turns one man off may turn another on, not because of any absolute quality in the music itself, but because of what the music has come to mean to him as a member of a particular culture or social group. (p. 33)

This is not to imply that one cannot think musically or about the music for themselves; on the contrary, it suggests that musical meanings are reformed through an entire social experience and that musical realities are shared in social experiences, “within society, it [music] provides a means of communicating which goes beyond words and provides us with shared, unspoken understandings” (Hallam, 2001, p. 61).

In expanding the concept of musical thought outward from the individual to the social (where and when music as performed); a musical experience is idiosyncratically understood and interpreted by each of its practicing members. Idiosyncratic schemata is autonomously developed by an individual whilst performing, who is contextualised by musical thought, other performers, the audience and the cultural atmosphere. We experience music, not merely hear it like a doorbell or a train siren. Sure, we experience doorbells and train sirens in our lives, yet they are perceived as auxiliary sounds to our focus of attention. Music is experienced when its sounds become the focus of one's attention, wherein the interplay of notes replicates an experience that is *primary*. In turn, the personal lived experience (as well as past experiences) of the listener engages with the musical experience in focus. The sounds heard are received by the ears as sound waves – the medium of thought – and engage with memory through cognitive and emotional attachments to personal lived experience. According to Hargreaves and North (1997), learners reform musical understandings, “using their previous knowledge and experience to interpret new information, thus changing their beliefs and judgements” (p. 7). Hence, familiar structures can be related to personal lived experience (striking a chord: recalling simultaneous experiences) – be it through memories, feelings, images, other sounds or by any further means.

There are many socio-cultural factors that are at play with any given musical experience (Davidson, 1997). Ultimately, music connects and assists people to cohere and belong. The studies that continue this path of thought are Music Sociology (the reciprocal nature of music and social environments), Musicology (the study of western musical cultures) and/or Ethnomusicology (the study of non-western musical cultures). It is not the intention of the current study to venture down these paths as it verges with this territory. What this thesis does intend to explore is the relationship between individual musical thought within situated environments of the university context. As Titon (2002) states, “our response to music depends on the ideas we associate with that music, and those ideas come from the people (ourselves included) ... In that way, music also makes (affects) people; the relationship is reciprocal” (p. xvii). With this in mind, three points can be drawn regarding the nature of music upon the individual:

- Music is a phenomenon that expresses experience (Trevorthen, 2000)
- Music plays with a listener’s personal experiences (Swanwick, 1983)
- The resultant, reformed experience is unique to the interpreter (Hargreaves & North, 1997)

This exchange could be argued to be a form of communication between the individual listener’s past experiences with present social context and cultural understandings. The phenomenon could be regarded as communication of lived experience. Each lived experience, when played to another, interacts with another’s differing lived experience. Some transpositions are agreeable, some or not: the beauty is in the ear of the beholder. The arts offer, according to Paynter (1976), “*insight* into the non-verbal, intuitive areas of experience which help to characterise our individuality and which can open doors on a totally different kind of ‘knowing’” [their italics and quotation marks] (p. 22). The relationship between society and the individual is reciprocal, according to Hargreaves and North (1997), “individuals have an effect upon their social environment just as this environment determines and constrains the individual’s behaviour” (p. 5). This is the hermeneutic conundrum: music makes us while we make music.

Studies that have looked at the effects of music and the role of identity processes in conformity and social influence (Crozier, 1997) according to Davidson (1997) are historical. Where “the perceptual experience and production of works has changed as a result of emerging cultural values and practices: there is an interaction between past and present” (Davidson, 1997, p. 211). Therefore, culture and identity are inexorably linked, as Swanwick (1999) reminds us,

We do not merely 'receive' culture. We are cultural interpreters. A conception of music education as a form of cultural studies or social reinforcement is likely to result in a very different curriculum from that which identifies music as a form of discourse. (pp. 30-31)

In this light it can be said that each individual receives and then in turn interprets their culture differently, as they experience it uniquely – as situated within the contexts of individual lives. Yet it is not simply the individual that contributes to this exchange, social contexts enable groups and cultures to cohere. Likewise, every individual who interprets culture also interprets the phenomenon of music uniquely, as Kwami (2001) states,

The various musical traditions around the world may be united in qualifying as a distinctive means of human discourse. They constitute a global phenomenon of communication and expression linked to cultural practices, and operate in different ways in different contexts. (p. 143)

Swanwick (1999), notes a similar idea,

Of course, music is not all the same. Cultural and personal differences will account for many variations of musical type and social function. But most people from most cultures seem to share a propensity to music, just as they share a propensity to language. (p. xii)

As stated by Hargreaves and North (1997), “it is possible to study the cultural background and context of different musical structures” (p. 4). Such excursions into different musical structures could be argued to be the signifiers of cultural identity as a set of expressive symbols, which represent a musical perspective. Every culture has an identity, and according to Peterson (1979), “In contemporary parlance, culture consists of four sorts of elements: norms, values, beliefs, and expressive symbols.” (p. 137). There exist both convergent and divergent educational approaches to music, “the various different practices in different cultural groups... must be understood on their own terms (that is, in the terms of their unique conceptual systems)” (Goble, 2003, p. 34). It seems the principle conceptual device being used as an explanatory tool is the difference between divergent and convergent understandings of music.

With this understanding, the cultural frameworks that have been phenomenologically derived do not in themselves contain inherent cultural symbols – it is in the ways that a musician understands, and hence utilises the framework that creates the cultural reference. The constituents of these frameworks are mere toolsets that have been created by individuals and socially conditioned through definitions of ‘successful’ use within particular cultures.

When students transgress conventional models in order to contextualise their own understanding; they are creating their own perception of their cultural identity. Continuing from the autoethnographical extrapolations of chapter four, multiple reference frameworks allow students to triangulate understandings of new music being heard. This is the essence of divergent cultural understandings, as articulated by Trevarthen (2000),

Musicality, because it is in each and all of us, permanently, compels sympathy of interest and moving across all cultural and historical differences between individuals and communities, and from infancy to old age. This is its adaptive value. We all possess the same fundamental capacity to respond musically, however different our cultures of music may be. (p. 157)

A student benefits from an understanding of his or her own cultural outlook. They can use it as a reference to determine divergent models. For instance, understanding one musical framework as a specialty could be used as a reference to see how other musics are different. One might hold an appreciation resonant with Trevarthen (2000), “however it is described and wherever it is found, every piece of music is still an invented product of ‘culture’, full appreciation of it being an acquired skill.” (p. 156). For example, a musical model that is heard within an unfamiliar context provides alternate methods for solving a familiar musical problem for the listener. In such a case the listener has just experienced a new approach to music which contextualises his or her musicality and can reform understandings appropriately. One can do this if a personalised reference framework has been established (understanding their own view of their cultural model through music), contextualised within an understanding of some bigger musical picture (in terms of a standardised cultural musical framework). This aligns with the statement postulated by Davis (2005), “The relationship between music and identity becomes one of circulation, exchange and interactivity rather than jurisdiction or reflection” (p. 59). It appears that the overarching aim of music in this sense is to teach acceptance of cultural diversity – this goal seems achievable through understanding the relevance of music theory to the individual. Music theory can open paths of understanding toward varied perceptions of a dynamic cultural model, and more importantly, how individual outlooks can differ. One who understands this may begin to appreciate the variations and contexts that others show within their unique musical expressions.

Continuing the autoethnographical postulations of chapter four, one who understands a cultural reference framework in relation to their individual interpretation can triangulate musical understandings with other musicians. Within the social, cultural and historically divergent contexts explored in this chapter, the governing aspects of musical communication appear to remain consistent. Inherent to this approach, an interesting concept emerges: an idea that as one creates their own perspective of musical, cultural and self-understandings; music created by the artist is representative of an individual's take of the phenomenon within a particular cultural perspective.

This section has discussed influences external to the individual music teacher and learner. Musical structures created can be interpreted as a particular individual's musical voice representative of situated culture(s). It should not be the goal of western musicologists, ethnomusicologists, theorists, or musicians in general to study non-western musics for the purpose of dominance, assimilation or complete integration. The western framework has the potential for adaption, yet so much more can be learned from the culture under examination if it remains preserved – the differences against its western compromise noted and celebrated as a difference in perception. Within a social context, when each musician understands music can be shared in such a manner, an exchange dialogue of diverging interpretations can add to the creative bows of practitioners, with each unique perspective contributing to the larger body of cultural perspectives through the medium of music. The musical experience becomes shared, yet reformations in musicality sense remain individual. Any musical model can be interpreted as difference of perspective, and hence an 'outsider' to a particular view of culture can gain insight to how perspectives differs from their own.

Music Theory Education in Australian Universities

The final section of this chapter will focus on unpacking current website statements that describe music theory courses from universities around Australia. I have copied eight unit synopses from a university of each Australian state and territory. Each synopsis will be presented, following which will be my own discussions based on interpretative phenomenological analysis. Once all music theory course synopses have been unpacked in this manner, a descriptive comparison of each of my analyses will discuss points raised in relation to each other university. Within my analyses, I will be looking for themes that are either consistent or divergent from findings of the current study. This way, I will be able to determine how findings compare to current university practices. I will also be looking for the ways in which particular courses approach the teaching and learning of music theory and its application. Through my interpretations of each university course's pedagogical interpretation of music theory, it is hoped to further develop my approach to understanding the phenomenon and thus create a suitable educative approach.

The unit synopses selected are publicly accessible statements from each respective university website. Each synopsis describe courses offered that involve the teaching and learning of western music theory. From such statements one can gain insight to educative approaches adopted by each university. Such statements also reflect interpretations each university has made of music theory subject matter and how it can be employed to develop students' musical understanding. The next little section will now profile each university course synopsis (in alphabetical order of university title).

Australian National University (Australian Capital Territory)

The Australian National University (ANU, located in Canberra) offers a course entitled, "Music Theory and Analysis":

Music theory and analysis involves the study of how sounds are combined to achieve particular musical forms and effects. Music theorists and analysts examine musical structures in great detail to reveal the sonic and organisational fundamentals on which music is built, the techniques used to assemble them, and the broader meanings they can express. Research in this field is supported by the ANU Art and Music Library's extensive collection of musical scores and recordings, and by an ambisonic listening

suite and two computer music labs in which research students can work. (“Music Theory and Analysis”, 2014)

The synopsis begins with an overview statement followed by a description of practical and professional application. Leading from this is a statement of values held by the university and resources available to carry out the course. The overview statement defines the course as ‘the study of how sounds are combined to achieve particular musical forms and effects’, which adopts a structural stance to the subject matter through the use of the word ‘combined’. The next sentence describes the way theorists and analysts approach their study. Such a contextualising statement offers reason and practical, professional application to its study through the use of the words ‘examine’, ‘structures’, ‘organisational’, ‘built’, ‘techniques’, ‘assemble’ and ‘express’. The use of such wording also serves to reinforce their stance on music theory as a structural, malleable and interactive medium. In the proceeding sentence, the use of the words ‘research’, ‘extensive’, ‘ambisonic’ and ‘labs’ aim to instil confidence and generate excitement in the reader; approaching the teaching and learning of music theory as a science of music. Through listing ‘an ambisonic listening suite and two computer music labs’ ANU suggests a focus of the course: theory and listening as combinatory factors to music creation. This synopsis does not connect the ways in which the interactive medium of theory might be used to inform practice skillsets. It does generate excitement by making music theory study appear sexy, adopting what I interpret as a ‘futuristic’ or ‘cutting edge’ approach to delivery. The cultural influences of course materials are not stated explicitly.

Charles Darwin University (Northern Territory)

Charles Darwin University (CDU) offer a course focused on music language, whilst their description for intermediate music language did not provide much insight:

This unit runs for two semesters and aims to progress students from basic music theory and aural to a more advanced level. The unit can be undertaken as a follow on to MUS110, or is suitable as a first year musicianship stream for students with some prior knowledge. This is a repeatable unit held over two semesters. The content of the first semester continues into semester 2. (“Intermediate Music Language”, 2014)

A little more can be gained in the description of “Introductory Music Language”:

This preparatory unit runs for two semesters. It aims to provide students with a solid background in basic music theory, along with fundamental aural skills, enabling them to confidently and successfully progress to Intermediate Language of Music. Students do not need to have any prior musical experience. It is also particularly suitable for students not specialising in a music course, but who wish to choose a music unit as an elective. This is a repeatable unit over two semesters. The content of the first semester continues into second semester. (“Introductory Music Language”, 2014)

This synopsis describes a course that combines theory and aural methodologies. There is no further mention of music theory’s capacity to inform other musical skillsets. There are no comments that explicitly describe CDU’s stance toward teaching music theory, yet a learner-centred approach is hinted through comments that unpack how other courses link and suitability for particular students. Mentioning that the course is repeatable over two semesters suggests the course has received difficulty in the past, yet may simply be stated to ease the mind of potential enrolments. There is no mention of CDU’s stance on the development of musical thought. There is no mention of the thematic material used within this course.

Melbourne University

Melbourne University (MU) offers “Music Language 1: The Diatonic World” as an introduction:

An introduction to the elements and processes of voice leading during the period of triadic tonality through the study of species counterpoint and diatonic harmonic processes. Students are expected to attain a sound understanding of the elements and processes of voice leading and diatonic harmonic function within the Western musical tradition, and be able to write and sing fluent three-part contrapuntal textures, and four-part diatonic harmonic textures demonstrating their understanding of voice leading and harmonic processes through regular assignments. Students should also develop an awareness of counterpoint and harmony in composition through a close study of the thematic material of set works from the Western canon. (“Music Language 1: The Diatonic World”, 2012)

This synopsis addresses a similar experience to my own university teaching prior to undertaking the current study. Species counterpoint and diatonic harmony as concepts of musical thought are mapped in the next chapter (Figure 7.4 and 7.5 respectively). It is through these concepts that

the ‘elements’ and ‘processes’ of triadic tonality are learned and taught. There is a nice use of the words ‘sound understanding’, playing on interpretations of the former to influence the latter. ‘Sound’ could be interpreted to mean solid or grounded, or interpreted as the medium of music. To a reader, such language use suggests confidence in the university for the ability to teach and learn to understand sound and music. The practical application of understanding is expressed through composition, singing, and analysis. There is no further mention of music theory’s capacity to inform other musical skillsets. The thematic materials used within the course are from ‘Western canon’, which suggests that no contemporaries of western musics external to this are used as the basis of study. There is no explicit statement outlining pedagogical approach.

The University of Adelaide

The University of Adelaide (UA) offer “Foundations of Music Theory”:

Lectures will explore a range of theoretical aspects related to Western art music. The theory lectures will incorporate an analytical approach to thematic, harmonic, stylistic and formal aspects of various works. Theoretical topics will be explored through discussion of key concepts and through analysis of a range of set works by various composers including Bach, Beethoven, Chopin, Haydn, Mozart, Satie, Schumann, and Vivaldi.

Tutorials will be oriented towards application of the theoretical aspects of the course, and will enable students to gain first-hand experience of these aspects through problem-solving harmonization exercises and analysis of relevant repertoire. (Foundations of Music Theory”, 2014)

This synopsis outlines a lecture and tutorial approach to the teaching and learning of music theory. Within the lecture setting, the subject matter is unpacked and discussed using ‘an analytical approach’, using ‘Western art music’ (where a definitive list of influential western composers to the course are provided). No other mention is made toward music theory’s connectedness to other musical skillsets. The tutorials are aimed at providing application to the lecture content. The means to this end are described as ‘problem-solving harmonization exercises’ – which suggests facilitation and development of musical thinking (‘problem-solving’) processes, and through ‘analysis of relevant repertoire’. The lecture and tutorial format suggests concurrent learner-centred approaches to music theory delivery: socially angled lectures

(which could be aesthetically oriented) and individually angled tutorials (which are described as practically oriented).

The University of Queensland

The University of Queensland (UQ) offers a series of “Music Techniques” courses. The following synopsis is from the final unit of the course:

This course comprises:

- Independent learning of skills and techniques used in 20th-21st century Western art music
- Applied learning of these techniques through composition, improvisation, performance and analysis of music media (audio/video and notated scores)
- Critical engagement with musical applications of these techniques
- Collaboration to create a cross-genre cover version employing integration of these techniques
- Discovery of music techniques' use in diverse music genres

(“Music Techniques 4”, 2014)

This synopsis is a list that describes five dimensions to the course and each dot point revolves around ‘acquisition’, ‘application’, ‘interpretation’, ‘collaboration’ and ‘discovery’ of musical skills and techniques. It describes a course that values independent learning and team building from the first and fourth points. The second dot point begins to highlight themes similar to a contention of this current study: that understanding western music theory enables the undertaking of any musical activity. The third dot point suggests a sensitivity to the multitudes of interpretative approaches to music, learning of which facilitated through ‘critical engagement’. The fourth and fifth points hint at practice-based portfolio generation of ‘a cross-genre cover version’, which suggests the skill of arrangement is considered a priority. There is no explicit description of how UQ facilitate the development of musical thought, only concentrating on skills and techniques.

The University of Sydney

The University of Sydney (US) offers “Understanding Music”:

Understanding Music is a *compulsory* unit of study required as part of the major. This 3000 level unit presents you with many ways of engaging in the analysis of music as well as many ways of understanding how we perceive music. The goal is to require you to reconcile often-conflicting interpretations and explanations of the experience of music across many traditions of musical practice. (“Music”, 2014, para. 13)

This synopsis articulates music theory’s value as a core unit of study within its first sentence with an italicised use of the word ‘compulsory’. It outlines particular university course structure; the ‘3000 level unit’ in this case refers to a third-year subject. US offers this course to third-year students, which gives an indication to the level of abstract thinking required of this particular course. This thinking is facilitated through ‘engaging in the analysis of music’ whilst attempting to understand ‘how we perceive music’. The articulated goal to ‘reconcile often-conflicting interpretations’ suggests musicology, ethnomusicology and reviewing as key values held by US. There is no explicitly stated methodology to practical application of this music theory course, although the ‘experience of music across many traditions’ suggests cultural dialogue through understandings of the musical medium.

The University of Tasmania

The University of Tasmania (UTAS) has a “Music Theory” unit:

This enables you to study the basic structures and procedures underlying tonal music, through the analysis and understanding of formal divisions within major pieces from the western canon of music. Exercises in part writing and analysis of music are designed to stimulate the development of analytical thinking about music, and you are expected to demonstrate the use of appropriate analytical language, symbology and terminology. Theory studies may be from a classical or a jazz/rock theory perspective. (“Music Theory”, 2014)

This synopsis describes a structural based understanding of music theory through the ‘analysis and understanding of formal divisions’. Such formal divisions have been provided in the proceeding chapter. Understanding is described to be expressed through ‘exercises in part writing and analysis’. There are no further descriptions of music theory’s capacity to inform

other musical skillsets. It is really interesting to see UTAS describe the design of their exercises as facilitating the development of ‘analytical thinking about music’. Such a description resonates with musical thinking, yet remains within an analytic methodology with the requirement to appropriate the use of ‘analytical language, symbology and terminology’. Such wording suggests a particular analytical approach to music theory, yet the inclusion of studies from either ‘classical or a jazz/rock theory perspective’ suggest multiple cultural approaches.

The University of Western Australia

The University of Western Australia (UWA) also offers a “Music Language” course:

This unit is the third in a three-semester sequence that develops core theoretical, musical and perceptual skills. The unit proceeds beyond the focus upon music of the common practice period, which was studied in MUSC1321 Music Language 1 and MUSC1322 Music Language 2, and proceeds to a study of the language and perception of post-tonal music. As before, the unit comprises two mutually supportive components—(1) harmony and form; and (2) aural. While these two components are taught and assessed separately, they represent an integrated whole in which strong interconnections are clearly defined. The broader aim of this three-semester program is to support the acquisition of musical fluency and the capacity for independent learning, and to produce musically literate students who are able to apply the skills they have acquired in any professional situation. (“Music Language 3”, 2014)

This synopsis describes a sequence of units, of which this is the last. It identifies developing ‘core theoretical, musical and perceptual skills’, which suggests links common to musicianship as described in chapter four. From this perception, the sequence progresses from the ‘common practice period’ through to ‘post-tonal music’. This unit is also described to contain a combination of music theory and aural approaches and strongly resonates with the second contention of the current study, that understanding western music theory enables the undertaking of any musical activity. This is particularly visible through the last sentence of this synopsis, which also suggests a learner-centred approach. There are no explicitly stated descriptions of thematic materials or cultural influences used throughout this course.

Emergent Themes

This section was aimed to provide a general view of music theory courses offered at Australian universities and how their presentation might affect their interpretation. In comparing the analyses of each of these unit synopses, four main themes have emerged that underlie the commonalities and difference between each. These themes emerged as I analysed my own analyses as per IPA practice. The themes are all based around how each university adopted particular standpoints on certain aspects: Musical Thought, Connecting Qualities, Thematic Materials and Pedagogical Approach.

The ways in which universities interpreted musical thought to occur emerged as a first theme. ANU viewed music theory as a structural, malleable and interactive medium. MU offered to teach and learn to understand sound (not ‘music’). UA and UWA suggested musical thinking to be facilitated through analysis and problem-solving harmonization exercises, with UTAS positing a similar idea with ‘analytical thinking about music’. US merely give an indication to abstract reasoning required of the subject, whilst CDU and UQ do not give any account of their stance regarding the nature of musical thought.

The second theme to emerge from this data is university stances to the connecting quality of musical structure to other musical skillsets. The UQ and UWA approaches both strongly resonate with the connecting qualities of musical structure that is the second contention of this thesis. Other universities mentioned only *partial* connectivity, siting compositional, analytical, performance, musicological, ethnomusicological or aural connections separately (ANU, CDU, MU, UA, US, UTAS). This list in itself demonstrates the interconnecting capacity for musical structure.

The approach to thematic materials used within a particular course emerged as a third factor to music theory courses. UQ and US suggest sensitivity to cultural dialogues and influences in their materials. UTAS stay within a western standpoint yet remains open to multiple stylistic influences for resources. MU and UA both use strictly western art music for resources. ANU, CDU and UWA make no mention of this aspect.

The final emergent theme from comparisons of synopses analyses was pedagogical approach. Lerner-centred approaches were suggested from ANU, CDU and UQ. UA and UWA both described a bifocal approach to their implied learner-centred course structure, which resonates

with discussions made earlier within this chapter related to a resultant, integrated pedagogy. There was no mention of learner-centred approach from MU, US or UTAS.

Music theory's structure contains interactive musical models that can accommodate the different interpretations people hold toward the phenomenon. This structure is fluid in that it also accommodates the multitude of interpretations held by educators: as each have varying styles of pedagogy and approach. It follows to reason that an educational approach would need to be built with a similar feature in mind. Musical thought and its connecting qualities are two important aspects of subject matter, which will be discussed within the next section. Thematic materials to use and pedagogical approach appear as two more aspects required of an educative approach: elements of the subject matter to be contextualised within a greater framework, and personal artistic development of the particular individual(s) situated within culture(s) as a focus of delivery.

As discussed in chapter four, structures inherent to music theory teaching and learning can be used to contextualise musical practice. As discussed in the previous section, musical practices contain individualising, social and cultural contexts. Therefore, demonstrating the practice of structures inherent in music theory teaching and learning address two sides required in an educative approach. Regarding pedagogical practices suited to the university environment, such a multi-layered approach could also be aimed to foster each student's knowledge of the material and to allow discursive understandings to be accepted and celebrated within the classroom context. This would follow ideas similar to Witchell (2001), "teaching strategies should be built on principles of inclusion, both in the recognition of cultural diversity and in the way that making music is designed around the individual learning needs of the pupils" (p. 204). This can be achieved by providing multitudes of ways artists (with varying cultural backgrounds) can demonstrate individual understandings of greater musical frameworks.

As elucidated by Kwami (2001), all forms of music should be accepted as to consider the possibilities of discursive cultural understandings, "Practical activities, particularly those of a creative kind, should involve music making which calls upon pupils and students to draw fully on their own experiences. These experiences may be entirely outside the control of teachers and include musics that are absorbed from the media" (p. 144). Group portfolios could be made by students which feature their musical understandings or explore their musical thoughts as compositions, pedagogical exercises, improvisations, realisations, arrangements, or whatever

may be deemed relevant to each student toward their individual musical goals. In the words of Paynter and Aston (1970),

Even if a teacher finds himself working in a school as the ‘music specialist’ or ‘science specialist’ he must not let this cause him to forget his first duty: the education of the whole person. He makes a contribution to this ‘total education’ through the medium of his own subject. Moreover, he must not gear his work only to the abilities of the gifted few, but should find ways of using his specialist knowledge to serve the education of all the pupils in his class. (p. 2)

The issues discussed within this chapter concerning pedagogy have deepened my understanding of teaching and learning music theory at university level. In terms of pedagogical delivery, a multifaceted approach has begun to emerge through the comparison of university approaches. These findings will be expanded and built upon in chapter nine. The educative approach has been contextualised from my own autoethnographical exposition in chapter four, which focuses on the formation of individual musical thought. In order to expand my own understanding of musical perceptions, my findings from chapter four were compared with results from a student survey in chapter five. In order to further such developments, the current chapter has explored music education paradigms, social and cultural identity formation and influences and music theory course synopses currently in place. There remains the exposition of the subject matter of music theory, in which the next section aims to define.

III – Visualising the Phenomenon

7. A Conceptual Nexus of Western Pitch

In this chapter I will show my visual approaches to teaching and learning western music theory. This chapter is framed from my perspective of an embedded experience as a university music theory educator. Such a framework has been used as I bring particular personal and professional practice experience to questions being considered in this research thesis. Such questions centre on a perceived lack of higher order connectivity between concepts taught within the subject of music theory. This chapter, by outlining visual representations of pitch structures to build to a higher-order level; demonstrates both increasing levels of musical organisation and my thinking about how theoretical concepts can be represented. There will be several levels described throughout this chapter, and examples of concept visualisations will be given at each level. Multiple levels are given, exploring foundational intervallic concepts (level zero), through to constituent components of diatonicism (level three). This chapter will then expand upon these foundations and move from interactive systems of romanticism (level four) through to mechanisms of chromaticism (level six). Subsequent and subordinate music theory models will be described as each figure is explicated; often with descriptions of how concomitant musical concepts interlace at particular levels. Not *all* musical devices have been deeply unpacked in this short chapter; concepts such as melodic figurations, secondary dominant chords, modal exchange and mixture could all be expanded and reflected upon in great detail; yet it would require a separate publication to do so properly. It is hoped that with the current explanations, one might be able to extrapolate relevant locations of such tools to suit one's needs. This discussion targets university music theory educators and students to provide an overall bigger picture to the nonlinear subject of music theory.

The reason behind my visual approach is to have the bigger musical picture presented to learners of western music theory so that their educational pathways can be contextualised using a visual supporting guide. Such a supporting guide can facilitate big-picture *and* smaller concept thought, as bigger-picture concepts can outline the jigsaw to smaller-picture components that students learn throughout a university music theory course. An educator can provide insight into various sections or focal points of the puzzle; groupings of ideas or skills (and how they might be used to explore music); or even help to guide students through paths previously explored by musicians

of differing styles (ideally, musicians the student may find inspiring). Visually representing information can greatly assist the teaching and learning process. Traditionally, music has been visually represented through the use of western notation.

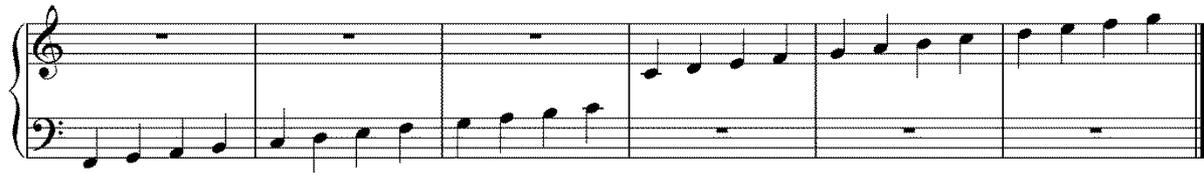


Figure 7.1: Western music notation: the traditional tool for music theory.

Within music theory, notation is a powerful tool: score excerpts, when coupled with recordings, provide adequate context for communication of musical ideas at a surface level. In saying this, when more complex and abstract ideas are being discussed, notation can be a hindrance rather than help; “A truly useful music theory curriculum should start with aural and oral musical structures and introduce notated patterns only as students develop audial readiness” (Taggart, 2005, p. 346). Compounding musical concepts are usually translated into some form of analysis methodology, which requires to be learned concurrently to musical structures. This means analysis can easily become the focal point of music theory teaching and learning. This deviation of educational focus means the development of musical thought is missed as the underlying purpose of its teaching and learning. Adding another layer of unfamiliar syntax is not the solution to the teaching and learning of western theory. The concern of educational delivery is real: if notation is not the answer, the question becomes, ‘what can be used as visual stimulus?’ Music theory is not simply notation – the subject goes beyond this into exploring the structural nature of the musical phenomenon. There should be a visual approach so abstract musical concepts can be brought to the visual realm to represent the very nature of their own behaviour. This way, students will be able to see how theoretical ideas interlink, and can concentrate on methods to adapt to their own developmental understanding of structural components.

Based on my personal and professional experiences, in order to teach music theory from a learner-centred context, the educator needs to relate to students’ prior understandings of the subject. In order to design a pedagogy that enables student-centred learning, the pedagogy should allow students to derive their own meanings of the subject within their own personal contexts. Lapidaki (2007) discussing compositional pedagogy, illustrates this concept:

It is critical that the music teacher be seen as the facilitator of students' compositional processes helping students explore and continuously discover their own creative personalities and, thus, empowering their personal involvement with music. Any creative work needs individual attention and encouragement for each vision and personal experience are different. (p. 107)

One difficulty of teaching at university level is that there are anywhere from thirty to three hundred different backgrounds and understandings. Providing a standard reference of the bigger-picture framework is, in such contexts, challenging but not insurmountable. The problem for the educator is how to get students to understand the phenomenon from a consistent and accurate viewpoint yet enable students to create their own unique understandings of the phenomenon.

Lupton and Bruce (2010) recommend, “that more work be carried out in identifying a range of pedagogies of music composition, both theoretically and empirically” (p. 272). Music theory provides a basis for understanding the phenomenon of music, in which the practice-based skillsets are outputs. One way an educator might facilitate student-centred learning in this context is to provide the bigger picture goals or checkpoints of learning; yet allow the students to create their own paths toward the destination. In order to achieve this, the provision of a visual framework of the information that pieces together the complete jigsaw puzzle of the phenomenon might be used; then allow time for students to explore and piece this framework for themselves. For example, one of the hardest things I found as an educator were ways to teach how musical foundations interlink – how scales, chords, keys, intervals, notes and so forth associate – without making it sound terribly confusing. I came to a solution by mapping out the relationships of concepts visually, as shown in Figure 7.2:

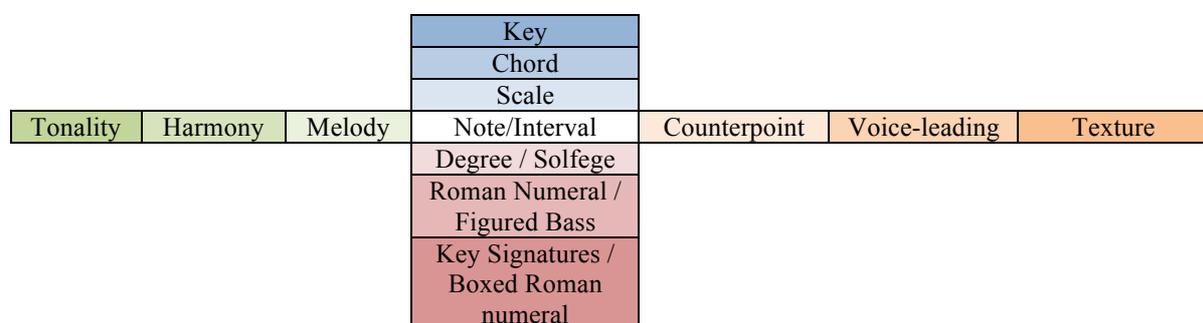


Figure 7.2: An early concept model.

In Figure 7.2, four branches stem outwards from a central foundation of note and interval; the ‘larger’ the concept, the further away from the centre it is located and a darker shading of colour given. The blue upward stem refers to formal constructs of pitch materials. The red downward

stem refers to analytical classification systems that govern concepts within the blue stem at respective shadings of colour. The green stem to the left references at which level pitch materials alter within musical structure and at what level of idiosyncratic preference is being utilised. Lastly, the orange stem on the right of Figure 7.2 refers to governing systems of interaction between pitch materials at each level.

This early concept model in Figure 7.2 is an example of a visual approach that covers basic foundations of music within a western classical ‘diatonic’ framework, for more advanced musical understandings such as chromaticism or traditional jazz; other concept maps can be used. The point here is to demonstrate interrelationships of concepts visually. Such a visualisation can assist and give reference to many questions faced as a lecturer of music theory by students who struggle to obtain personal relevance to the information being taught.

With a visual representation of structural concepts, an educator is able to provide examples of how these ideas relate to each other to help build understandings. The path taken through concepts may be left entirely to the discretion of the educator and their individual music education philosophies. In this way pedagogy can be conceived by simply following the most logical path as seen by the instructor. With these concept interrelationships displayed as such, a student may also find it easier to navigate information when exploring the individual knowledge components that comprise each musical concept. For instance, an educator might be giving a lesson on the construction of chords; following a lesson on how major and minor scales are made. In this scenario, the educator could demonstrate how a major-quality chord is assembled through intervals, and then allow the students to find other chords of similar quality within the major scale by whatever means they see as relevant (through instrumental practice, perhaps). Such information is usually simply stated due to timing constraints (as it is easy to say, ‘This chord occurs at these particular scale positions’); yet this does not allow students to associate any form of personal relevance to individual musical goals. In saying, ‘this chord occurs at these points’ its delivery only addresses surface learning. It does not allow for students to interpret the material in terms of what it means to them. In order to develop musical thought, time is required for students to interpret information through hermeneutic dialogue. As such, personal exploration time might need to be given to students in order fully understand how similar chordal qualities within different scale contexts can yield differing musical meanings.

The musical concepts discussed in this chapter are devices of pitch and I will show how visual representations interrelate to form an underlying pedagogical spine that may be used as a

reference. Temporal domains such as tempo, meter and rhythm are of a different dimension, yet interlink with such pitch mechanisms. According to Gordon (2005), “an understanding of rhythm is crucial for understanding the tonal dimension of music... students should be given informal guidance and formal instruction in rhythm at least concurrently with, if not preceding, such guidance and instruction in melody and harmony” (p. 14). This chapter does not touch upon rhythmic elements of western music theory, yet all elements discussed are harmonious with such teaching and learning.

There are varying levels to the pitch concepts discussed in this chapter, all of which have been extricated from my personal engagement with the material and triangulation of several prominent textbooks pertaining to the field (Aldwell, et al., 2011; Kotska, 2006; Gauldin, 2004; Levine, 1995; Boling, 1993; Piston, 1941; Macpherson, 1920). This unravelling of musical concepts is based upon the commonalities found between all pedagogical sources used with concern to pitch mechanisms. It may be of interest to note that the content within the traditional theory textbooks, although spanning ninety-one years, contain similar ideas within. For example, the textbooks by Levine and Kotska are specialty subjects of jazz and modernistic theory respectively; yet still hold common ground to the traditional ideas. The main differences between the texts were the methods by which content was arranged and the examples that were used. Undertaking each textbook’s course allowed me to identify pedagogical subject correlations from these multiple perspectives and gain a clearer picture of the overarching structural concepts and frameworks of pitch constituent to western music theory.

Visual Aids to Music Theory Education

Depicting fundamental concepts of music in a visual manner can assist students with their comprehension of topics. It can also help educators by providing students with a consistent reference framework. Many more visual aids than what is described in this chapter can be developed for meeting specific educational requirements. The focal point to the following aids is the connection of summarising concepts for assistance with higher-order meaning making. A particularly powerful approach is to use aural mechanisms concurrently within music theory lectures; “Indeed, Music Learning Theory dictates that ear training and written theory be combined” (Taggart, 2005, p. 345). The two texts by Lars Edlund (1963), *Modus Vetus* and *Modus Novus*; and Ron Gorrow’s *Hearing and Writing Music* (2004) provide excellent pedagogical support to the unification of music theory and ear-training. Music is multidimensional: concepts are interrelated, and by no means linear. This means that the education thereof should not progress in a linear fashion, but be introduced and built upon over time in a circular manner (Thomas, 1970). Any component of musical structure that could be interpreted in an idiosyncratic fashion cannot be cast in stone, or approached in a dogmatic fashion. In consideration of this trait, overarching concepts have been mapped in order to demonstrate governance of such smaller components of musical structure. Figures in this chapter were created using an interactive web-based presentation tool (Prezi) under an education licence.

There will be several levels described throughout this section, and examples of concept visualisations will be given at each level. Multiple levels are given, exploring foundational intervallic concepts (level zero), melodic concepts (level one), harmonic concepts (level two), through to constituent components of diatonicism (level three). I will then expand upon these foundations and move through interactive systems of romanticism (level four), modality (level five) and finally to concepts of chromaticism (level six). Subsequent and subordinate music theory models will be described as each figure is explicated; often with descriptions of how concomitant musical concepts interlace at particular levels. Not *all* musical devices have been deeply elucidated in this section; structural components such as melodic figurations, secondary dominant chords, modal exchange and mixture could all be expanded and reflected upon in great detail; yet it is not my intention to provide a prescriptive textbook. It is hoped that with the explanations provided, one might be able to extrapolate relevant locations of such components to suit one’s needs. This discussion targets university music theory educators and students to provide an overall bigger picture to the nonlinear subject of music theory.

Level 0: Intervallic Concepts

At the crux of pitch mechanisms, are **note** and **interval**.

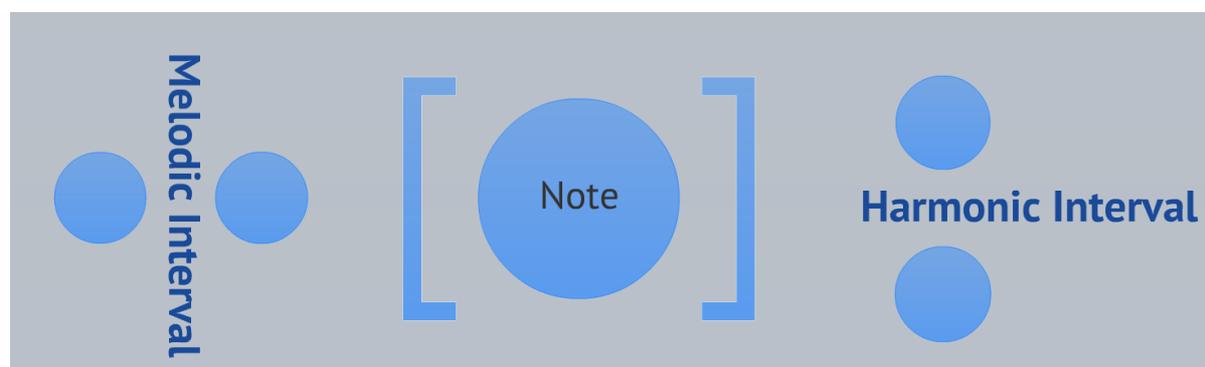


Figure 7.3: The note and basic interval constructions thereof – melodic and harmonic.

Figure 7.3 demonstrates the foundational concept of note and interval – both melodic and harmonic. The word, ‘note’ is often interchangeable with the word, ‘tone’. In practice this is absolutely fine, yet there resides a slight difference. Although the words are an anagram of each other, the word, ‘note’ refers to a single pitch that has no other musical reference point. A tone implies the opposite – it is a note that is a part of a larger musical organisation. Of particular interest, the name tonic (stemmed from tone) is given to the pivotal note in an organised collection: “the *tonic*, the central note of the key, forms *the point of departure* from which the other tones move and the *goal* to which they are directed” [their italics] (Aldwell, et al., 2011, p. 5). Further studies into notes can come into play throughout a given semester.

Intervals are ‘distances’ between notes, with blue circles representing any given note, and proximal alignment representing the two types of interval. Melodic intervals are sequential and harmonic intervals are simultaneous. A typical introductory lecture would then stem into the different interval qualities, of which aural and notational identification processes would be unpacked. Learners could be asked to find idiosyncratically preferred pieces that contain all of the various interval qualities. The lecture could either undertake aural or analytical activities throughout; the key learning focus for the student is to understand the relationship between note and interval. Intervals are paramount to understanding greater musical ideas, they are the building blocks to larger musical concepts, and have subtle attributes attached: numeric size determines how many semitones are present between the notes; quality gives an indication to intensity (idiosyncratically understood) and inversions help direct motion in terms of relative stability with regard to proximal notes. Interval familiarity should be built over time as all theoretical models can be unpacked and explained as sets of melodic or harmonic intervals.

Level 1: Melodic Concepts

Stemming out from the interval foundations; the concepts of **scale**, **melody**, **degree/solfege** and **counterpoint** relate to each other on the melodic level.

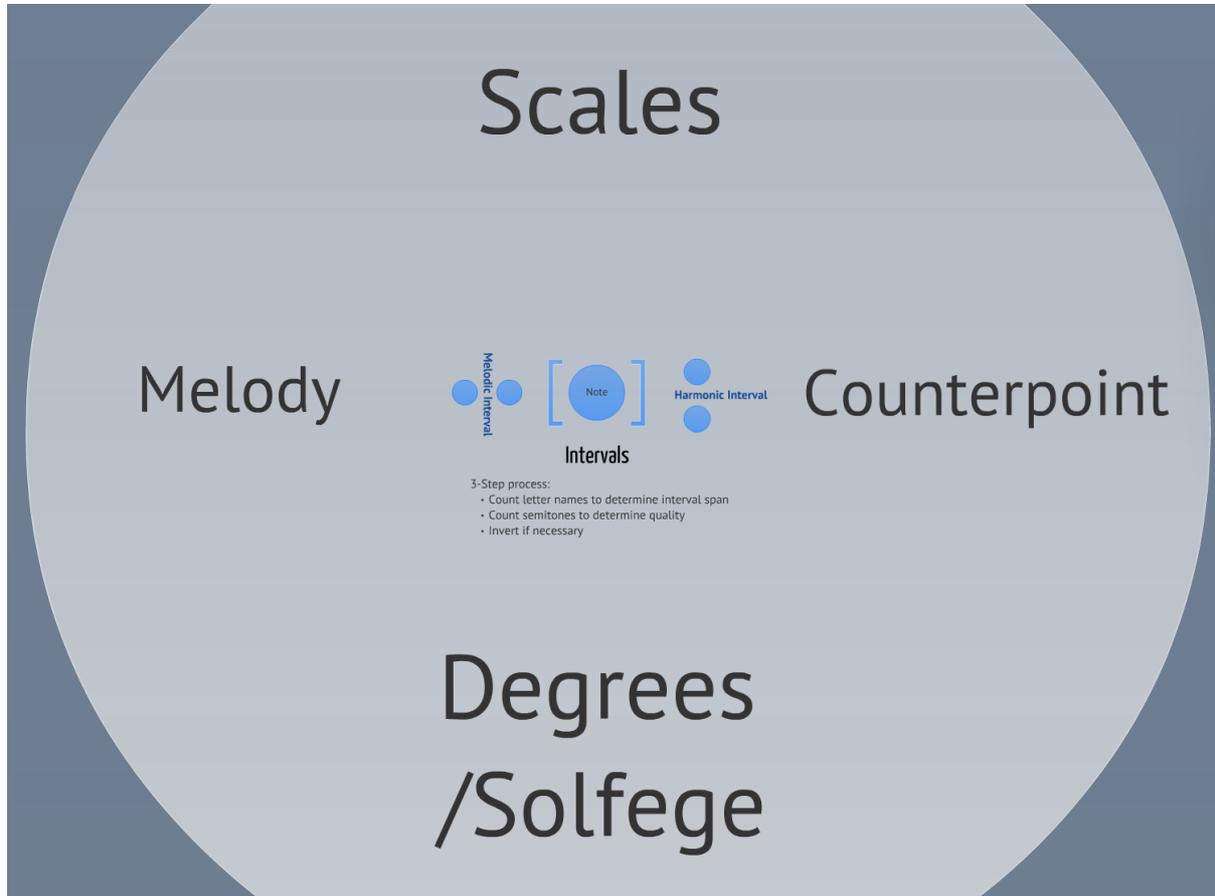


Figure 7.4: Interrelationships of melodic concepts (Figure 7.3 lies in the middle of this as an inner level).

Scales are a collection of melodic intervals; likewise, so are melodies. The difference between the two is that scale sets are formalised: they are specific sets of melodic intervals with specific rhythmic durations, often used as a reference for other musical activities. For instance, any major scale is constructed from a given reference note by adding the following melodic intervals to the set: major second, major third, perfect fourth, perfect fifth, major sixth, major seventh.

Alternatively, one can use a particular melodic pattern using both major second (tone), and minor second (semitone); for example: tone, tone, semitone, tone, tone, tone and semitone. In either case every note of any given scale is usually played with a consistent rhythmic value – for instance, all notes may be quavers at M.M = 60.

Melody can also be defined as a collection of melodic intervals within the duration of a phrase. Unlike scales, melodies are open and can be any collection of any melodic intervals with any

rhythmic duration. There is an idiosyncratic humanised element to melody: each can be different and can heavily influence the music of which it is a part, and a memorable melody can make a lasting impact.

Degrees are an analytical tool used to signify a note's relative position within a scale. Solfege is also a good substitute for degree: it all depends on the nature of the particular educator. This sector of the melodic domain is particularly concerned with the way in which one can translate and relate order to language or numeric systems from a melody, and either method makes this possible. For instance; in C major, the melodic progression of C-F-D-G-C could be represented as $\hat{1}\hat{4}\hat{2}\hat{5}\hat{1}$ (degrees), or Do-Fa-Re-So-Do (solfege). The primary degrees of a scale are the tonic, dominant and subdominant – the first, fifth and fourth degrees of a scale respectively. In solfege, these primary tones are Do, So and Fa.

Lastly, counterpoint is a system of interaction: it is the link between melody and harmony. The concept of counterpoint involves superimposing melodies over one another; which can be achieved simply by including harmonic intervals. Conversely, the concept also combines melodic and harmonic intervals to construct interdependent melodic lines. Looking at overarching confines of the concept, counterpoint is merely the governance of two to four interdependent melodic lines. This has a different effect than voice-leading, which tends to construct interdependent melodies with reference to a bass line. The system is not necessarily specific to the common-practice period. Each musical style has a particular set of melodic preferences as determined by social mediation. There has been debate over the relevance of counterpoint within university curricula (Follet, 2008), with opponents usually citing lack of modern-day relevance and uninteresting learning methods. However, counterpoint need not be a chore; when fully understood is “one of the most powerful shaping forces in music” (Toch, 1977, p. 135). Its primary focus is to understand how one can weave horizontal melodic lines with harmonic congruency to form music that does not sound like a jumbled mess. The researcher understands counterpoint as a method to design musical frameworks of intersecting melodic lines that are referenced to and from each other – a melodic tapestry. Seeing the concept in this manner can allow a musician to understand the compositional purpose to counterpoint similar to the way a graphic artist might sketch underlying shapes that frame the eventual detailed picture. The framework may be altered or broken as the creative process continues: nothing in music is ever dogmatic in its approach.

Level 2: Harmonic Concepts

Stemming out from the melodic domain; the concepts of **chords**, **harmony**, **figured bass/Roman numerals** and **voice-leading** relate to each other on the harmonic level.

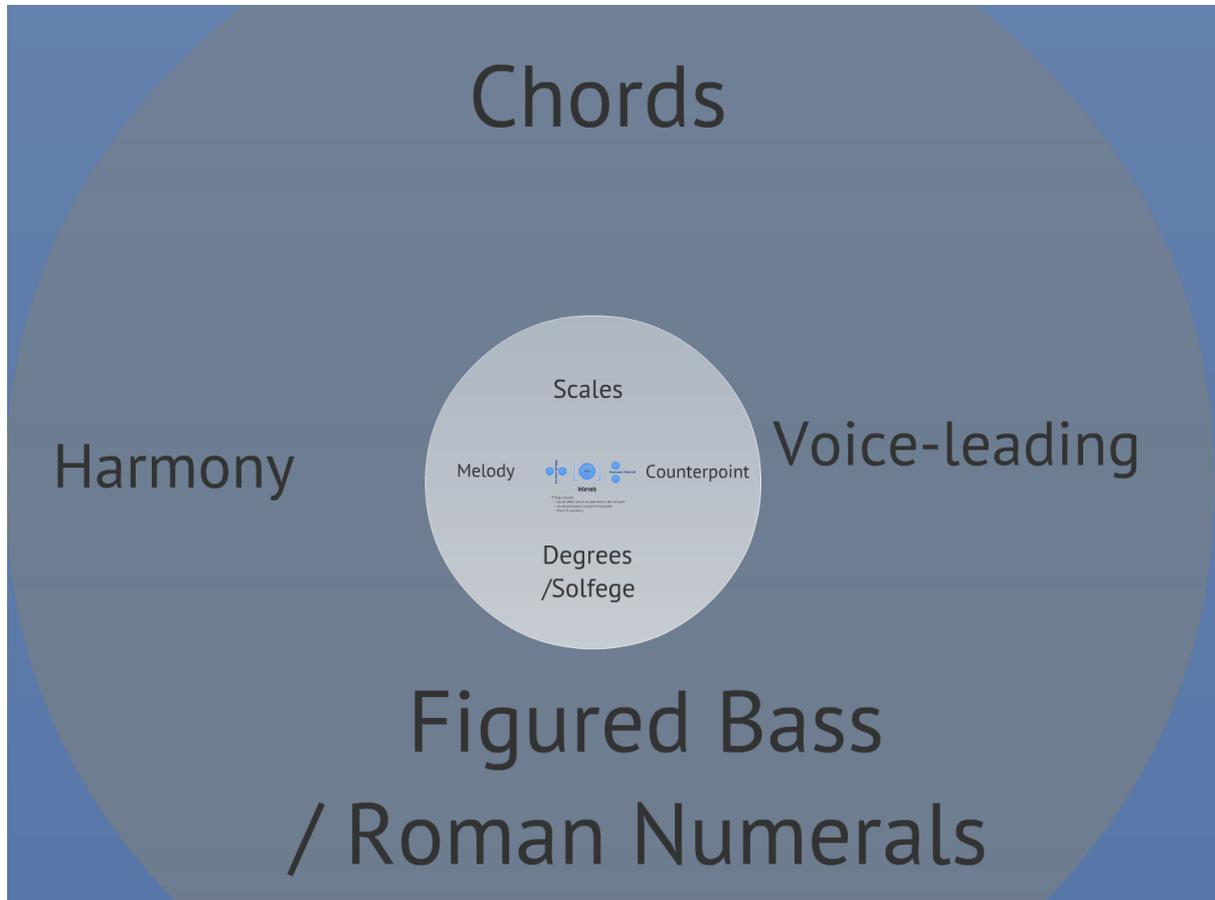


Figure 7.5: Interrelationships of harmonic concepts (Figure 7.4 resides in the middle of this as an inner layer).

Like scales, chords are simply formal systems of intervals that can be used as tools for navigating musical realities. Where scales are specific sets of melodic intervals, chords are specific sets of harmonic intervals. On single-voice instruments (such as a clarinet), these frameworks are represented as arpeggios. Each chord gives a certain flavour to a greater musical context. Chords are merely reference frameworks of harmony – they in themselves do not make a piece of music – the way in which an artist understands each chord in given musical contexts, and the manner in which they are utilised are more important to the development of a musician. This infers that students must be given time to understand their own relationship between each chordal framework in order to understand methods of utilisation, as well as any personal preferences that may be held.

Harmony can also be defined as a collection of simultaneous harmonic intervals within the duration of a rhythm. Unlike chords, harmonies are open-ended and can be any collection of any harmonic intervals with any collective rhythmic duration. Collective rhythmic durations are usually gauged by the length of the bass note present. Harmonies are usually gathered within the context of a given bass note. There is an idiosyncratic humanised element to harmony: selection of harmonic materials, rhythms and flow between harmonies can heavily influence the music of which it is a part.

The flow between harmonies is governed by the system of voice-leading, which follows similar stylistic constraints to counterpoint. Melodies are supported by harmonies stemmed from a bass note reference point as opposed to interwoven against all other melodic lines present. One voice leads as others play a supporting role and can be functional progressions or non-functional sequences. Voice-leading governs the flow of harmonies numbering four or greater melodic lines. Also, for pieces with greater than four melodic lines, counterpoint and voice-leading systems may be superimposed upon each other. In order to do this, one would need to write, for example, three bass lines in counterpoint; then create voice-leading harmonies with reference to each bass line. Advanced understanding of each system is required in order to do this, but it is entirely possible to create these types of textures. On the other side of things, diatonic sequences provide easy-to-remember non-functional harmonic progressions between tonic and dominant; their mechanised structure providing a unique sound that can temporarily break away from traditional tension-release tendencies.

Roman numerals behave in a manner similar to degrees; as an analysis tool they objectively identify which chord structure is being heard at any point in time. The number indicated by its Roman numeral equivalent signifies the scale degree contained as the bass note of a chord in root position. However, not all chords used to harmonise are found in its natural, root position. Chordal inversions are often adopted and are important connecting mechanisms for musical flow. In order to determine which particular note is the reference for the entire support structure, figured bass is used with the analysis. These figures are simply numbers written next to Roman numerals in super- and subscript to state intervals present above the bass note being referenced. These figures tell the musician which chordal inversion is being used to support a melodic line; whilst also giving insight into both voice-leading and counterpoint structures occurring within the music. Without this concept, all inversions of chords would be classified in the same manner: when their nature states that this is not the case.

Level 3: Diatonicism

Encapsulating the harmonic and melodic domains is that of tonality; where the concepts of **key / tonal centres, tonality, key signatures / boxed Roman numerals** and **texture** interrelate.

Diatonicism can be defined as musical ideas; ‘of the scale’, ‘pertaining to the scale’ or, ‘in terms of one scale’.

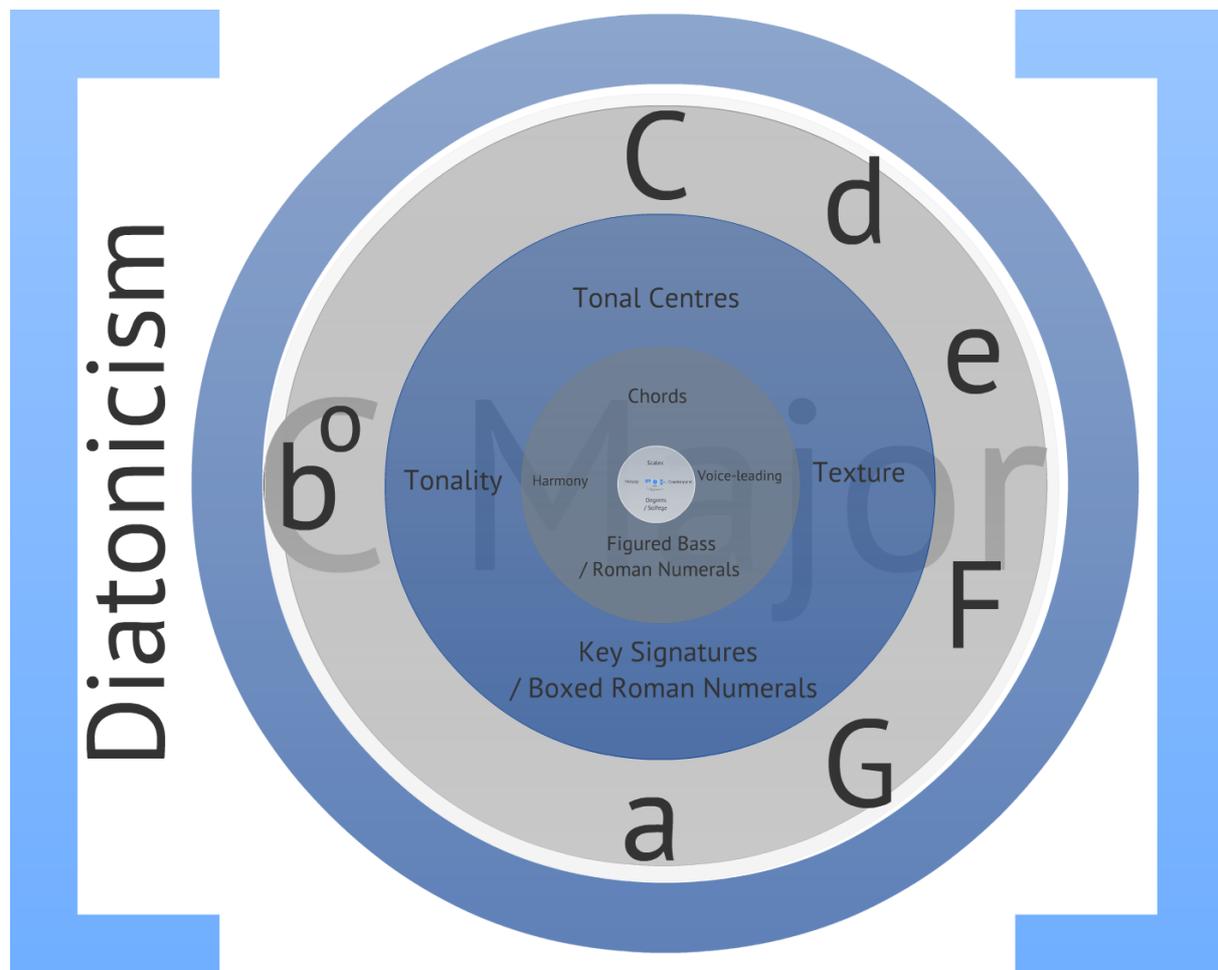


Figure 7.6: Interrelationships of tonal concepts (Figure 7.5 is situated within this as inner levels).

The domain of diatonicism focuses on larger concepts that are also inter-related, yet interdependent upon the first- and second-ring concepts in order to exist. Looking at this relationship structurally; melody may be described as music’s ‘horizontal’ dimension (x-axis) and harmony as music’s ‘vertical’ dimension (y-axis); temporal structures propagate against pitch at the perpendicular (z-axis); tonal centres encapsulate all three of these dimensions (making a fourth structural dimension – an atmosphere).

Within diatonicism, single tonal centres are utilised as a means to develop sections, and tonal centres transition to other tonal centres via modulation. The main idea to diatonicism is that the

musician keeps creative expressions within the confines of one musical atmosphere: one may wish to explore one particular aspect in detail as a composer; or improve their understanding of a key in a practical sense as a performer. Everything that happens musically has reference in or about a singular tonic, before proceeding to the next. Diatonic writing has been used regularly in contemporary and popular music, as pieces of these styles often remain constrained within a single tonal centre.

Figure 4 shows the C major scale in full, as letter names. Upper-case letters denote a major quality; lower-case, a minor quality; lower-case with a superscript circle: diminished quality. The position of twelve o'clock determines the major tonic of this scale and proceeding in a clockwise motion traverses up the pitch collection. The position of six o'clock signifies the minor tonic of this diatonic set and likewise, navigating the circumference in a clockwise manner demonstrates the tonal composition of this relative minor scale. In terms of translating this information to Roman numerals, a student would simply begin at whichever tonic was necessary and substitute the letter for I or i; continuing the substitution of degrees and chord quality to replicate the upper- and lower-casings of the English letters.

Tonal Centres (also known as keys) are the names given to musical atmospheres. They each contain a scale as a melodic, theoretical spine. Upon this spine, chords are built: it is not just these two that make a tonal centre; it is the interplay within the created atmosphere: arpeggios, scales in thirds, scale in fourths, etc. all materials that can be formed using the combinations of first- and second-level domains constitute to the atmosphere that is known as a tonal centre. There are twelve major tonal centres and twelve minor tonal centres available to creatively draw from in the traditional 'common practice' western art music principle palette. There are also twelve tonal centres available for any given diatonic mode, yet it is recommended from personal experience not to venture into modality until after traditional foundations have been understood.

Tonality can be defined as a collection of simultaneous melodic and harmonic concepts within the duration of musical section. Unlike specific tonal centres, tonality is open and can be any collection of any combination of melodic and harmonic concepts within any rhythmic duration. Tonality is usually gathered within the context of the first chord of the scale: the tonic. All other chords within a given tonal context contain a sense of gravity in terms of intensity and tendency about the tonic chord. There is an idiosyncratic humanised element to tonality: each and every listener will interpret and relate tonality from musical and non-musical lived experience. For instance, conductors utilise their personal musical understandings of tonality alongside historical

contextual sources in order to communicate overarching blending and shaping ideas to their orchestras – which is why each orchestral interpretation is different.

A section of music is said to have modulated tonality once a new relationship between dominant and its tonic has been perceived. As the context of tonality is based upon the most ‘resolved’ chord of its series: the tonic; boxed Roman numerals are an analysis tool to denote a tonal centre based upon a designated tonic. The tonic represented by a boxed Roman numeral is related to the tonal centre preceding it. For instance, a piece begins in C major: $\boxed{\text{I}}$; then modulates to G major: $\boxed{\text{V}}$. G major is now the new tonic chord $\boxed{\text{V}} = \boxed{\text{I}}$. G major: $\boxed{\text{I}}$; now modulates to E minor: $\boxed{\text{vi}}$. E minor is the new tonic chord $\boxed{\text{vi}} = \boxed{\text{I}}$. This system is required to be flexible and modular, as often composers work within tonal areas that are not clearly defined by one tonal centre.

Key signatures are used to denote specific pitch sets and they are often learned by performing musicians relatively early in their playing. They are usually learned as references for instrumental performance to distinguish difference between the different major and minor scale sets in technical work, as well as providing reference to the concept of transposition when playing with others in a band or orchestra.

Texture is not governed by any specific sets of principles save for governance of musical clarity. It looks at the overall blend of musical elements concomitant to the concept of timbre (Kostka, 2006, pp. 231-269; Blatter, 1997; Berlioz, 1948). For instance, within the previous example referring combined counterpoint and harmony; one might expect the resultant texture to be rather crowded or clustered. The composer may wish to remove overlapping of tones in order to give the texture a bit more ‘room to breathe’. On the other hand, the density of the thrice-compounded voice-leading systems may be exactly the kind of texture the artist was after – the choice is entirely that of the principled composer.

Within music theory, texture can give rise to discussions on cadences, form, dynamics, arrangement, temporal domains, instrumentation, orchestration, timbral colouring and performance practices. Texture is a higher-order concept, looking at resultant sound. This area of inquiry may also branch into music industry and engineering practices such as mixing, recording and production techniques that focus on manipulating textural aspects to shape resultant sound.

Level 4: Romanticism

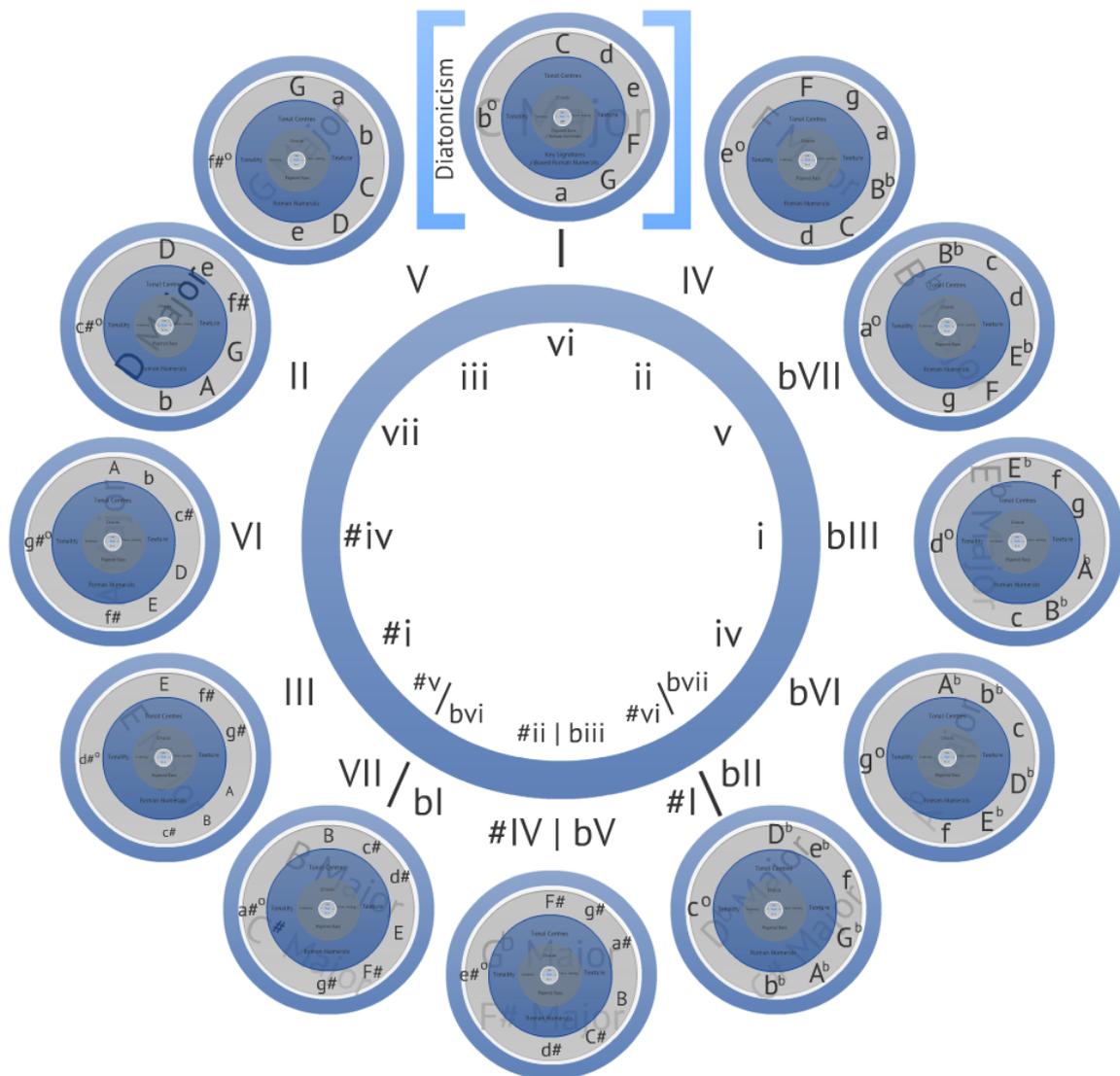


Figure 7.7: Navigation of the cycle of fifths/fourths via the use of the pivot concept.

Levels beyond Diatonicism look at different forms of integration between all available tonal centres. Romanticism chiefly hones its focus upon the similarities between closely-related diatonic keys. The educator should aim to facilitate the student’s understanding of these commonalities between closely-related tonal centres.

The educational focus of romanticism is to break the musician out of the use of just one scale’s resources – to expand the concepts and apply the common-to-all-tonal-centres toolset that has been taught throughout the previous levels. The primary toolsets for integrating are pivoting, elaborations of dominant expansion, tonicization and modal exchange.

Take a look at the bracketed part of Figure 7.7, at the particular layout of the letters about each tonal centre. This layout allows one to see the major-minor-diminished distribution: especially of primary chords: the tonic, subdominant and dominant degrees of major and minor scale relationships. Taking the major perspective, C is the tonic, F is the subdominant and G is the dominant – all the major-quality chords of the set. Taking the minor perspective, A is the tonic, D is the subdominant, and E is the dominant – all the minor-quality chords contained within the set. The B is of diminished quality. Romanticism looks at these relationships as two primary chord groupings within the one set, separated by a diminished chord which may signify either major or minor tonality. An E minor chord in this context could signify a supertonic chord in the key of C major or the subdominant of A minor. This dualism is a key feature of romanticism, in the aforementioned example; the E minor chord would represent both chords simultaneously. Within the diatonicism paradigm; E minor would be one or the other, depending on the referenced tonic – never both at once.

Dominant expansion is no more complex than expanding the dominant harmony of a given tonal centre. From C major, a constant repetition in the bass of the tone G enables the section to diverge one of two ways: resolving back to the tonic (as would be the case within diatonicism); or by including elements of G major (implying modulation toward the new tonal centre). As the expansion could go either way until formally resolved, the expansion leads the music into tonal ambiguity. This is one type of tonicization: where music may reside between two tonal centres. Tonicization is the name given to this perceptual duality, which is a key feature of the romanticism paradigm.

The concept of pivot maintains the theme of duality, but remains restricted to a chordal level. In Figure 5, the inner ring shows Roman numerals signifying the tonics of both major and minor perspectives in relation to the bracketed C major. The subdominant of C major is an F major chord, which is also the tonic chord of F major. Musical context alone dictates which key this chord is a member at any given point and may change at any given time. The chord may pivot between the two tonal centres. As the tonal centres share this feature they are known as closely-related keys. Chromatic alternation is required to modulate to remote areas.

From the researcher's experience, explaining these concepts using musical notation was a struggle. This visualisation has helped immensely in practice as something in which learners could be used as a cognitive latch.

Level 5: Modality

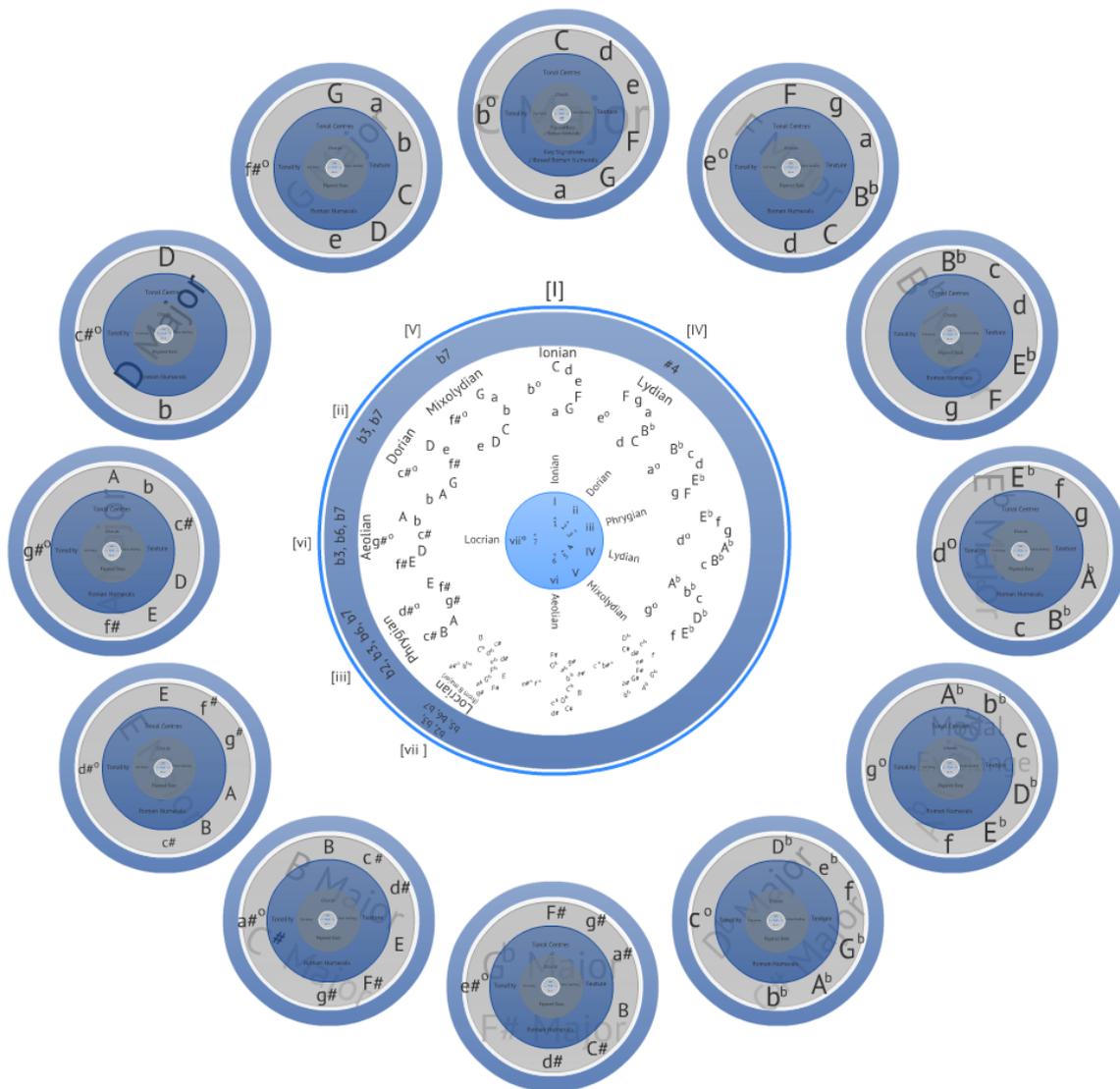


Figure 7.8: Modal signposting used to demonstrate similarity and difference of tonal systems.

Modality is a particularly interesting subject for undergraduate music majors, as it can be seen as a bridge between old and new. From the researcher’s teaching experience, the mere mention of modal writing can rekindle the spark in the eyes of even the most disconnected theory student. The researcher has been curious as to why this phenomenon occurs – many students become intensely interested in this field. It is believed to be the case as many contemporary styles of music utilise modality, and due to media distribution, are seen to be one way of making a ‘successful’ music career. Rock and many forms of popular mainstream music draw upon lydian, mixolydian and dorian modes; metal genres might explore phrygian and locrian modes. This is very appealing to be given the chance to blend previously learned foundational concepts

within contemporary frameworks. Macpherson (1920) describes historical use of the “Ecclesiastical Modes which were the precursors of our modern scales were twelve in number, six *Authentic* modes, and six *Plagal* modes” [their capitals and italics] (p. 277). Modal writing behaves in a completely different manner to that of major-minor tonality; yet guidelines to identifying and understanding characteristic notes of each scale set can provide a very useful bridge in order to add modal writing to a student’s musical palette. Understanding the rudiments of modal writing can also crossover into jazz musical systems of thought, which can be based on a foundation of seventh-chords and chord-scale theory (Levine, 1995; Bolling, 1993). This foundational understanding can lead into exciting non-heptatonic tonal areas that can also be utilised within improvisation such as pentatonic, hexatonic and octatonic scales. Modes of the harmonic and melodic minor also provide extensions of the jazz theory improvisational palette, which then can be extended further through the use of ‘ethnomusicological’ scale sets; or scales which are not of western collection, and may not be of similar tuning. These sorts of tonal palettes give a ‘western take on non-western culture’ feel and quality to music written. It would be necessary for students to study the non-western cultural music system in order to determine how one might best approach its use.

It becomes apparent that there are many musical concepts in which modality can connect to one’s core theoretical foundations: it for this reason that modality has its own level. The tonal resources in combination with all prior levels, especially that of pivot, expand the musical palette enormously. As long as foundations are in place, one may be able to see the potential for the combination of musical principles from the traditional and modal palettes; for example, dorian influences or pentatonic improvisations over dominant expansions. Cultural musical systems have the potential to be integrated into a student’s musical understanding, and performance repertoire through the linkage of theory and ethnomusicological studies.

As stated in chapter six of this thesis, specifically regarding cultural and individual identity; it should not be the goal of western musicologists, ethnomusicologists, theorists, or musicians to study non-western musics for the purpose of dominance, assimilation nor complete integration. The western framework has the potential for adaption, yet so much more can be learned from the culture under examination if it remains preserved – the differences against its western compromise noted and celebrated as a difference in perception.

Level 6: Chromaticism

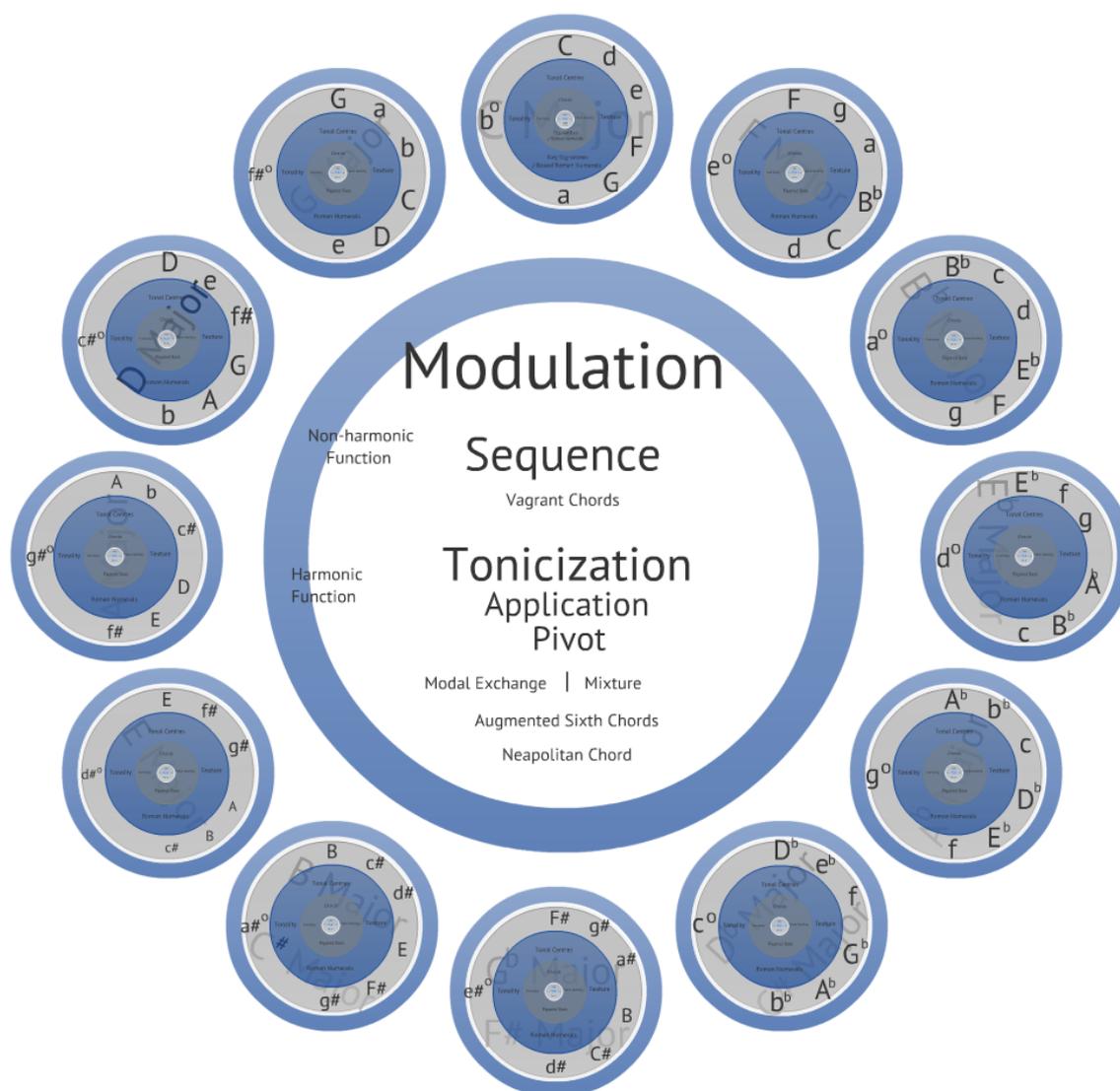


Figure 7.9: A concept toolbox of chromaticism used for summarisation.

Adwell, et al., (2011) state that “the use of tones that normally do not belong to a key is called *chromaticism*” [their italics] (p. 13). While this statement does hold true, simply using a tone not from an original tonal centre does not necessarily make a piece of music adhere to a paradigm of chromaticism; this statement mainly concerns the adoption of a chromatic technique. The chromatic techniques shown in Figure 7 span across multiple levels of melodic, harmonic and tonal interactions.

Chromatic chordal frameworks (such as added, altered, clustered, extended, neapolitan or augmented sixth chords), add to the harmonic palette of students’ musical understanding (Macpherson, 1920; Piston, 1941; Bolling, 1993; Levine, 1995; Gauldin, 2004; Kostka, 2006;

Aldwell, et al., 2011). So-called ‘Impressionist music’ extends from the primary use of quartal and quintal chords. Most famously championed by Debussy, some students may wish to explore this style in more detail (Kostka, 2006).

The use of chords within romanticism still adhere to traditional tonic-dominant relationships; whereas chromaticism tends to flow between chords through the use of common-tone relationships. Due to the increase in harmonic progressions of chords so far removed from original tonal centres, the sense of tension and release originally conveyed within diatonicism fades amidst the ambiguity. Chromatic alterations to tonality such as application, pivot, modal exchange, mixture and modulation can assist with understandings regarding atmospheric alteration (Gauldin, 2004; Aldwell et al., 2011; Piston, 1941; Macpherson, 1920), which build upon understanding the nexus of available paths between musical resources. Macpherson has no mention of extended techniques of chromaticism save for modulation as the concepts had not yet been considered historically, yet chromatic chords have been covered in abundance.

There is no clear boundary to where romanticism ends and chromaticism begins, yet there are some distinctions. The former paradigm continues and extends the diatonic fashion of tonal function and hierarchy; where tonal centres can be ambiguous, yet still contain divisions – one is able to modulate and formally begin or end in a particular key. Chromaticism further extends romanticism to the point where keys hold little to no relevance: ‘some of these devices may weaken the underlying major and minor tonal system to such an extent that our sense of harmonic function or tonic harmony is diminished or even missing altogether.’ (Gauldin, 2004, p. 703). The lines begin to blur through the use of tonally ambiguous techniques such as tonicization, mixture, pivot and modal exchange – at the extreme; complete chromaticism entails total use of all pitch materials with no distinguishable tonal centres.

There are a range of non-functional harmonic techniques which assist the chromatic ideal. Vagrant chords are a term coined by Arnold Schönberg regarding altered major and minor chords which are so far removed from an original tonic that they merely serve to momentarily colour progressions without extending its tonal function, “they may lack any sense of tonal function and can even contribute to a temporary suspension of key feeling” (Gauldin, 2004, p. 597).

Chromatic sequences continue this theme of tonal suspension by chromatically elaborating diatonic non-functional melodic and harmonic models. Adopting enharmonic equivalence is usually required when using chromatic sequences. For example, an E flat may be required to be

written as a D sharp in its proceeding chord. Chromatic voice-leading sequences tend to navigate chromaticised suspensions (descending 4-3, 9-8, 7-6 or ascending 5-6 progressions); harmonically traversing augmented triads and sixth chords or sequentially applied fully-diminished seventh chords. The chromatic featuring of augmented triads and fully diminished sevenths blends into a prominent chromatic concept: at the cusp of tonality – symmetrical divisions of the octave (Aldwell, et al., 2011; Gauldin, 2004).

Equal Divisions of the Octave

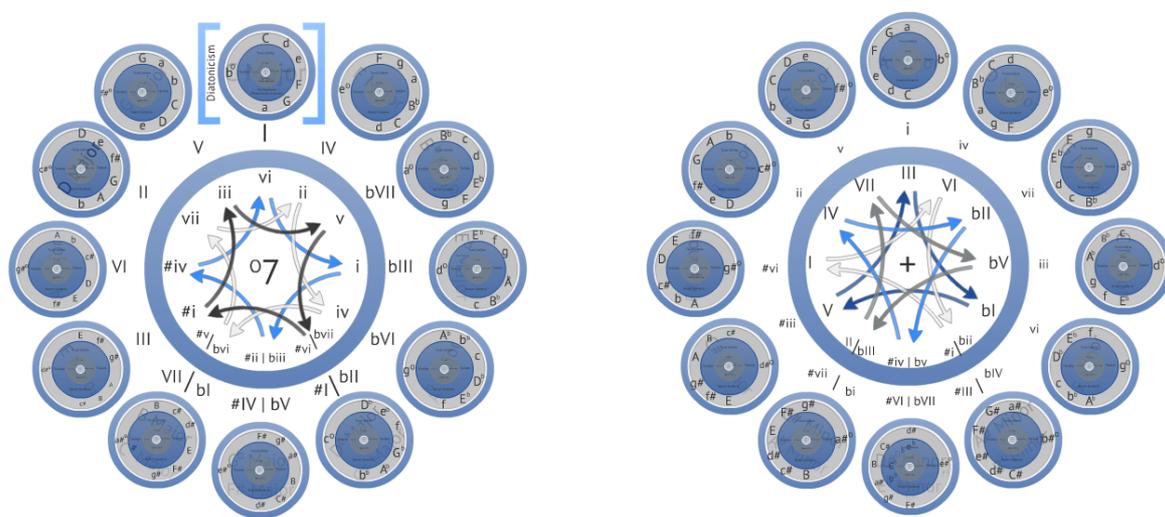


Figure 7.10: Fully-diminished sevenths and augmented triads used as tools for modulation.

Figure 8.8 demonstrates two such divisions of the octave – on the left, each fully-diminished seventh chord can navigate four major-tonality and four minor-tonality tonal centres; they play a potential role in eight simultaneous keys. Each chordal member equally divides the octave, temporarily suspending tonal function and depending on its chordal inversion, can resolve its bass note up by one semitone to the desired tonal centre. Similar key navigation may be achieved using augmented triads, as shown on the right. The Roman numerals are different as the left map references all keys to C major; the right map references all keys to A minor. For educational purposes, if one wishes to reference all keys to another tonal centre, one need to simply rotate the central circle to the appropriate tonal centre required – some alterations to the numerals may be necessary to remain purist as numerals pass about the enharmonic tonal centres: B / C flat major to D flat / C sharp major.

With the chromatic octave being constructed using twelve semitones, composers are able to divide this evenly in four ways: by six (the interval of a tritone – utilised most by jazz with tritone substitution (Bolling, 1993; Levine, 1995)); by four (the interval of a major third – harmonically, the augmented triad); by three (the interval of a minor third – harmonically yielding the fully-diminished seventh chord); or by two (the major second interval or whole tone scale).

There are alternate division patterns such as whole tone diminished scales (Levine, 1995; Bolling, 1993) or the omnibus sequence (Gauldin, 2004) – pattern association has led into many different styles and techniques of composition. There are many combinatorial possibilities: to list all in this chapter would require an additional volume. References to ideas mentioned are intended as a means for prospective teachers to prepare their own materials for inclusion into personal pedagogy. The subject of chromaticism is perhaps the largest tonal musical web, as all potential pitch correlations are considered available for employment.

Beyond Chromaticism

From here, pathways are divergent: some composers look toward atonality. “In a very general way, atonality means music without a tonal center. More specifically, it refers to the systematic avoidance of most of those musical materials and devices that traditionally have been used to define a tonal center.” (Kostka, 2006, p. 15). Atonality leads into several musical philosophies and approaches such as serialism, atonality, aleatory and chance music. Integral serialism in particular has brought about the interest of computer programmers in an attempt to control the nature of music via electronic means.

On the other hand, some turn to tonal mechanisms such as neoclassicism, minimalism or modalic ‘exoticism’ (Kostka, 2006, p. 177). The music educator may wish to divulge in the musicological aspects of philosophical alignment to give students options to suit their personal dispositions. From the researcher’s experience; attempting a linear, historical chronology may skew understandings as students receive an impression that sequentially introduced philosophies expand the preceding outlook. This is not entirely the case; as is revealed in the American publication of Piston (1941):

At about the same time that Debussy was using his carefully controlled nonsystematic tonal language to create a new and essentially French musical aesthetic, ... in the works of Schönberg, Berg and Webern, beginning about 1907-8, tonality disappeared altogether... Eventually a principle called serialism emerged ... the twelve-tone system was an application of the serial principle to the twelve different pitch classes of the chromatic scale... [this] allowed for a remarkable degree of compositional freedom, and was clearly a convincing way of regulating atonality... another pole was destined to serve as an international restorative force in twentieth-century tonality. This was the aesthetic movement that came to be called neoclassicism, ... [which] did not begin to flourish until the third decade of the twentieth century, when an entire generation of composers, led by Ravel, Stravinsky, Hindemith, and Prokofiev, wrote an impressive body of works that projected a new kind of diatonic tonality. (pp. 455-6)

At the time this book was published, America was only just entering World War II, which (not surprisingly) heavily influenced western artistic musical output toward disjunct expression. Piston's account is historical for the time, yet it is interesting to note that this text "became and remained the most widely-used harmony text in America" (Piston, 1941, p.xiii). Schönberg also emigrated to America in 1933; just prior, Duke Ellington and Louis Armstrong were increasing in popularity (Burkholder et al., 2006, p. 800). America's musical influence after the war has been tremendous; and with the inclusion of technological mediation, has continued to heavily influence music on a global scale.

In this chapter there has been an attempt to visually represent pitch structures that build to a higher-order level, in the hope to demonstrate both increasing levels of musical organisation and my thinking about how these can be represented. It is an attempt at creating a structural foundation geared toward learner-centred theory curricula and pedagogy, which allows students to derive their own meanings of the subject within their own personal contexts. While the educator can use these as a curriculum spine, further breakdowns are required as per individual directives.

8. Music Theory Confluence: An Intervallic Canvas

This chapter aims to increase the scope of this thesis to that of all-encompassing musical and educational frameworks. It attempts to explain the larger musical phenomenon, as I perceive it to suit all prior musical concepts that have been explored within this thesis. Here I would like to address my perception via internal, conceptual relationships – my perception of the core technical aspects of western music theory which simultaneously underpin and encapsulate all musical concepts discussed within chapter seven. The current chapter could be conceived as a continuation of the previous chapter. This chapter places its focus upon the musical phenomenon with its interrelationships of constituent concepts in order to visualise my own perception of the encompassing foundational aspects to music theory.

As elucidated within chapter four, information- and practice-based skillsets can be argued to utilise musical structure to assist their facilitation. Shown in Figure 4.2, the concepts of musicianship and musicality hold a symbiotic relationship to outline the formation of musical thought and musical structure plays a vital role in achieving this developmental aim. Therefore, overarching visualisations presented in light of musical thought conceived as such can provide reference to constituent skillsets. In other words, I hope to provide context to learners by visualising how every theoretical structure can be understood in terms of a single reference, and such simplification can provide relevance to individual preferences in terms of musical skillsets.

The visualisations within this chapter evolve as discussions progress. There are different comparisons of notes and intervals using chromatic and tonal orderings. Chromatic ordering arranges notes in alphabetical sequence. Tonal ordering arranges notes sequenced within the cycle of fifths or fourths, which is the order of tonal centres. These visualisations provided hope to assist the beginning student to see, utilise and understand the greater musical picture in terms of its formal frameworks. It is believed that students who hold a strong understanding of the foundational concepts displayed will have an easier time piecing together more complex connections required as their study progresses.

Structural Relationships of Interval Frameworks

Intervals, alongside notes, are the building blocks to all western music. Within chapter seven, intervals were described as being either melodic or harmonic in nature. Both types of interval were represented visually on level 0 of the overall pitch spine, alongside notes. These concepts were described as level 0 rather than level 1, as they hold a fundamental significance in that they undermine all musical pitch interactions. Whilst being the simplest and smallest units of musical understanding, they are also used to describe the most complex interconnections as strings or matrices of notes and interval. Notes are the substance of pitch, and intervals are the spaces between notes. The space between notes may not hold primary significance at first glance, yet as greater contexts are musically understood in terms of progressive references of sound frameworks; intervals can be argued to be the facilitators of musical context as they are utilised and manipulated in all greater musical frameworks. An individual interprets music differently to another due to the different combinatorial meanings and preferences associated with the heard notes and intervallic relationships within specific tonal contexts. These pitch relationships are conceived prior and subsequent to the perceived present moment – as each new sound is heard, where pitches have come from and where they are thought to lead are considered within the established rhythmic framework. Intervals allow the individual to experience music, as notes flow through time simultaneously and sequentially: without them, it would be one-dimensional. It is the experience of associating relationships between notes – what happens within the flow of the music – that allows one to form meaning of music being heard. If music flows along the expected train of thought, then the music is familiar to the listener; if the flows diverge from what is expected, new musical understandings are formed. For instance, one melody with successive stepwise intervals may give the impression of a smooth transition (as well as being relatively predictable or familiar), yet if a melody leaps about in a disjunct manner, it may give an impression of uneasiness (it is also harder to predict disjunct movement unless the piece heard is already familiar). These impressions may be general, yet are received and interpreted in a different manner more specifically for each listener. Harmonies, which are comprised of simultaneous intervals, give rise to more complex interpretations based on how many intervallic relationships are perceived by the individual; and as inherent meanings which may be linked to individual experiences and familiar concepts are potentially infinite, make things difficult to define formal models of objective association. Likewise, the most complex chromatic concepts are usually based upon intervallic relationships, as the formal melodic and harmonic frameworks

of diatonicism or romanticism have usually been obliterated; within the modality and ethnomusicological paradigms, it is the interval that is used as a reference: the interval is a very powerful musical mechanism.

Mapping the combinatorial potentials of all intervallic combinations will signify the 'outlining framework' to the greater musical phenomenon. As a network of intervals are mapped, a shape will emerge which signifies the 'boundaries' of that particular framework. One approach to achieving such a visualisation of this intervallic structure is to simply chart the resultant intervals as notes are referenced against each other. This is what I have done using the emerging visualisations so that they may give rise to the inherent natures of the phenomenon, which may give further insight to the importance of the interval as a musical device.

Inversions and Equivalences: Enharmonic, Octave and Intervallic

Table 8.1 signifies the number of semitones between each note from the y-axis going up to the note signified across the x-axis. This could also be interpreted as the amount of semitones below the notes from the x-axis to the y-axis. The colours used have no ultimate significance at this stage, save directly relating to the colour scheme on the wireframe model depicted in Figure 8.1. There are some notes within each axis that contain harmonic equivalence – they are heard as the same note – such as G flat and F sharp.

	Ab	A	A#	Bb	B	Cb	B#	C	C#	Db	D	D#	Eb	E	Fb	E#	F	F#	Gb	G	G#
Ab	0	1	2	2	3	3	4	4	5	5	6	7	7	8	8	9	9	10	10	11	12
A	11	0	1	1	2	2	3	3	4	4	5	6	6	7	7	8	8	9	9	10	11
A#	10	11	0	12	1	1	2	2	3	3	4	5	5	6	6	7	7	8	8	9	10
Bb	10	11	12	0	1	1	2	2	3	3	4	5	5	6	6	7	7	8	8	9	10
B	9	10	11	11	0	12	1	1	2	2	3	4	4	5	5	6	6	7	7	8	9
Cb	9	10	11	11	12	0	1	1	2	2	3	4	4	5	5	6	6	7	7	8	9
B#	8	9	10	10	11	11	0	12	1	1	2	3	3	4	4	5	5	6	6	7	8
C	8	9	10	10	11	11	12	0	1	1	2	3	3	4	4	5	5	6	6	7	8
C#	7	8	9	9	10	10	11	11	0	12	1	2	2	3	3	4	4	5	5	6	7
Db	7	8	9	9	10	10	11	11	12	0	1	2	2	3	3	4	4	5	5	6	7
D	6	7	8	8	9	9	10	10	11	11	0	1	1	2	2	3	3	4	4	5	6
D#	5	6	7	7	8	8	9	9	10	10	11	0	12	1	1	2	2	3	3	4	5
Eb	5	6	7	7	8	8	9	9	10	10	11	12	0	1	1	2	2	3	3	4	5
E	4	5	6	6	7	7	8	8	9	9	10	11	11	0	12	1	1	2	2	3	4
Fb	4	5	6	6	7	7	8	8	9	9	10	11	11	12	0	1	1	2	2	3	4
E#	3	4	5	5	6	6	7	7	8	8	9	10	10	11	11	0	12	1	1	2	3
F	3	4	5	5	6	6	7	7	8	8	9	10	10	11	11	12	0	1	1	2	3
F#	2	3	4	4	5	5	6	6	7	7	8	9	9	10	10	11	11	0	12	1	2
Gb	2	3	4	4	5	5	6	6	7	7	8	9	9	10	10	11	11	12	0	1	2
G	1	2	3	3	4	4	5	5	6	6	7	8	8	9	9	10	10	11	11	0	1
G#	0	1	2	2	3	3	4	4	5	5	6	7	7	8	8	9	9	10	10	11	0

0	Perfect Unison
1	Minor Second
2	Major Second
3	Minor Third
4	Major Third
5	Perfect Fourth
6	Augmented 4th or Diminished 5th
7	Perfect Fifth
8	Minor Sixth
9	Major Sixth
10	Minor Seventh
11	Major Seventh
12	Perfect Octave

Table 8.1: Resulting intervals (measured in semitones) via chromatic note comparison.

One cannot replace notes of enharmonic equivalence as each musical note play their own contextual role depending on which tonal centre is being utilised as a reference point. For example, F sharp is utilised within the tonal centre of G major, rather than employing the use of the note G flat (these notes are perceived to sound the same by ear, yet the key signature of the scale determines how notes appear of a written score). Table 8.1 merely represents the most basic of note classifications and enharmonic equivalences. It can be seen in table 8.1 that F flat appears to be out of alphanumeric order when compared to E sharp. E sharp is in fact enharmonically equivalent to F natural and F flat (enharmonically equivalent to E natural); B sharp (equal to C natural) and C flat (equal to B natural); as shown in Table 8.1, show similar abnormalities to aural equivalents. At these sections of each axis, the lettering may seem to be slightly out of order. This is one quirk of musical structure: it seems to be symmetrical, yet there

appear to be slight alterations that make this so. In order to determine the inherent natures of this table, I will be looking at the patterns with emerge along each of the rows, columns and diagonals and diagonals in either direction.

Looking vertically and horizontally at Table 8.1 yields a sequential pattern of semitones, displaying a chromatic scale ordering. Looking for any patterns about the main diagonals; from bottom-left to top-right corners emerges a pattern of tones (one tone is equal to two semitones), curiously, this exact pattern only repeats at four other such diagonals: from D# to D#; from Db to Db beginning at the bottom of the table; from A# to A# in the top-left corner, and its equivalent in the bottom-right corner on the intersections of Gb and G# from the y- to x-axes. These lines intersect with notable perpendicular diagonals, such as from the top-left to the bottom-right corners of Table 9.1, which shows an uninterrupted string of zeroes. It is important to mention that these zeroes can be interchanged with the number twelve, as these intervals are inversions of each other: the interval from and to any of these notes could be either an octave or a unison. Table 8.1 is confined within one octave – in order to see whether these relationships continue, the entire matrix needs to be tessellated about the x-, y- and z-axes. If the table tessellates, then it accounts for octave equivalence. For example, the intervallic distance between middle C and a C four-octaves above can still be condensed to be measured as being either zero or twelve semitones.

Returning to this top-left-to-bottom-right corner diagonal of uninterrupted zeroes; curiously, this uninterrupted pattern also only occurs at four other similar-directional diagonals in Table 8.1: the string of sevens from the Db on the y-axis down to the D# on the x-axis; the string of fives from the Db on the x-axis down to the D# of the y-axis; the small string of twos from y-axis Gb to x-axis A# and the small string of tens from x-axis Gb to y-axis A#. When all of these diagonals are marked, their points of intersection are in correlation to the cycle of fifths as described in chapter eight of this thesis. Further tables in this chapter will explore the different arrangements of axes and their note patterns: for instance, Table 8.3 has its x- and y-axes in the order of the cycle of fifths to determine its emerging framework due to this correlation found within these diagonals. Further additions to table 8.1 involve double sharps and double flats, as they are used within standard musical nomenclature. However, before including further enharmonic equivalences, a visualisation of the information contained within Table 8.1 can be seen in Figure 8.1. As will be evident, I have generated a number of figures to visually represent my understandings of inherent intervallic structures within particular chromatic or diatonic contexts.

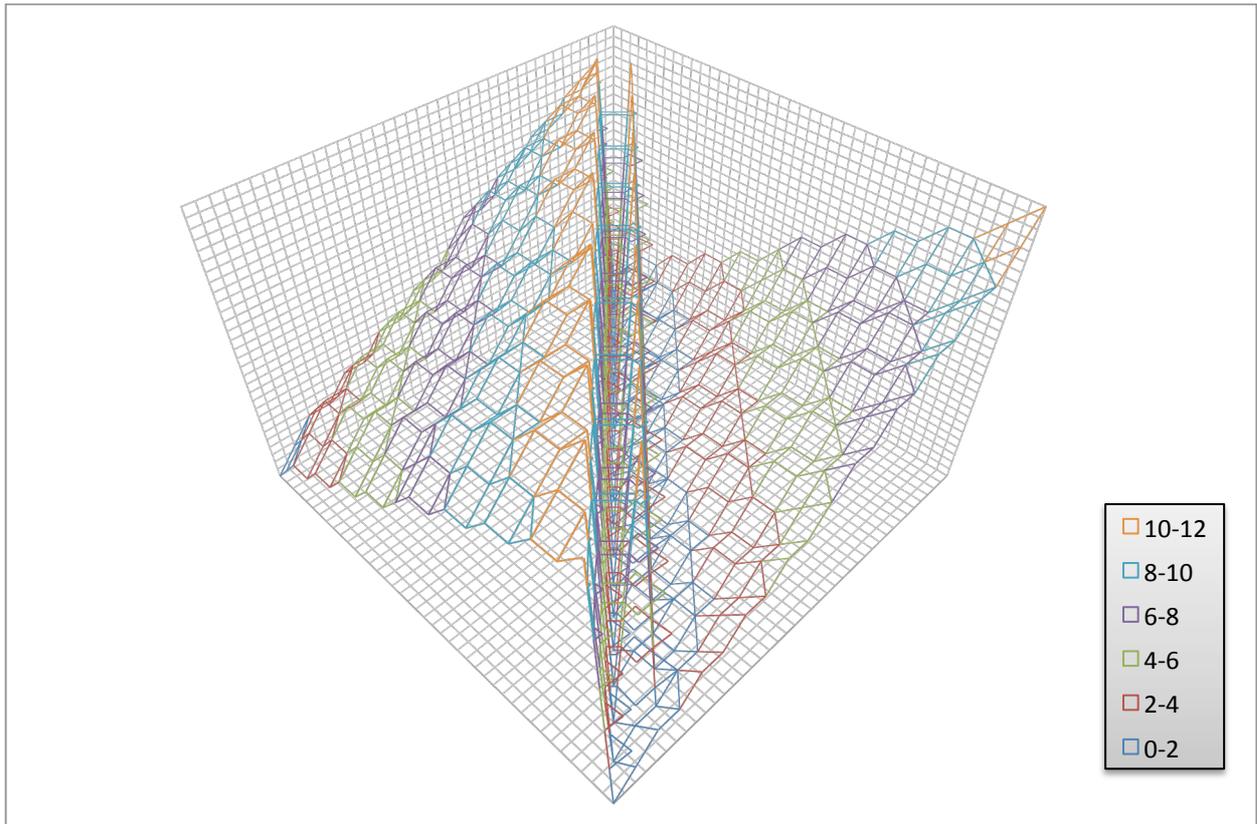


Figure 8.1: 3D Visualisation of Table 8.1.

Comparing this visualisation with Table 8.1, each intersection of lines in Figure 8.1 corresponds with resultant intervals in Table 8.1 – representing the number of semitones above zero. I have rotated the focus in order to best display the overall three-dimensional shape of the matrix from Table 8.1. What appears to be a jumbled central mess is simply the case that the intervals of an octave and perfect unison are inversions of each other: they can be perceived analytically as the same note (C to C, for example, or G# to G#). With an understanding of inversions, this chart can be read back-to-front. Essentially, combinations of intervals that add to twelve in Table 8.1 are inversions of each other. For example, the intervallic ‘distance’ to move from D to A# or Bb is eight semitones. Inverting this relationship – moving from A# or Bb to D – contains an interval of four semitones. Likewise, the augmented fourth or diminished fifth (aurally identified as a ‘tritone’), is an inversion of itself and is consequentially heard as the most ‘dissonant’ interval from a traditional musical approach. However, following chromatic convention, one could argue that the tritone is an equal division of the octave in itself (as the six semitones that constitute the tritone interval divides the twelve semitones of an octave evenly). Using this logic, the tritone could be seen as a non-harmonic interval rather than a traditional harmonic dissonance. Thus, any theoretical configuration of two-note non-harmonic musical functions could be applied to this interval span. Coincidentally, the jazz paradigm is based firmly within

the nature of this particular interval, whereas traditional diatonic to romantic systems tend to avoid its use due to its ‘dissonant’ perception. Identifying the tritone as such an interval can assist to establish a foundational difference between the two musical approaches.

Continuing this evolution of intervallic mapping, Table 8.2 (over the page) has been expanded to include all intervals with enharmonic equivalence to cater for the use of double sharps and double flats, usually found within musical scores. Table 8.2, like Table 8.1, signifies the semitones between each note from the y-axis going up to the note signified across the x-axis. It may seem excessive for any practical use – for example, the use of D $\flat\flat$ (D double flat) is certainly limited – the point of this matrix is to map out all options. The use of extreme equivalences is a required element to balancing out the relationships as this is a fundamental difference between theory and aural studies. As each interval is heard as the same note, there is an illusion of the ears – they cannot determine which equivalency is being used. Thus, the tonal context cannot be differentiated. On a written score, the use of a double-flat could be of particular significance with regard to the music’s structure, yet such a note or subsequent interval would not be able to be heard as such. What the ears hear are represented in Table 8.2 as the colours, all options available for interaction within a score are the smaller segmented boxes that constitute the entire Table. The axes are in the most chromatic order as can be, yet as can be seen in Table 8.2, letter names intersect about each other due to enharmonic equivalence.

I have used my own shorthand to depict the type of interval within each correlation, for example: PU stands for perfect unison; m2 for minor second, M3 for major third, P4 for perfect fourth, a4 for augmented fourth, d5 for diminished fifth, dd3 for doubly-diminished third, da2 for doubly-augmented second, ta4 for triply-augmented third, qa4 for quadruple-augmented fourth and qtd5 for quintuple-diminished fifth; these interval types are realised through adherence to specific methods of analysis.

	Ab	Gx	A	Bbb	A#	Bb	Cbb	Ax	B	Cb	B#	C	Dbb	Bx	C#	Db	Cx	D	Ebb	D#	Eb	Fbb	Dx	E	Fb	E#	F	Gbb	Ex	F#	Gb	Fx	G	Abb	G#		
Ab	P	U	da7	a0	m2	da0	M2	d3	ta0	a2	m3	da2	M3	d4	ta2	a3	P4	da3	a4	d5	da4	P5	d6	ta4	a5	m6	da5	M6	d7	ta5	a6	m7	da6	M7	d0	a7	Ab
Gx	dd2	P	U	d2	td3	m2	dd3	qd4	M2	d3	td4	m3	dd4	qd5	M3	d4	td5	P4	dd5	td6	d5	dd6	qd7	P5	d6	td7	m6	dd7	qd0	M6	d7	td0	m7	dd0	td2	d0	Gx
A	d0	a7	P	U	d2	a0	m2	dd3	da0	M2	d3	a2	m3	dd4	da2	M3	d4	a3	P4	dd5	a4	d5	dd6	da4	P5	d6	a5	m6	dd7	da5	M6	d7	a6	m7	dd0	M7	A
Bbb	M7	ta6	a7	P	U	da7	a0	m2	ta7	da0	M2	ta0	a2	m3	da0	da2	M3	ta2	a3	P4	da3	a4	d5	ta3	da4	P5	ta4	a5	m6	qa4	da5	M6	ta5	a6	m7	da6	Bbb
A#	dd0	M7	d0	dd2	P	U	d2	td3	a0	m2	dd3	M2	d3	td4	a2	m3	dd4	M3	d4	td5	P4	dd5	td6	a4	d5	dd6	P5	d6	td7	a5	m6	dd7	M6	d7	td0	m7	A#
Bb	m7	da6	M7	d0	a7	P	U	d2	da7	a0	m2	da0	M2	d3	ta0	a2	m3	da2	M3	d4	a3	P4	dd5	da3	a4	d5	da4	P5	d6	ta4	a5	m6	da5	M6	d7	a6	Bb
Cbb	a6	qa5	da6	M7	ta6	a7	P	U	qa6	da7	a0	ta7	da0	M2	qa7	ta0	a2	qa0	da2	M3	ta2	a3	P4	qa2	da3	a4	ta3	da4	P5	qa3	ta4	a5	qa4	da5	M6	ta5	Cbb
Ax	td0	m7	dd0	td2	d0	dd2	qd3	P	U	d2	td3	m2	dd3	qd4	M2	d3	td4	m3	dd4	qd5	d4	td5	qd6	P4	dd5	td6	d5	dd6	qd7	P5	d6	td7	m6	dd7	qd0	d7	Ax
B	d7	a6	m7	dd0	M7	d0	dd2	a7	P	U	d2	a0	m2	dd3	da0	M2	d3	a2	m3	dd4	M3	d4	td5	a3	P4	dd5	a4	d5	dd6	da4	P5	d6	a5	m6	dd7	M6	B
Cb	M6	ta5	a6	m7	da6	M7	d0	ta6	a7	P	U	da7	a0	m2	ta7	da0	M2	ta0	a2	m3	da2	M3	d4	ta2	a3	P4	da3	a4	d5	ta3	da4	P5	ta4	a5	m6	da5	Cb
B#	dd7	M6	d7	td0	m7	dd0	td2	M7	d0	dd2	P	U	d2	td3	a0	m2	dd3	M2	d3	td4	m3	dd4	qd5	M3	d4	td5	P4	dd5	td6	a4	d5	dd6	P5	d6	td7	m6	B#
C	m6	da5	M6	d7	a6	m7	dd0	da6	M7	d0	a7	P	U	d2	da0	m2	da0	M2	d3	a2	m3	dd4	da2	M3	d4	a3	P4	dd5	da3	a4	d5	da4	P5	d6	a5	C	
Dbb	a5	qa4	da5	M6	ta5	a6	m7	qa5	da6	M7	ta6	a7	P	U	qa6	da7	a0	ta7	da0	M2	ta0	a2	m3	qa0	da2	M3	ta2	a3	P4	qa2	da3	a4	ta3	da4	P5	ta4	Dbb
Bx	td7	m6	dd7	qd0	d7	td0	qd2	m7	dd0	td2	d0	dd2	qd3	P	U	d2	td3	m2	dd3	qd4	d3	td4	qd5	m3	dd4	qd5	d4	td5	qd6	P4	dd5	td6	d5	dd6	qd7	d6	Bx
C#	d6	a5	m6	dd7	M6	d7	td0	a6	m7	dd0	M7	d0	dd2	a7	P	U	d2	a0	m2	dd3	M2	d3	td4	a2	m3	dd4	M3	d4	td5	a3	P4	dd5	a4	d5	dd6	P5	C#
Db	P5	ta4	a5	m6	da5	M6	d7	ta5	a6	m7	da6	M7	d0	ta6	a7	P	U	da7	a0	m2	da0	M2	d3	ta0	a2	m3	da2	M3	d4	ta2	a3	P4	da3	a4	d5	da4	Db
Cx	dd6	P5	d6	td7	m6	dd7	qd0	M6	d7	td0	m7	dd0	td2	M7	d0	dd2	P	U	d2	td3	m2	dd3	qd4	M2	d3	td4	m3	dd4	qd5	M3	d4	td5	P4	dd5	td6	a5	Cx
D	d5	da4	P5	d6	a5	m6	dd7	da5	M6	d7	a6	m7	dd0	da6	M7	d0	a7	P	U	d2	a0	m2	dd3	da0	M2	d3	a2	m3	dd4	da2	M3	d4	a3	P4	dd5	a4	D
Ebb	a4	ta3	da4	P5	ta4	a5	m6	qa4	da5	M6	ta5	a6	m7	qa5	da6	M7	ta6	a7	P	U	da7	a0	m2	ta7	da0	M2	ta0	a2	m3	qa0	da2	M3	ta2	a3	P4	da3	Ebb
D#	dd5	a4	d5	dd6	P5	d6	td7	a5	m6	dd7	M6	d7	td0	a6	m7	dd0	M7	d0	dd2	P	U	d2	td3	a0	m2	dd3	M2	d3	td4	a2	m3	dd4	M3	d4	td5	P4	D#
Eb	P4	da3	a4	d5	da4	P5	d6	ta4	a5	m6	da5	M6	d7	ta5	a6	m7	da6	M7	d0	a7	P	U	d2	da7	a0	m2	da0	M2	d3	ta0	a2	m3	da2	M3	d4	a3	Eb
Fbb	a3	qa2	da3	a4	ta3	da4	P5	qa3	ta4	a5	qa4	da5	M6	qa4	ta5	a6	qa5	da6	M7	ta6	a7	P	U	qa6	da7	a0	ta7	da0	M2	qa7	ta0	a2	qa0	da2	M3	ta2	Fbb
Dx	td5	P4	dd5	td6	d5	dd6	qd7	P5	d6	td7	m6	dd7	qd0	M6	d7	td0	m7	dd0	td2	d0	dd2	qd3	P	U	d2	td3	m2	dd3	qd4	M2	d3	td4	m3	dd4	qd5	d4	Dx
E	d4	a3	P4	da5	a4	d5	dd6	da4	P5	d6	a5	m6	dd7	da5	M6	d7	a6	m7	dd0	M7	d0	dd2	a7	P	U	d2	a0	m2	dd3	da0	M2	d3	a2	m3	dd4	M3	E
Fb	M3	ta2	a3	P4	da3	a4	d5	ta3	da4	P5	ta4	a5	m6	qa4	da5	M6	ta5	a6	m7	da6	M7	d0	ta6	a7	P	U	da7	a0	m2	ta7	da0	M2	ta0	a2	m3	da2	Fb
E#	dd4	M3	d4	td5	P4	dd5	td6	a4	d5	dd6	P5	d6	td7	a5	m6	dd7	M6	d7	td0	m7	dd0	td2	M7	d0	dd2	P	U	d2	td3	a0	m2	dd3	M2	d3	td4	m3	E#
F	m3	da2	M3	d4	a3	P4	dd5	da3	a4	d5	da4	P5	d6	ta4	a5	m6	da5	M6	d7	a6	m7	dd0	da6	M7	d0	a7	P	U	d2	da7	a0	m2	da0	M2	d3	a2	F
Gbb	a2	qa0	da2	M3	ta2	a3	P4	qa2	da3	a4	ta3	da4	P5	qa4	da5	M6	ta5	a6	m7	qa5	da6	M7	ta6	a7	P	U	qa6	da7	a0	ta7	da0	M2	ta0	qa2	da2	Gbb	
Ex	td4	m3	dd4	qd5	d4	td5	qd6	P4	dd5	td6	d5	dd6	qd7	P5	d6	td7	m6	dd7	qd0	d7	td0	qd2	m7	dd0	td2	d0	dd2	qd3	P	U	d2	td3	m2	dd3	qd4	d3	Ex
F#	d3	a2	m3	dd4	M3	d4	td5	a3	P4	dd5	a4	d5	dd6	da4	P5	d6	a5	m6	dd7	M6	d7	td0	a6	m7	dd0	M7	d0	dd2	a7	P	U	d2	a0	m2	dd3	M2	F#
Gb	M2	ta0	a2	m3	da2	M3	d4	ta2	a3	P4	da3	a4	d5	ta3	da4	P5	ta4	a5	m6	da5	M6	d7	ta5	a6	m7	da6	M7	d0	ta6	a7	P	U	da7	a0	m2	da0	Gb
Fx	dd3	M2	d3	td4	m3	dd4	qd5	M3	d4	td5	P4	dd5	td6	a4	d5	dd6	P5	d6	td7	m6	dd7	qd0	M6	d7	td0	m7	dd0	td2	M7	d0	dd2	P	U	d2	td3	m2	Fx
G	m2	da0	M2	d3	a2	m3	dd4	da2	M3	d4	a3	P4	dd5	da3	a4	d5	da4	P5	d6	a5	m6	dd7	da5	M6	d7	a6	m7	dd0	da6	M7	d0	a7	P	U	d2	a0	G
Abb	a0	ta7	da0	M2	ta0	a2	m3	qa0	da2	M3	ta2	a3	P4	qa2	da3	a4	ta3	da4	P5	ta4	a5	m6	qa4	da5	M6	ta5	a6	m7	qa5	da6	M7	ta6	a7	P	U	da7	Abb
G#	d2	a0	m2	dd3	M2	d3	td4	a2	m3	dd4	M3	d4	td5	a3	P4	dd5	a4	d5	dd6	P5	d6	td7	a5	m6	dd7	M6	d7	td0	a6	m7	dd0	M7	d0	dd2	P	U	G#

Number of Semitones
0
1 or 11
2 or 10
3 or 9
4 or 8
5 or 7
6
Unison
Minor 2nd
Major 2nd
Minor 3rd
Major 3rd
Perfect 4th
Tritone
Perfect 5th
Minor 6th
Major 6th
Minor 7th
Major 7th
Perfect 8ve

Table 8.2: An interval matrix chromatically ordered about x- and y-axes.

Each coloured 3 x 3 grid sound like the same interval, as they contain the same number of semitones' distance from each other. For instance, looking at the intersection of E#/F/Gbb (on the y-axis) and Bx/C#/Db (from the x-axis), the resultant interval can be aurally determined as any from this 3 x 3 similar-coloured grid: an augmented fifth, doubly-diminished seventh, triply-augmented fourth, quadruple augmented third or a minor sixth. As each of these names is a measure of eight semitones, these intervals all sound the same, thus demonstrating the concept of intervallic equivalence. However, a particular interval is analysed from a score depending on what tones are specifically written and which tonal centre is being used as contextual reference. Aurally, the interval might generally be perceived as a minor sixth, which will then be received within the established tonal centre. Even though the intervals all sound the same to the auditor (and will hence be simplified when determining musical frameworks by ear), there is an importance to differentiating labels within a written score. It is often of significance whether a composer has used a doubly-augmented third or some such interval; as it may be a feature of a

particular section of the music, if not the entire piece. To discount these notational differences used to extend foundational musical concepts on the grounds that they sound the same is inaccurate, as Table 8.2 is actually the foundational concept simplified to its bare bones. If this is simplified any further in order to derive a visualisation (see Table 8.1), inconsistencies begin to occur. Once an appropriate foundational framework has been visualised, a simplified version shall be derived in order to assist with educational approach. Of particular interest within Figure 8.2 are the resultant enharmonic equivalences pertaining to the notes Ab and G#, which border the matrix. Where every other note contains a 3 x 3 grid, the Ab and G# enharmonic relationships contain 3 x 2 or 2 x 3 grids. This demonstrates the compromise of the western system upon the Pythagorean comma; a system based on the harmonic series as whole-number ratios divisions of the octave. It is interesting to see that such an inconsistency is present within equal temperament.

The colours used in Table 8.2 depict not only particular enharmonically equivalent intervals (each 3 x 3 grid, for instance), but also display correlating inversions. These pairings are so as their combined amount of semitones add to twelve: in other words, an octave (or unison), which are coloured in blue. Intervals of a major seventh (comprising of eleven semitones) and minor seconds (one semitone) are both purple; major seconds (two semitones) and minor seventh intervals (ten semitones) are both red; major sixth (nine semitones) and minor third intervals (three semitones) are both orange; major third (four semitones) and minor sixth intervals (eight semitones) are both yellow; perfect fourths (five semitones) and perfect fifth intervals (seven semitones) are shaded green, with the tritone (augmented fourth or diminished fifth interval) coloured tan. This is to demonstrate the inherent pattern of inversions, which can be seen to be found about the blue-coloured top-left-to-bottom-right diagonal, representing the octave. This shows that intervals have an axis of symmetry down the octave diagonal – however, for it to remain consistent with Figure 8.1, this would have to be a rotational axis of symmetry, not a mirror image. Much like in Table 8.1, the top-left-to-bottom-right diagonals of Table 8.2 are only congruent at certain lines: only the lines of major second (from y-axis Gb to x-axis A#), perfect fourth (from x-axis Db to y-axis D#), perfect fifth (from y-axis Db to x-axis D#) and minor seventh (from x-axis Gb to y-axis A#) diagonals remain consistent with the central, octave line. This is interesting, as all other such-angled diagonals waiver at points, containing augmented or diminished equivalences through their respective central line. The last focal point to Table 8.2 is the alternating nature of the tritone diagonals: there is a consistent pattern that is easily recognised which seems to operate in an inverted manner, unique to this interval quality.

The numeric pattern on the horizontal and vertical planes – that of chromatic ordering – are of similar fashion to Table 8.1; reading from left-to-right or from bottom-to-top yield a sequential increase by one semitone. There are two replications of the interval pattern similar to the main bottom left-to-top-right diagonal, between the A sharp (y-axis) to A sharp (x-axis) and the G flat (x-axis) to G flat (y-axis). This is of interest, as the enharmonic equivalence of these notes are the only set with 2 x 3 or 3 x 2 grids – they might be considered the ‘edges’ of this pattern. In Table 8.1, there were diagonals between Db to Db and D# to D# which shared the same pattern as the main bottom-left-to-top-right diagonal, yet this differs in Table 8.2, where these diagonals only replicate of each other. They interestingly still intersect at points in relation to the cycle of fifths when marked, as they did in Table 8.1. All other such-angled diagonals hold congruency with its reflected pair about the central diagonal. There are no other direct replications of this central bottom-left-to-top-right diagonal, as this line contains the only instances of a quintuple-augmented fourth (the resultant interval from F double flat to B double sharp) and quintuple-diminished fifth (from B double sharp to F double-flat). These particular intervals determine another natural ‘edge’ of the pattern. The F double flat is required to be raised and the B double sharp flattened to stop the continuation into perceivably irrelevant triple sharps or flats. This explains why the key signatures for tonal centres begin with sharps on an F and flats on a B – they compensate for these extremes in intervals that outline equal temperament. These two ‘edges’ seem to determine that ultimately, this matrix is of a different shape to the one visualised.

With these particular points of interest in mind: the alternating manner of the tritone diagonal; the rotational axis of symmetry about the octave/unison diagonal; the quintuple-augmented fourth, quintuple-diminished fifth and the general patterns found about the diagonals; suggest that this matrix takes the shape of something more complex than the software in which I am using may be able to realise. Personally, I am picturing this to be some form of a helix or some sort of spiralled torus (when discounting octave equivalence and allowing tessellation), yet this is not particularly necessary to beginning students – if similar properties are found within other visualisations of intervals, then its significance will be explored in further detail. For the while, I shall visualise each table as they appear directly on the page, rather than attempting to visualise its ‘true’ structure; of which may require more complex investigation, materials and research papers.

The colours that have been used to simplify the reading of the interval inversion patterns of Table 9.2 do not correspond with its visualisation in Figure 8.2. The colours used in Figure 8.2

correspond to the same colour use as Figure 8.1 and Table 8.1. This is due to the software used for creating the visualisations do not allow me to customise these colours of the wireframe.

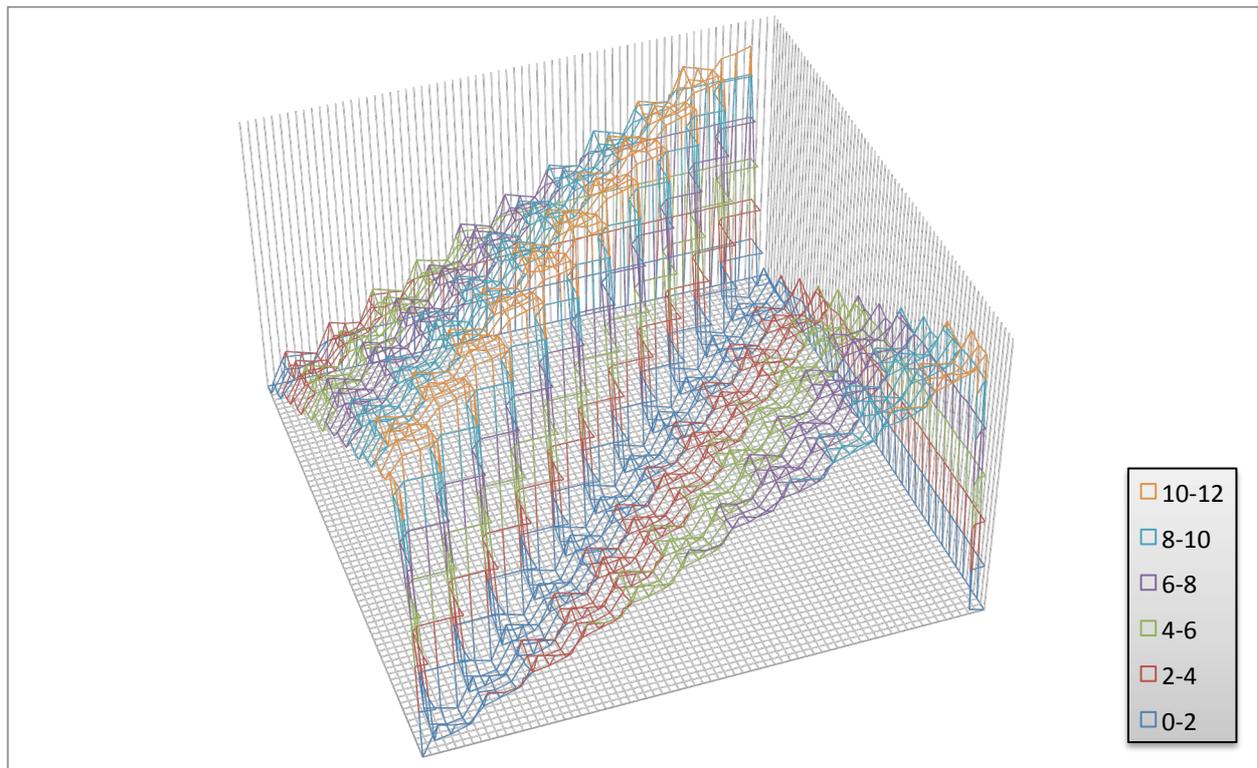


Figure 8.2: Visualisation of Table 8.2.

The Figure 8.2 visualisation has been rotated about the x-axis in order to capture the ‘rippling’ effect of the tiny differences in enharmonic equivalence. These are slight variations in the relationships between notes, as different tonal contexts imply different intervallic relationships written on a score. The crest and fall within the middle of the visualisation depict the main octave/unison diagonal, which is depicted as the main blue diagonal in Table 8.2. As was with Figure 8.1, each intersection of lines in Figure 8.2 corresponds with resultant intervals found (this time, from Table 8.2), which equate to the number of semitones above zero. One thing that can be determined is the absolute symmetry of this visualisation: this wave continues ad infinitum along each of the x-, y- and z-planes. There is also rotational symmetry about the diagonal crest/fall: if one were to superimpose inversions on top of each other, the results would all add up to twelve, and since it is the equivalent to a perfect unison, which is an interval of zero semitones, the entire wireframe would disappear. On the other side of things, when this shape is allowed to span multiple octaves to discount octave equivalence, the shape expands ad infinitum as it completely tessellates (this is shown in Figure 8.2.1). Take note that Figure 8.2.1 is not able

to demonstrate that tessellations can also occur about the z-axis, adding extra layers above or below the one displayed due to restrictions in software capability.

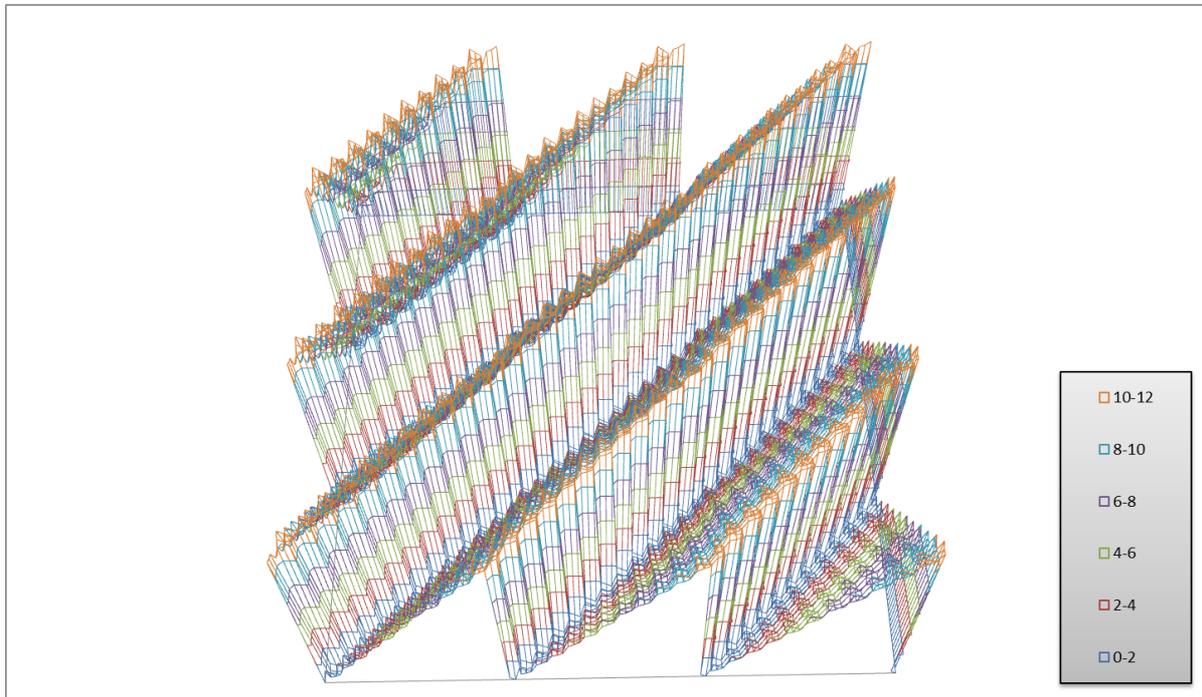


Figure 8.2.1: Figure 8.2 tessellated against itself. Here, Figure 8.2 is shown in a 3 x 3 grid.

Figure 8.2.1 is literally Figure 8.2 replicated nine times; each main diagonal line begins or ends each repetition, with one enclosed on all sides about the x- and y-axes. Looking closely at how this shape repeats itself, there are slight kinks in the prominent diagonal lines. This is due to the aforementioned Ab and G# enharmonic equivalences: there are also slightly narrower columns as a result of this and provides an outline to the 3 x 3 grid of Figure 8.2 repetitions. This pattern can also be repeated above or below the image given, yet restrictions on available software do not allow such manipulations. The result looks similar to a three-dimensional sawtooth wave, yet each intersection of the wireframe corresponds to the interval matrix as per Table 8.2.

As mentioned previously, if the shape is shown to tessellate then it will suit the convention of octave equivalence, and hence can remain within the domain of one octave. Compressing everything into the span of once octave also makes understanding the topic easier, as irrelevant duplications would only serve to confuse the beginning theorist. This test of tessellation will need to be undertaken for further variances of interval wireframes, as any model created must comply with octave equivalency in order to fully replicate the nature of the musical phenomenon. An interesting pattern emerges when the linear z-axis of Figure 8.2 is replaced with a Log Scale z-axis, as shown in Figure 8.2.2.

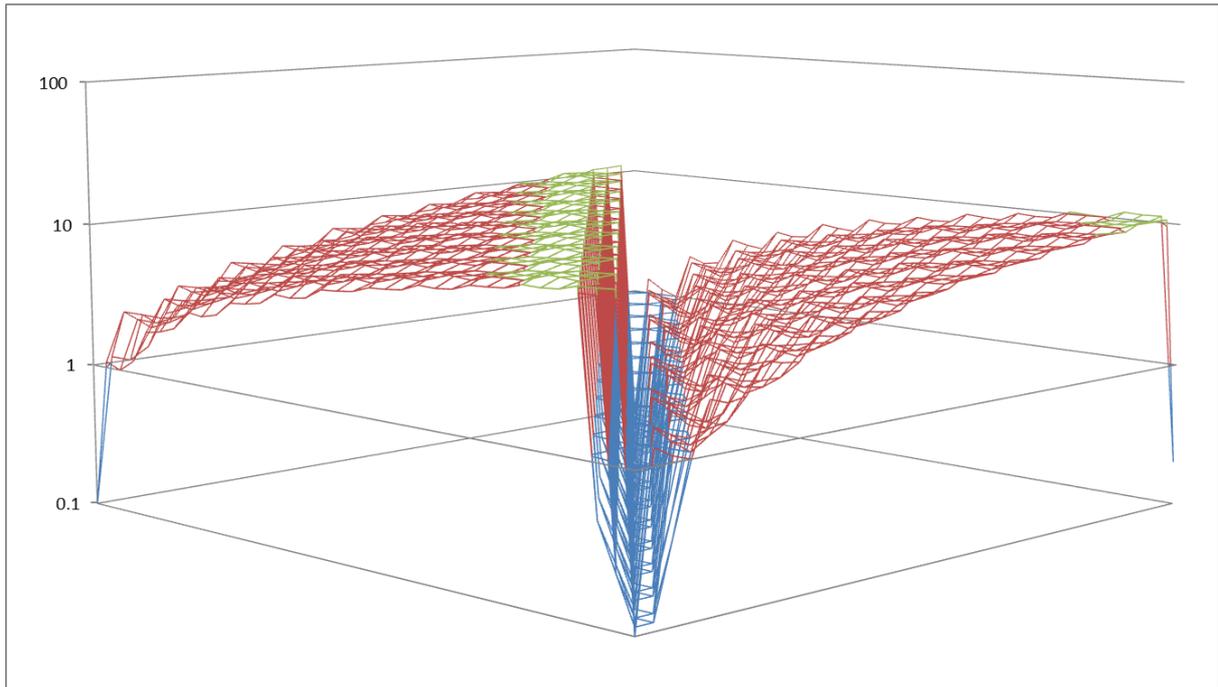


Figure 8.2.2: 3D Visualisation of Table 8.2 with a Log Scale as the primary vertical axis.

Figures 8.2.2 and 8.2.3 are mainly a curiosity to see whether this pattern may be converted to log in order to correlate with sonic properties of amplitude. Further investigation would be required to determine the true significance of this conversion; at this juncture, I feel this may hold more relevance to technology systems than music education. Coincidentally, this shape also tessellates in the same way as Figure 8.2 (as shown in Figure 8.2.3).

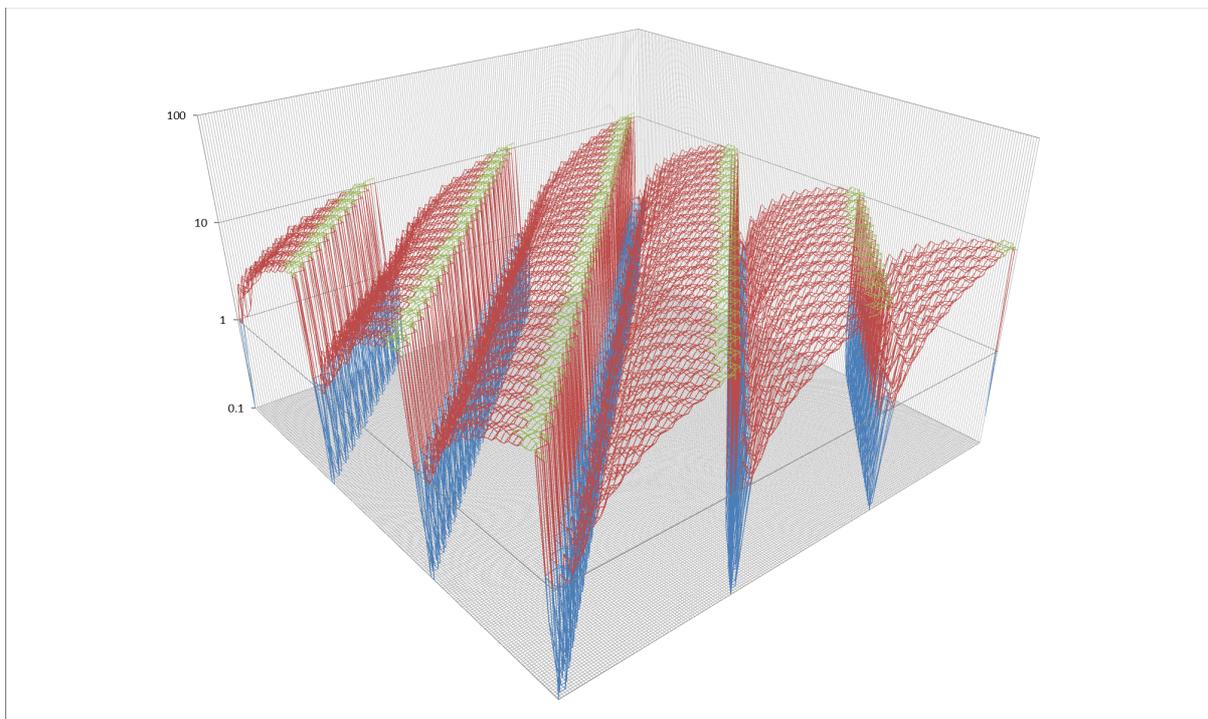


Figure 8.2.3: Figure 8.2.2 Tessellated in a 3 x 3 grid.

Using the Cycle of Fifths / Fourths as axes

The previous visualisations have only involved intervals referenced against each other in chromatic order along both x- and y-axes. As there were diagonal relationships pertaining to the cycle of fifths, within Tables 8.1 and 8.2, the next step is to repeat the process, yet simply change the order in which the notes appear at both axes. Instead of being in chromatic order, both the x- and y-axes have been placed in cycle of fifths ordering. The colour coding for Table 8.3 is exactly the same as that for Table 8.2. Comparing the resultant tables and visualisations should provide insight into the nature of intervals within a context of tonality rather than simple chromatic ordering. Table 8.3 demonstrates the resultant matrix.

Just like table 8.2, Table 8.3 displays the resulting semitones between each note from the y-axis going up to the note signified across the x-axis. Reading Table 8.3 horizontally from left-to-right or vertically from bottom-to-top gives rise to sequential intervals of a perfect fourth (five semitones); reading the Table in an opposite manner yields a sequence of perfect fifths (seven semitones). The colours used within Table 8.3 are equivalent to those used in Table 8.2, and hold the exact meanings. Likewise, the shorthand for interval nomenclature remains the same.

Particular consistencies between tables 8.1 to 8.3 can be found within bottom-left-to-top-right interval pattern diagonals about the central line of Table 8.3. The quintuple-diminished fifth and quintuple-augmented fourth intervals remain on this central diagonal, yet have changed location. They are interestingly situated directly next to the Ab/G# 'border', characteristically defined as the only set of notes to have 2 x 3 or 3 x 2 equivalence grids rather than 3 x 3. The significance of this particular placement demonstrates their role within equal temperament in tonal contexts as attempts to compromise for the lack of completely equal subdivisions of the octave. The placement of these specific intervals also indicates that the red diagonal bands have rotated about the tan-coloured tritone band in order to move from its position in Table 8.2 to its current position in Table 8.3. Of significant importance to the tritone bands are that they are now consistent, not alternating as it was in Table 8.2. Lastly, in relation to the Ab/G# 'border', the tonal centre of D appears to be central: the note D is six semitones away from Ab and G#. The tonal centre based on D is also perfectly balanced and symmetrical when the notes of D Dorian mode (notes of C major, beginning of D) are seen within this context. By balanced, I am meaning that the intervals between the notes of the D Dorian mode (D, E, F, G, A, B and C) are clearly visible as a central cross within Table 8.3. There also appears to be a rotational axis of symmetry about the blue octave/unison diagonal, as inversions are correlated: fold the table in half down this line and all inversions will align. This is the same as the case with Table 8.2; if the visualisation was to be superimposed over itself in this folded manner, all relationships would add to twelve, and due to octave equivalence, would then be the same as a unison interval (comprising of zero semitones), and hence the entire visualisation would disappear altogether.

With the discussed considerations taken into account, it appears that Table 8.3 is more symmetrical than Table 8.2. This property does not make the visualisation any simpler: on the contrary, as it contains more rotational symmetry, it is more complex to determine an overall shape to the framework. In order to cater for this, I have provided two-dimensional shots from two angles down each main diagonal in order to ascertain a cross-section (Figures 8.3.1 and 8.3.2), before supplying a three-dimensional top-down view (this is shown in Figure 8.3.3).

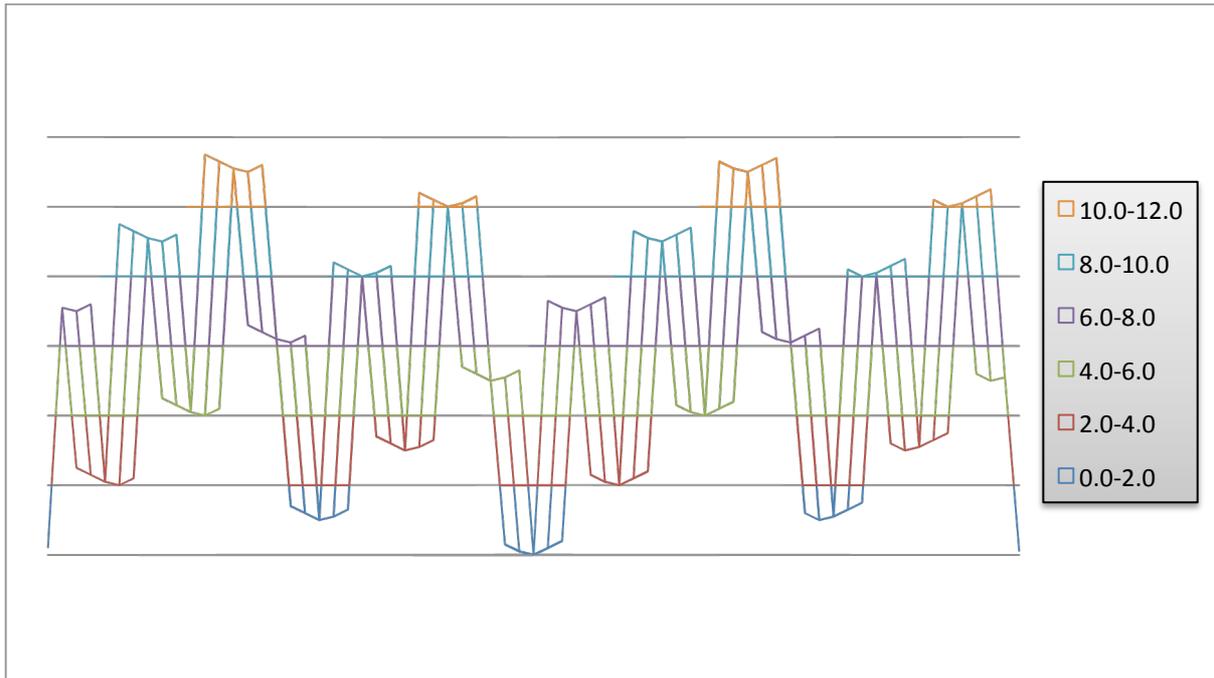


Figure 8.3.1: 2D Visualisation of Table 8.3(looking down its main top-left to bottom-right diagonal).

Figure 8.3.1 displays Table 8.3 as seen if looking down from its top-left corner to the bottom-right-hand corner. Each ‘V’ represents the containing sides of each 3 x 3 enharmonic equivalence grid. The lowest, blue ‘V’ is the central blue diagonal line of Table 8.3; on either side of these are the intervals of a perfect fourth (five semitones – the ‘V’ to the left) and perfect fifth (seven semitones – the ‘V’ to the right), which are inversions of each other. The inversion pattern continues as one travels outward from the centre, displaying the rotational symmetry inherent from this angle.

To recapitulate, the Figures within this chapter represent different frameworks of intervals that lie in between notes. The shapes formed signify the resultant intervals grouped with their aural equivalents. The notes themselves are not displayed here, as they are placed along each axis. It must be stressed that the intervals, not the notes that are what really matter. As each theoretical device of pitch within music theory (as discussed in chapter eight of this thesis) can be measured in terms of interval sets, all complex musical structures would be mappable against these frameworks as different combinations of intervals presented at a given point in time. The figures in this section demonstrate all possible combinations of intervals at once, providing a canvas in which each musical device could be mapped at any given temporal pulse.

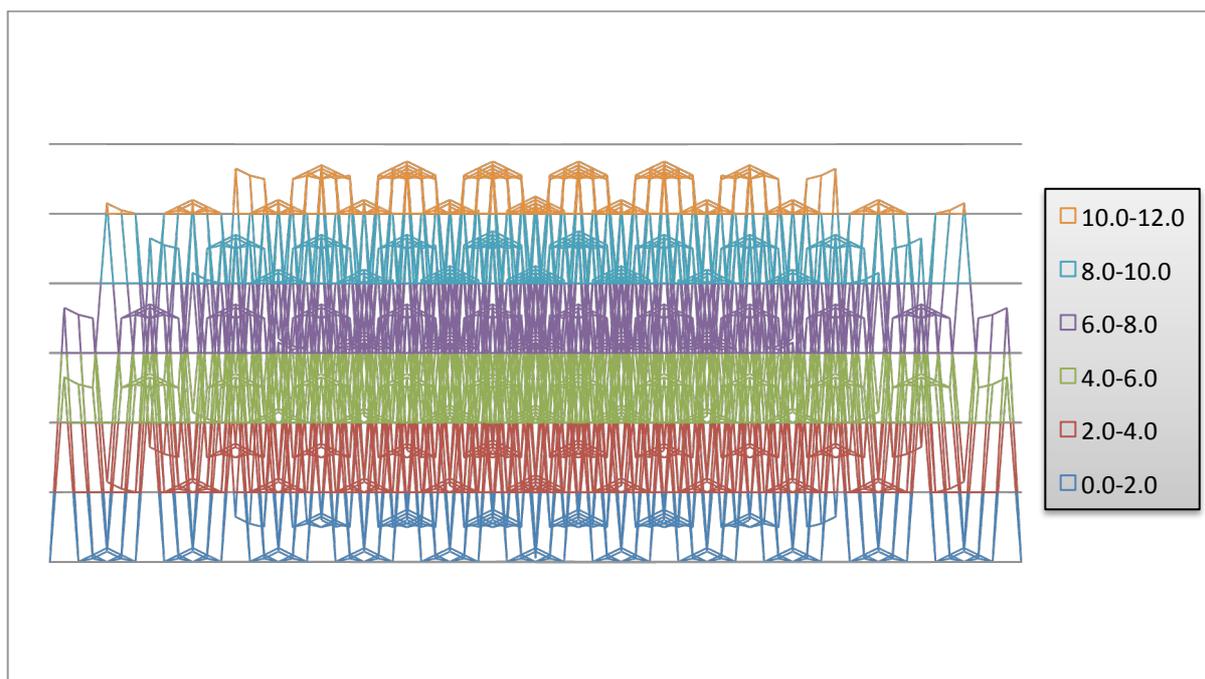


Figure 8.3.2: 2D Visualisation of Table 8.3(looking up its main bottom-left to top-right diagonal).

Figure 8.3.2 visualises Table 8.3 as if one were viewing from the bottom-left corner, looking up to the top-right-hand corner. This complex has not much to derive conceptually, save to derive some lines of symmetry, like the reflective line down its middle. The ellipsis in the middle of Figure 8.3.2 appears to have more density to it: the blue set of triangles at point zero (perfect unison) are also equivalent to twelve (perfect octave): this shape appears to be symmetrical from its very centre.

Figure 8.3.3 displays Table 8.3 from a top-down viewpoint, with added perspective in order to give it some depth. I found it terribly difficult to find a static angle in which I could display the framework clearly. From this it can be determined that further research and development shall have to be conducted outside this thesis in order to establish a visualisation system which may be fully comprehensible. This would require the use of virtualisation systems which could be programmed to show the combinations of intervals present within a piece as it were played. Such programming faculty would also enable the incorporation of analysis tools to label and categorise the musical instances being heard. In terms of educational visualisations, it may be too complex for a beginning undergraduate to derive any meaning from Figure 8.3.3, yet what is important is to continue such wireframe development until a suitable model can be made which encapsulates all theoretical materials at hand. Upon reaching such a juncture, equivalences can be removed and a simpler model designed to be used within university lecture theatres to demonstrate the bigger musical picture.

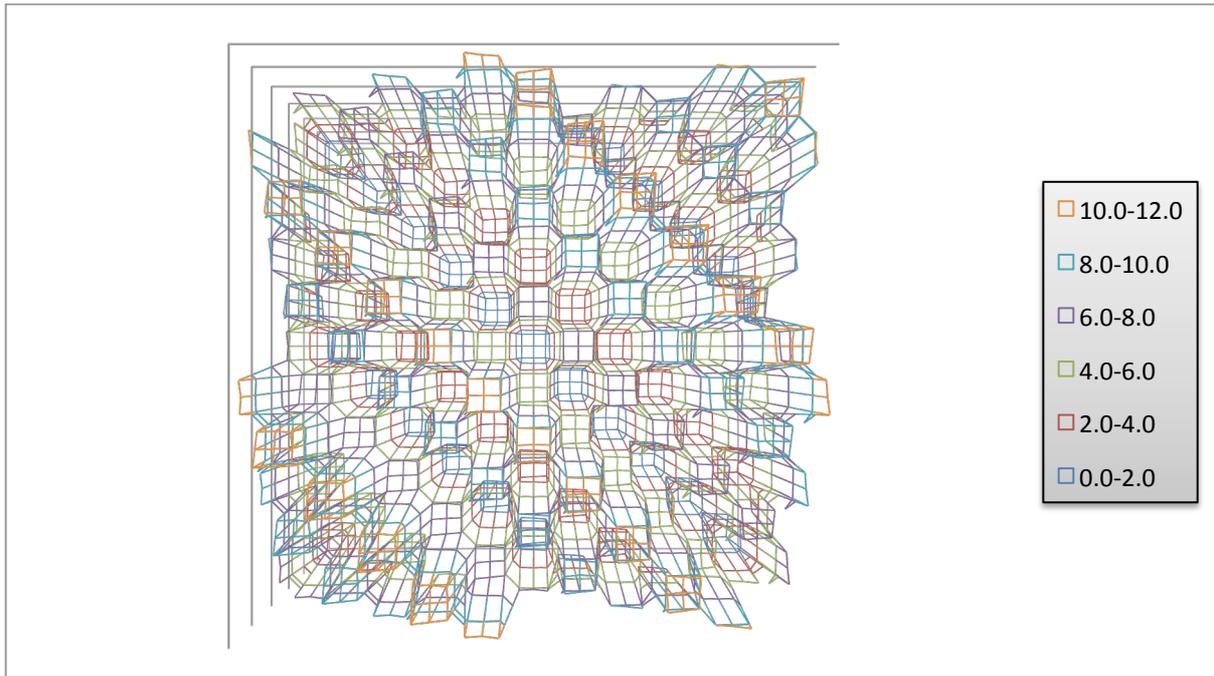


Figure 8.3.3: 3D Visualisation of Table 8.3 from a top-down viewpoint.

Figure 8.3.3 demonstrates the complexity of the interval structure when each axis is ordered within the cycle of fifths/fourths. For all its complexity, it is completely symmetrical and tessellating about the x-, y- and z-axes, as shown in Figure 8.3.4 (z-axis tessellation cannot be shown due to restrictions in software capability).

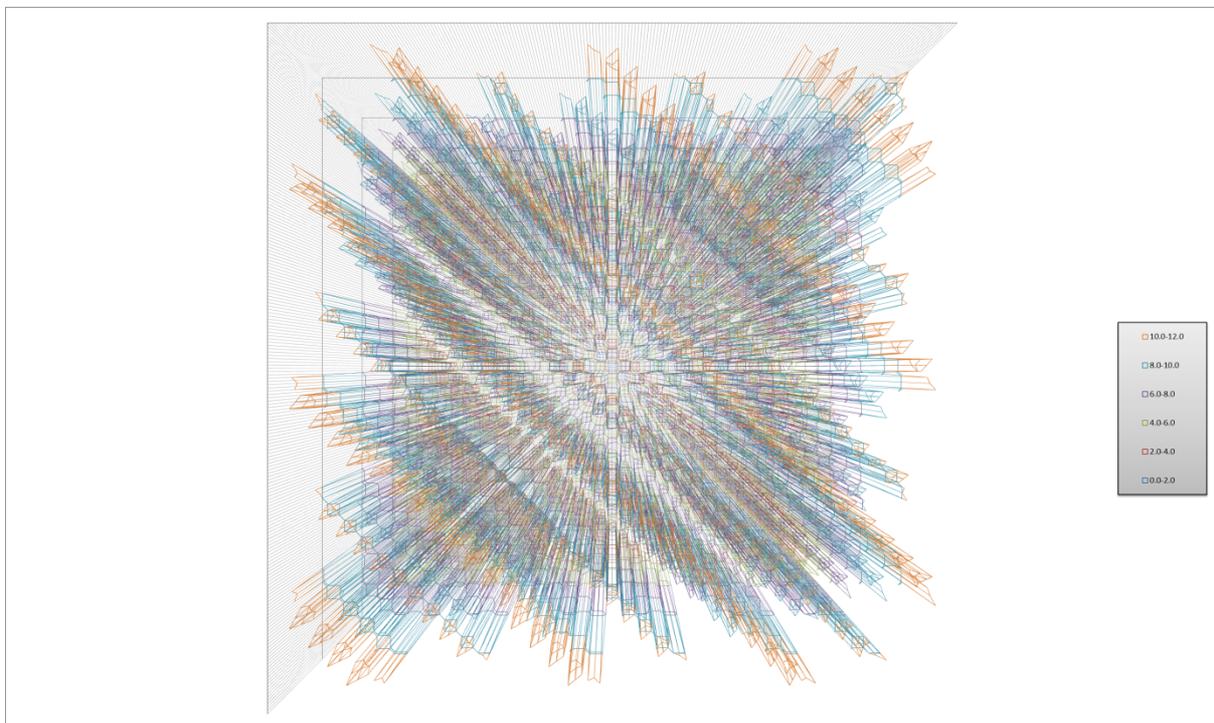


Figure 8.3.4: Figure 8.3.3 Tessellated in a 3 x 3 grid.

The tessellation means that it still complies with octave equivalence, and true to the enigmatic nature of music. Although Figure 8.3.4 displays the inherent symmetry within the diatonic system, it is rather difficult to comprehend. Each intersection represents an intervallic relationship between notes along the x- and y-axis of Table 8.3. What can be derived from these Figures is that the order of keys is arranged in a manner just as symmetrical as its chromatic counterpart. From many different viewpoints this shape is intertwined yet symmetrical. I have merely kept the perspective as such as to gain the best essence of its multidimensional nature. As with Figure 8.2.2, Figure 8.3.5 shows that this pattern may be converted to log in order to correlate with scientific properties of amplitude. Figure 8.3.5 looks down the octave diagonal in the same manner as Figure 8.3.1. Coincidentally, this shape also tessellates.

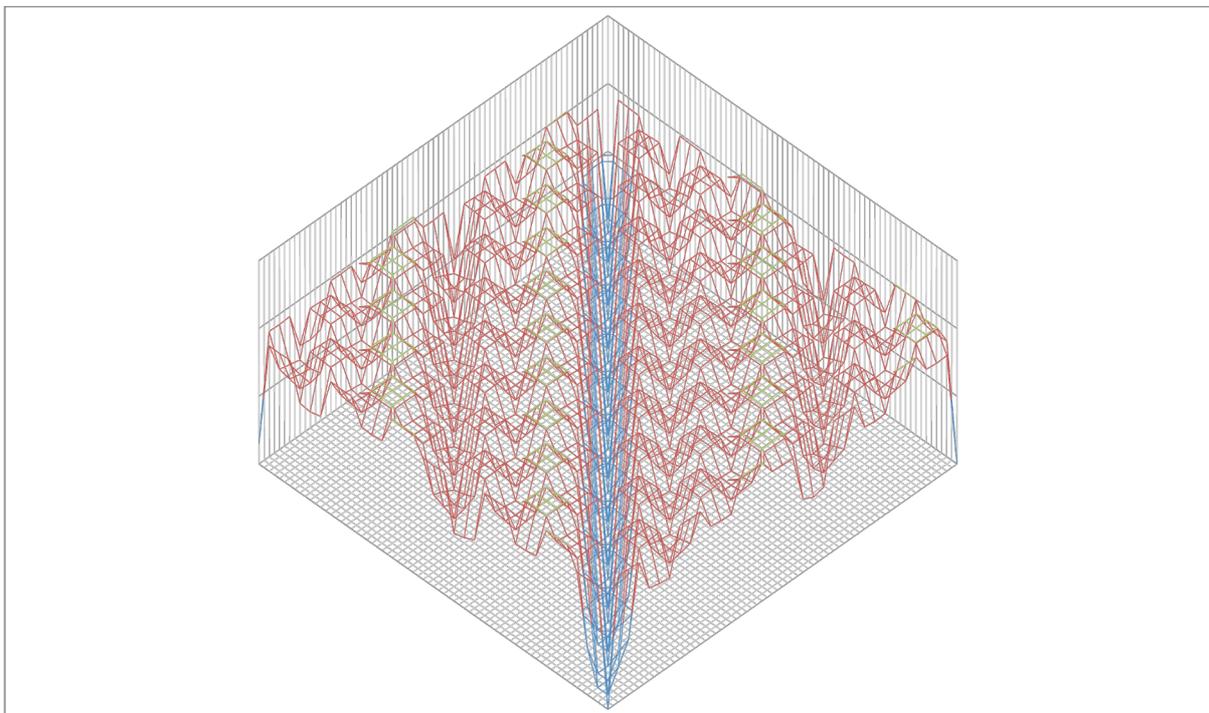


Figure 8.3.5: 3D Visualisation of Figure 8.3.1 with a Log Scale as the primary vertical axis.

Combining axes

The previous sections of this chapter mapped intervallic relationships by displaying the resultant amount of semitones when notes were compared against each other using the same ordering on the x- and y-axes. This section will apply similar principles to visualise the intervals inherent, yet will order notes along the x-axis in a chromatic ordering (such as in Table 8.2), and the y-axis will contain the cycle of fifths/fourths ordering (as used in Table 8.3). This combination

should provide a table which maps chromatic scales within its cycle of fifths ordering. In reference Figure 7.7 from chapter seven of this thesis; how it mapped the relationships between all scales. Much like Figure 7.7, as each diatonic scale is simply a sequence of melodic intervals derived from a chromatic scale, this setup would display all tonal centres simultaneously within a chromatic context. Table 8.4 shows such a correlation, giving insight to the intervallic relationships between chromatic and diatonic systems in the same manner as Figure 7.7 from chapter eight. As this relationship can be established, the underlying shape of visualisations throughout this chapter can be argued to be helical in nature.

	Ab	Gx	A	Bbb	A#	Bb	Cbb	Ax	B	Cb	B#	C	Dbb	Bx	C#	Db	Cx	D	Ebb	D#	Eb	Fbb	Dx	E	Fb	E#	F	Gbb	Ex	F#	Gb	Fx	G	Abb	G#	
Ab	PU	da7	a0	m2	da0	M2	d3	ta0	a2	m3	da2	M3	d4	ta2	a3	P4	da3	a4	d5	da4	P5	d6	ta4	a5	m6	da5	M6	d7	ta5	a6	m7	da6	M7	d0	a7	
Bx	td7	m6	dd7	qd0	d7	td0	qd2	m7	dd0	td2	d0	dd2	qd3	PU	d2	td3	m2	dd3	qd4	d3	td4	qd5	m3	dd4	qd5	d4	td5	qd6	P4	da5	td6	d5	dd6	qd7	d6	
C#	d6	a5	m6	dd7	m6	d7	td0	a6	m7	dd0	M7	d0	dd2	a7	PU	d2	a0	m2	dd3	M2	d3	td4	a2	m3	dd4	M3	d4	td5	a3	P4	da5	a4	d5	dd6	P5	
Db	P5	ta4	a5	m6	da5	M6	d7	ta5	a6	m7	da6	M7	d0	ta6	a7	PU	da7	a0	m2	da0	M2	d3	ta0	a2	m3	da2	M3	d4	ta2	a3	P4	da3	a4	d5	da4	
Ex	td4	m3	dd4	qd5	d4	td5	qd6	P4	da5	td6	d5	dd6	qd7	P5	d6	td7	m6	dd7	qd0	d7	td0	qd2	m7	dd0	td2	d0	dd2	qd3	PU	d2	td3	m2	dd3	qd4	d3	
F#	d3	a2	m3	dd4	M3	d4	td5	a3	P4	da5	a4	d5	dd6	da4	P5	d6	a5	m6	dd7	M6	d7	td0	a6	m7	dd0	M7	d0	dd2	a7	PU	d2	a0	m2	dd3	M2	
Gb	M2	ta0	a2	m3	da2	M3	d4	ta2	a3	P4	da3	a4	d5	ta3	da4	P5	ta4	a5	m6	da5	M6	d7	ta5	a6	m7	da6	M7	d0	ta6	a7	PU	da7	a0	m2	da0	
Ax	td0	m7	dd0	td2	d0	dd2	qd3	PU	d2	td3	m2	dd3	qd4	M2	d3	td4	m3	dd4	qd5	d4	td5	qd6	P4	da5	td6	d5	dd6	qd7	P5	d6	td7	m6	dd7	qd0	d7	
B	d7	a6	m7	dd0	M7	d0	dd2	a7	PU	d2	a0	m2	dd3	da0	M2	d3	a2	m3	dd4	M3	d4	td5	a3	P4	da5	a4	d5	dd6	da4	P5	d6	a5	m6	dd7	M6	
Cb	M6	ta5	a6	m7	da6	M7	d0	ta6	a7	PU	da7	a0	m2	ta7	da0	M2	ta0	a2	m3	da2	M3	d4	ta2	a3	P4	da3	a4	d5	ta3	da4	P5	ta4	a5	m6	da5	
Dx	td5	P4	da5	td6	d5	dd6	qd7	P5	d6	td7	m6	dd7	qd0	M6	d7	td0	m7	dd0	td2	d0	dd2	qd3	PU	d2	td3	m2	dd3	qd4	M2	d3	td4	m3	dd4	qd5	d4	
E	da	a3	P4	da5	a4	d5	dd6	da4	P5	d6	a5	m6	dd7	da5	M6	d7	a6	m7	dd0	M7	d0	dd2	a7	PU	d2	a0	m2	dd3	da0	M2	d3	a2	m3	dd4	M3	
Fb	M3	ta2	a3	P4	da3	a4	d5	ta3	da4	P5	ta4	a5	m6	qa4	da5	M6	ta5	a6	m7	da6	M7	d0	ta6	a7	PU	da7	a0	m2	ta7	da0	M2	ta0	a2	m3	da2	
Gx	dd2	PU	d2	td3	m2	dd3	qd4	M2	d3	td4	m3	dd4	qd5	M3	d4	td5	P4	da5	td6	d5	dd6	qd7	P5	d6	td7	m6	dd7	qd0	M6	d7	td0	m7	dd0	td2	d0	
A	d0	a7	PU	d2	a0	m2	dd3	da0	M2	d3	a2	m3	dd4	da2	M3	d4	a3	P4	da5	a4	d5	dd6	da4	P5	d6	a5	m6	dd7	da5	M6	d7	a6	m7	dd0	M7	
Bbb	M7	ta6	a7	PU	da7	a0	m2	ta7	da0	M2	ta0	a2	m3	da0	da2	M3	ta2	a3	P4	da3	a4	d5	ta3	da4	P5	ta4	a5	m6	qa4	da5	M6	ta5	a6	m7	da6	
Cx	dd6	P5	d6	td7	m6	dd7	qd0	M6	d7	td0	m7	dd0	td2	M7	d0	dd2	PU	d2	td3	m2	dd3	qd4	M2	d3	td4	m3	dd4	qd5	M3	d4	td5	P4	da5	td6	d5	
D	d5	da4	P5	d6	a5	m6	dd7	da5	M6	d7	a6	m7	dd0	da6	M7	d0	a7	PU	d2	a0	m2	dd3	da0	M2	d3	a2	m3	dd4	da2	M3	d4	a3	P4	da5	a4	
Ebb	a4	ta3	da4	P5	ta4	a5	m6	qa4	da5	M6	ta5	a6	m7	qa5	da6	M7	ta6	a7	PU	da7	a0	m2	ta7	da0	M2	ta0	a2	m3	qa0	da2	M3	ta2	a3	P4	da3	
Fx	dd3	M2	d3	td4	m3	dd4	qd5	M3	d4	td5	P4	da5	td6	a4	d5	dd6	P5	d6	td7	m6	dd7	qd0	M6	d7	td0	m7	dd0	td2	M7	d0	dd2	PU	d2	td3	m2	
G	m2	da0	M2	d3	a2	m3	dd4	da2	M3	d4	a3	P4	da5	da3	a4	d5	da4	P5	d6	a5	m6	dd7	da5	M6	d7	a6	m7	dd0	da6	M7	d0	a7	PU	d2	a0	
Abb	a0	ta7	da0	M2	d3	a2	m3	qa0	da2	M3	ta2	a3	P4	qa2	da3	a4	ta3	da4	P5	ta4	a5	m6	qa4	da5	M6	ta5	a6	m7	qa5	da6	M7	ta6	a7	PU	da7	
B#	dd7	M6	d7	td0	m7	dd0	td2	M7	d0	dd2	PU	d2	td3	a0	m2	dd3	M2	d3	td4	m3	dd4	qd5	M3	d4	td5	P4	da5	td6	a4	d5	dd6	P5	d6	td7	m6	
C	m6	da5	M6	d7	a6	m7	dd0	da6	M7	d0	a7	PU	d2	da7	a0	m2	da0	M2	d3	a2	m3	dd4	da2	M3	d4	a3	P4	da5	da3	a4	d5	da4	P5	d6	a5	
Dbb	a5	qa4	da5	M6	ta5	a6	m7	qa5	da6	M7	ta6	a7	PU	qa6	da7	a0	ta7	da0	M2	ta0	a2	m3	qa0	da2	M3	ta2	a3	P4	qa2	da3	a4	ta3	da4	P5	ta4	
E#	dd4	M3	d4	td5	P4	da5	td6	a4	d5	dd6	P5	d6	td7	a5	m6	dd7	M6	d7	td0	m7	dd0	td2	M7	d0	dd2	PU	d2	td3	a0	m2	dd3	M2	d3	td4	m3	
F	m3	da2	M3	d4	a3	P4	da5	da3	a4	d5	da4	P5	d6	ta4	a5	m6	da5	M6	d7	a6	m7	dd0	da6	M7	d0	a7	PU	d2	da7	a0	m2	da0	M2	d3	a2	
Gbb	a2	qa0	da2	M3	ta2	a3	P4	qa2	da3	a4	ta3	da4	P5	qa3	ta4	a5	qa4	da5	M6	ta5	a6	m7	qa5	da6	M7	ta6	a7	PU	qa6	da7	a0	ta7	da0	M2	ta0	
A#	dd0	M7	d0	dd2	PU	d2	td3	a0	m2	dd3	M2	d3	td4	a2	m3	dd4	M3	d4	td5	P4	da5	td6	a4	d5	dd6	P5	d6	td7	a5	m6	dd7	M6	d7	td0	m7	
Bb	m7	da6	M7	d0	a7	PU	d2	da7	a0	m2	da0	M2	d3	ta0	a2	m3	da2	M3	d4	a3	P4	da5	da3	a4	d5	da4	P5	d6	ta4	a5	m6	da5	M6	d7	a6	
Cbb	a6	qa5	da6	M7	ta6	a7	PU	qa6	da7	a0	ta7	da0	M2	qa7	ta0	a2	qa0	da2	M3	ta2	a3	P4	qa2	da3	a4	ta3	da4	P5	qa3	ta4	a5	qa4	da5	M6	ta5	
D#	dd5	a4	d5	dd6	P5	d6	td7	a5	m6	dd7	M6	d7	td0	a6	m7	dd0	M7	d0	dd2	PU	d2	td3	a0	m2	dd3	M2	d3	td4	a2	m3	dd4	M3	d4	td5	P4	
Eb	P4	da3	a4	d5	da4	P5	d6	ta4	a5	m6	da5	M6	d7	ta5	a6	m7	da6	M7	d0	a7	PU	d2	da7	a0	m2	da0	M2	d3	ta0	a2	m3	da2	M3	d4	a3	
Fbb	a3	qa2	da3	a4	ta3	da4	P5	qa3	ta4	a5	qa4	da5	M6	qa4	da5	M6	ta5	a6	m7	qa5	da6	M7	ta6	a7	PU	qa6	da7	a0	ta7	da0	M2	qa7	ta0	a2	qa0	da2
G#	d2	a0	m2	dd3	M2	d3	td4	a2	m3	dd4	M3	d4	td5	a3	P4	da5	a4	d5	dd6	P5	d6	td7	a5	m6	dd7	M6	d7	td0	a6	m7	dd0	M7	d0	dd2	PU	

Number of Semitones
0
1 or 11
2 or 10
3 or 9
4 or 8
5 or 7
6

Unison
Minor 2nd
Major 2nd
Minor 3rd
Major 3rd
Perfect 4th
Tritone
Perfect 5th
Minor 6th
Major 6th
Minor 7th
Major 7th
Perfect 8ve

Table 8.4: An interval matrix, ordered chromatically along the x-axis and tonally along the y-axis.

Just like in Tables 8.2 and 8.3, Table 8.4 displays the intervals between notes from the y-axis up to the notes across the x-axis. The colour coding remains the same as for Table 8.4 as was the case with Tables 8.2 and 8.3, displaying aural equivalences and inversions; the shorthand

interval nomenclature has also remained the same. The Ab/G# ‘border’ still remains as the only combination of notes to not yield a 3 x 3 enharmonic equivalence grid. Looking for patterns that are present along horizontal, vertical and diagonal lines will aid to determine whether the arrangement of axes contain similarities to previous interval frameworks.

Reading Table 8.4 horizontally from left to right will yield an increase in interval by a semitone. Looking across the length of any given horizontal will demonstrate each interval inversion can be found by rotating about either octave/unison or tritone 3 x 3 equivalency grids. Take any horizontal band and notice how many 3 x 3 grids (or 3 x 2 and vice versa if moving across the ‘border’) to the left or right of the blue or tan boxes. The purple, red, orange, yellow or green grid locations contain a visible pattern about the blue or tan boxes. Thus, each horizontal band contains two points of rotational symmetry. Interestingly, the pattern about these two points of symmetry also occurs along the vertical bands. Reading Table 8.4 down any vertical band (from top to bottom) produces a continuous interval sequence of perfect fifths (seven semitones); reading from the bottom-up, the pattern moves in perfect fourths (five semitones). The relationship between blue and tan equivalency grids is of particular interest in Table 8.4; as both blue grid (octave/unison enharmonic equivalency – representing zero or twelve semitones) and tan grid (tritone enharmonic equivalency – representing six semitones) are points of rotational symmetry to vertical and horizontal bands. On any given vertical or horizontal plane, the tan and blue grids are six grids away from each other. However, on the bottom left-to-top-right diagonal, these grids are alternating. The alternating manner of the tritone diagonal was a point of interest in Table 8.2; yet in Table 8.4, it is not simply alternating inversions of itself – it is alternating with its diametric opposition. In fact, all diagonals are behaving in this manner – alternating with intervals six semitones away. Where the interval qualities are linked in such a manner about this diagonal, the perpendicular diagonal (from top-left-to-bottom-right) behaves in a different manner. Across this diagonal, one will instead find sequences of minor sixth intervals (eight semitones). Reading in the opposite direction (bottom-right-to-top-left) provides interval sequences of major third intervals (four semitones). Looking for similarities with other points of interest derived from previous tables continues the search for consistencies with each revision.

Taken to extremes, the quintuple-augmented fourth and quintuple-diminished fifth intervals are still within close proximity to the Ab/G# ‘border’, yet are more central; each are flanking the central vertical band, which also happens to be the note D, consistent with Table 8.3. Interval inversions are found to be symmetrical 180 degrees about this central point. If two models were superimposed on top of each other at this rotation, all values would equate to twelve semitone

intervals, and due to octave equivalence, be changed to zero semitones (perfect unison) and simply disappear. This property has been found within each revision thus far. With the above considerations taken into account, it appears that Table 8.4 is as complex as Table 8.3. There are multiple points of symmetry, yet they all seem to be of a rotational nature instead of being mirror images as per some aspects of previous tables. In order to cater for this, I have provided two-dimensional shots from various angles in order to ascertain a cross-section down each diagonal (Figures 8.4 and 8.4.1), before supplying a three-dimensional top-down view (this is shown in Figure 8.4.2). The colour scheme of Figures 8.4; 8.4.1; 8.4.2 and 8.4.3 do not correspond with Table 8.4. However, the colour schemes of these Figures do correlate with all prior Figures in this chapter. It should be noted that Figures 8.4.1, 8.4.2 and 8.4.3 are actually the same visualisation as viewed from different positions.

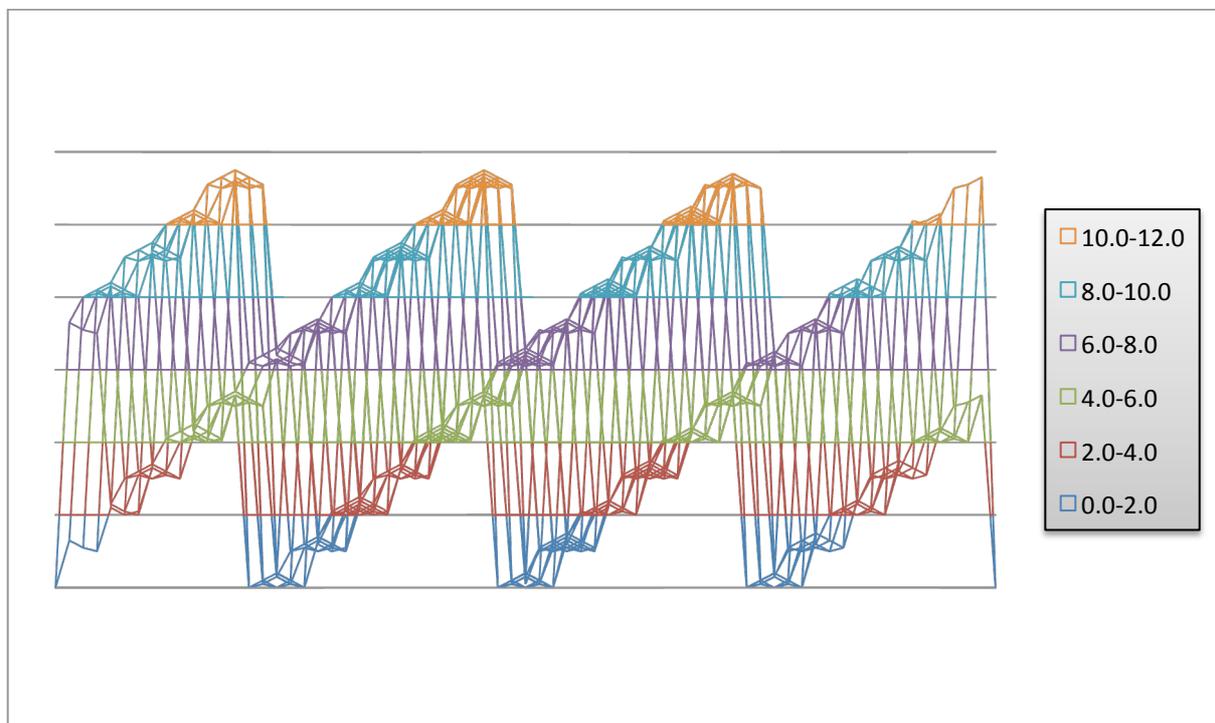


Figure 8.4.1: 2D Visualisation of Table 8.4(looking up its main bottom-left to top-right diagonal).

Figure 8.4.1 serves the same purpose as Figure 8.3.1 to its cause: to take a look at the simplest visualisations in order to ascertain key features of the greater structure. Figure 8.4.1 peers down the alternating bottom-left-to-top-right diagonal, which are signified as the central blue to purple triangles. The ‘rhomboid’ shapes loosely pertain to the augmented triad symmetrical octave division, of which there are four different types as discussed in chapter eight.

These visualisations are artistic representations of the interactions intervals have with themselves whilst inherent in a given theoretical context. What this means is that the shapes presented in this

chapter demonstrate the nature of the musical context, rather than defining any objective geometry. The latter is possible; these figures can be employed by plotting relevant intervals played in a piece of music against these shapes for each temporal subdivision as reference frameworks and through the use of analytical techniques, triangulate correlations. This type of computerised musical analysis tool could potentially reference databases of networked musical analytics in order to determine commonalities between stylistic choices, or compositional preference, for instance. However, as there are more musical concepts to add to these foundational frameworks, such an endeavour may provide fruitless results for the while and is therefore not necessary to the contentions that drive this thesis.

Figure 8.4.2 attempts to cross-examine this visualisation by taking the perpendicular diagonal to Figure 8.4.1. Recalling from the description of Table 8.4, these diagonals are alternating by tritone (six semitones) with each other. The resulting interconnectivity reveals a lot of spiralling patterns from this angle.

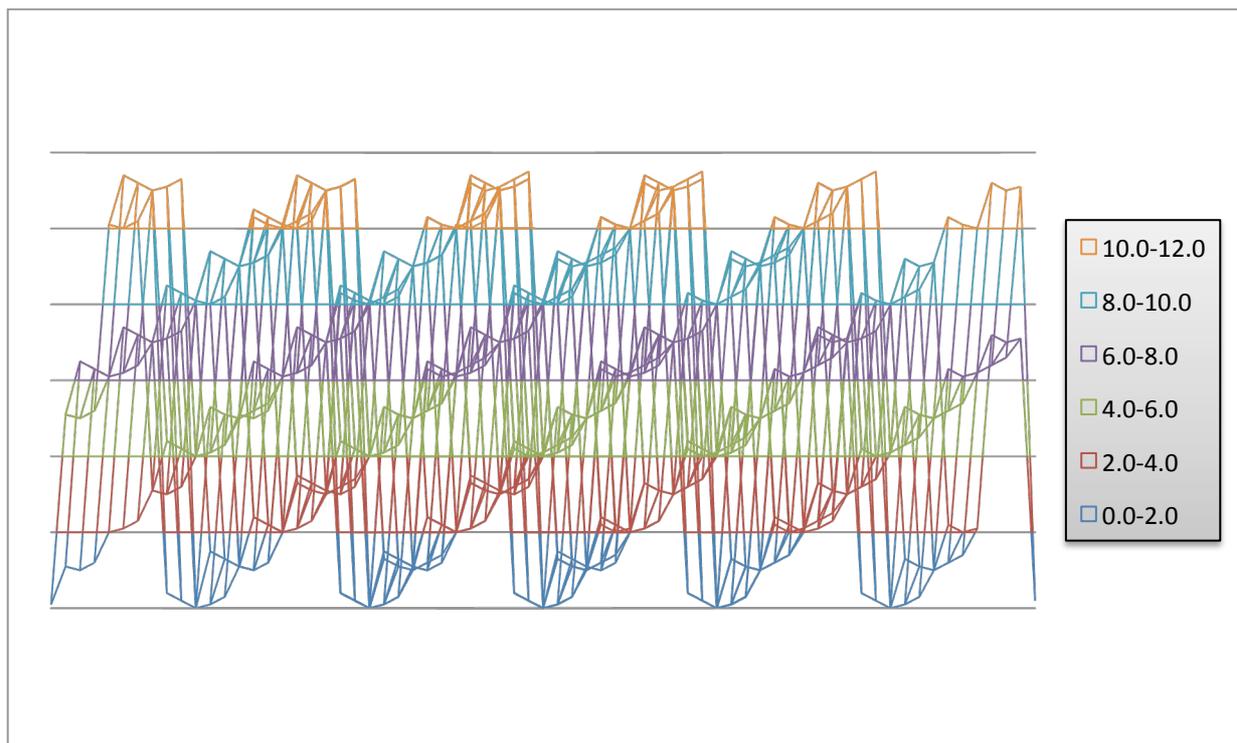


Figure 8.4.2: 2D Visualisation of Table 8.4 (looking down its main top-left to bottom-right diagonal).

The main idea at this juncture is to determine the inherent nature within these musical frameworks. So far, all enharmonically expanded tables (Tables 8.2, 8.3 and 8.4) have been completely translatable and tessellating about x-, y- and z-axes; each have contained multiple axes of symmetry (linear or rotational) and have all contained one of each interval quality and

inversion without duplicating anywhere on either horizontal or vertical planes. These features cater to the potentially infinitely interpretational nature of the musical phenomenon, as commonalities exist between each row and column, yet each is unique in its own right. It is my belief that these visualisations only determine the nature of the phenomenon, rather than map the ‘actuality’ of their geometric shape. Recall the rotational symmetry of Table 8.4; as interval inversions each contain two axes of symmetry about the tritone and octave/unison on vertical and horizontal planes, yet are also a constant alternating diagonal of symmetrical points. The only plausible geometric shapes which behave in a similar way involve sine and cosine waves, unit circles and trigonometric functions. This association is for future investigation, as correlating the world of soundwaves from scientific and mathematical standpoints with the internal substructures of music theory may require a separate dissertation.

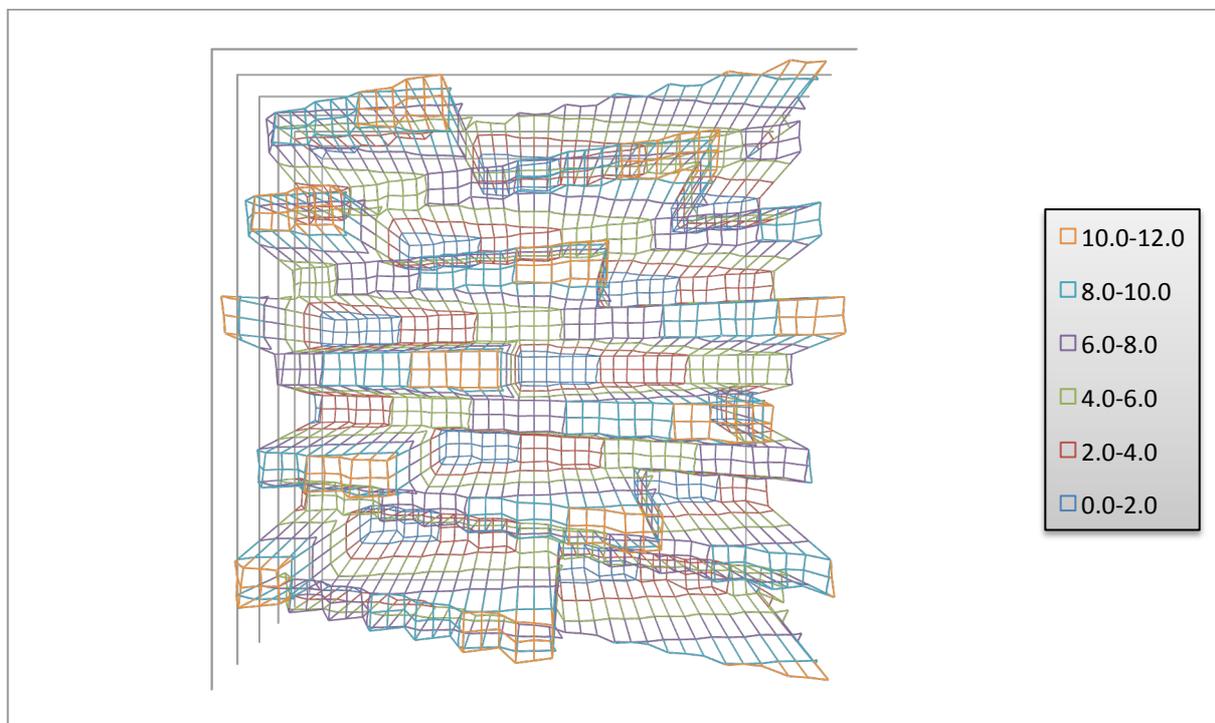


Figure 8.4.3: 3D Visualisation of Table 8.4 from a top-down viewpoint.

The resultant visualisation of Figure 8.4.3 is the combination of chromatic and cycle of fifths/fourths orderings of the axes. The easiest way to see this is as ‘strips’ of horizontal chromatic orderings which begin at different points of the vertical plane. There are no replications of any particular interval on a given horizontal or vertical; and two axes of symmetry are present at each of these planes. These points of rotational symmetry are the intervals that are zero semitones (perfect unison/octave) or six semitones above zero (augmented fourth/diminished fifth/tri-tone). Figure 8.4.3 can be seen as strips of chromatic orderings, and

its overall shape is also directly translatable to Figure 7.7 from chapter seven of this thesis on a helical manner. Thus, Figure 8.4.3 shows the interval structure which supports a circular display of conceptual information as discussed in chapter eight of this volume.

As the combination of axis-orderings can be seen to directly support models from this dissertation's chapter eight, it is Table 8.4 which requires simplification in order to employ as a tool of common frameworks in which students may use to understand the bigger musical pictures in their own manner. The idea is to get to understand the nature of music through visual representations of the theoretical constructs: as one makes their own conclusions as to the manner in which music operates, the more they will inform their own musical understandings and thus assist to inform musicianship as discussed within chapter five of the present work.

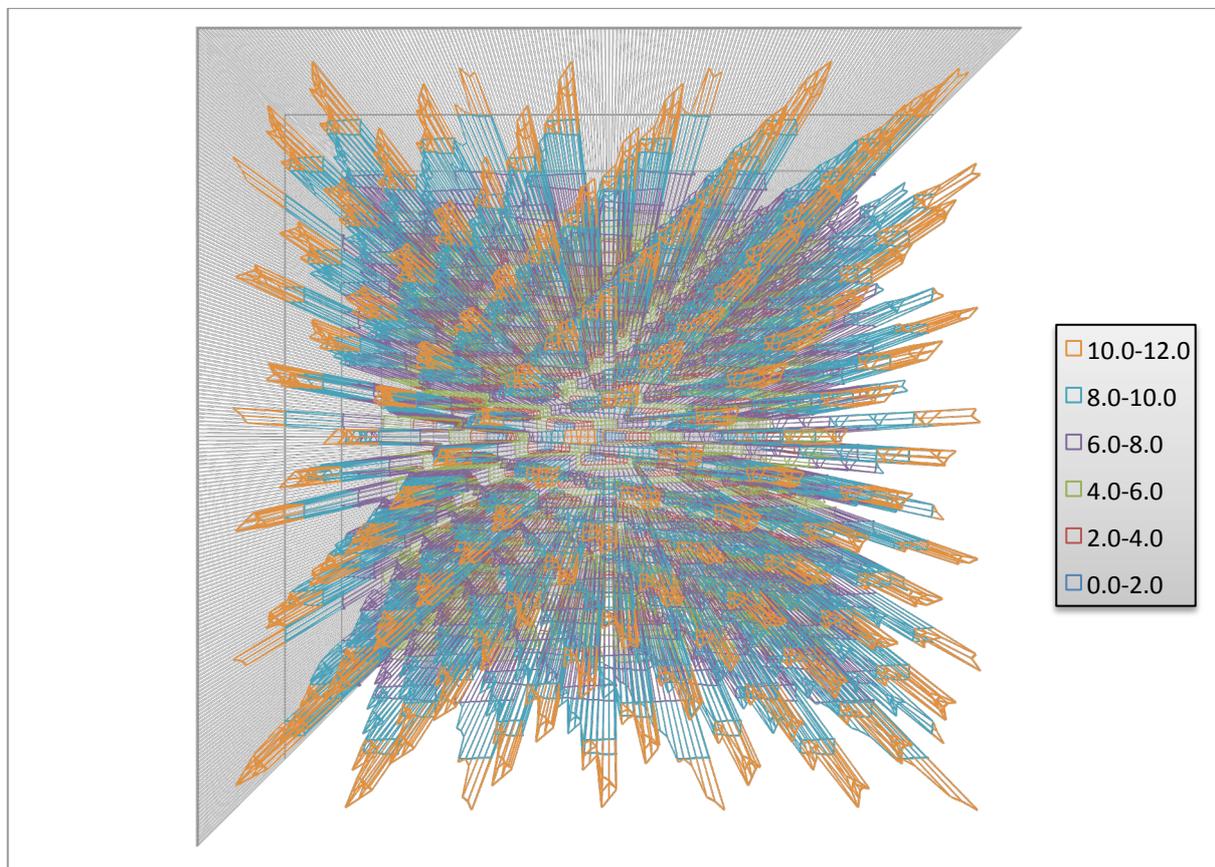


Figure 8.4.4: Figure 8.4.3 tessellated in a 3 x 3 grid.

To reiterate, the purpose of the tessellation is to confirm octave equivalence which means that simplification to a single octave is valid. Figure 8.4.4 tests to see whether Figure 8.4.3 is directly tessellating about the x -, y - and z -axes. As can be seen, it too, is completely self-replicating; demonstrating the model's adherence to octave equivalence, allowing simplifications to be made. Once again, due to restrictions in the capability of software, I am not able to visualise the

tessellation about the z-axis. However, due to its octave equivalence compliance, wherever there lays a point representative of a perfect unison interval, it can also be seen as being twelve semitones above zero. This would create a new layer above the current one shown: the model is completely three-dimensionally tessellating. It is interesting that Figure 8.4.4 appears to be in four sections when it is in fact in nine sections; this is due to the natural rotational symmetry of Table 8.4 as discussed earlier in this section.

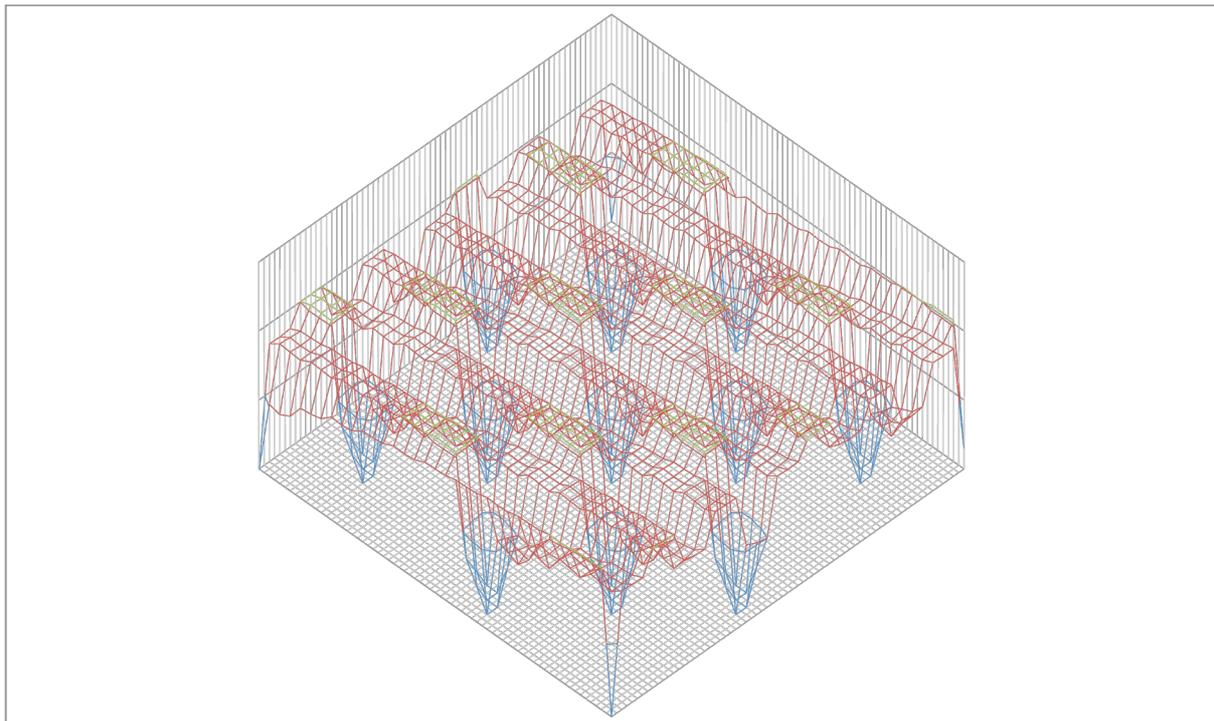


Figure 8.4.5: 3D Visualisation of Figure 8.4.3 with a Log Scale as the primary vertical axis.

Figure 8.4.3 shows Figure 8.4.3 with the primary vertical axis using a log scale. This assists to reduce the complexity in comprehension, and knowing that this shape also tessellates gives an alternate model to viewing the nature of music. As amplitude works in log, it is useful to see whether this conversion is possible.

As deliberated throughout this chapter thus far, these are all latent structures which illustrate the pitch choices available to composers, students and other musicians at any given beat in a piece of western art music. There is a goal to simplify such visualisation tables in order to be able to utilise within tertiary education lectures or classes. As Tables 8.2, 8.3 and 8.4 have all been expanded to include double sharps and double flats; it would be possible to reduce the correlations as in Table 8.1. This would still require the use of enharmonic equivalences; for instance, G# and Ab; Eb and F or B# and C. These equivalencies may be reduced further if completely translated into numerals, as the number could refer to corresponding letter names.

This is borrowing analysis techniques from the modernist school of musical thought: where each note value (and subsequent enharmonic equivalent) is given a value between zero and eleven. Table 8.4 could actually be converted this way and Table 8.5 is the result of this conceptual dilution.

		Note Value												Note Value								
		8	9	10	11	0	1	2	3	4	5	6	7	8	Enharmonic Equivalents							
		Ab	Bb	Cb	Db	Eb	Gb	Ab	G#	A	A#	B	C	C#	D	D#	E	F	F#	G	G#	Enharmonic Equivalents
Note Value	Enharmonic Equivalents	8	G#	Ab	0	1	2	3	4	5	6	7	8	9	10	11	0	Cycle of Fifths/Fourths ordering of Intervals (distance in number of semitones)	Unison			
		1	Db	C#	7	8	9	10	11	0	1	2	3	4	5	6	7		Minor 2nd			
		6	Gb	F#	2	3	4	5	6	7	8	9	10	11	0	1	2		Major 2nd			
		11	Cb	B	9	10	11	0	1	2	3	4	5	6	7	8	9		Minor 3rd			
		4		E	4	5	6	7	8	9	10	11	0	1	2	3	4		Major 3rd			
		9		A	11	0	1	2	3	4	5	6	7	8	9	10	11		Perfect 4th			
		2		D	6	7	8	9	10	11	0	1	2	3	4	5	6		Tritone			
		7		G	1	2	3	4	5	6	7	8	9	10	11	0	1		Perfect 5th			
		0		C	8	9	10	11	0	1	2	3	4	5	6	7	8		Minor 6th			
		5		F	3	4	5	6	7	8	9	10	11	0	1	2	3		Major 6th			
		10	A#	Bb	10	11	0	1	2	3	4	5	6	7	8	9	10		Minor 7th			
		3	D#	Eb	5	6	7	8	9	10	11	0	1	2	3	4	5		Major 7th			
8	G#	Ab	0	1	2	3	4	5	6	7	8	9	10	11	0	Perfect 8ve						
		Chromatic Ordering of Intervals (distance in number of semitones)																				

Table 8.5: A simplified version of Table 8.4, adopting the use of numerals as note values.

Table 8.5, as with all tables in this chapter; display the intervals between notes from the y-axis up to the corresponding note on the x-axis. The colour coding has been suited to correlate with Table 8.4, making the comparisons easier to manage. Comparing Table 8.5 to Table 8.4, the colour distributions, and hence all horizontal, vertical and diagonal relationships remain the same. Inversions are still located at 180 degrees about the central point, and there are no repetitions of digits along any horizontal or vertical plane. The Ab/G# ‘border’, quintuple augment fourth and quintuple diminished fifth have all disappeared as a result of simplification. Patterns can be found across horizontal planes pertain to melodic conventions, such as scale and links to potential use in teaching and learning. For example, in any given tonal centre (y-axis / vertical), the following intervals make up the major scale: 0, 2, 4, 5, 7, 9 and 11. The corresponding notes found via chromatic orderings (x-axis / horizontal) will be the degrees of

the selected tonal centre. Likewise, similar structures may be identified within this matrix; for instance, chordal qualities. In any given horizontal, the x-axis notes that correspond to the intervals 0, 4 and 7 will be that tonal centre's tonic triad; and 7, 11, 2 and 4 will be the dominant seventh chord. Such intervallic patterns can be seen to overlap with other tonal centres, and so the concept of pivoting may be utilised. In such a manner, all pitch concepts that were explored in chapter seven of this thesis can utilise this interval matrix in order to demonstrate their effect within the context of the bigger musical picture. Table 8.5 does make things easier to comprehend in this manner; yet slightly changes the way in which the visualisation appears (this can be seen in Figure 8.5).

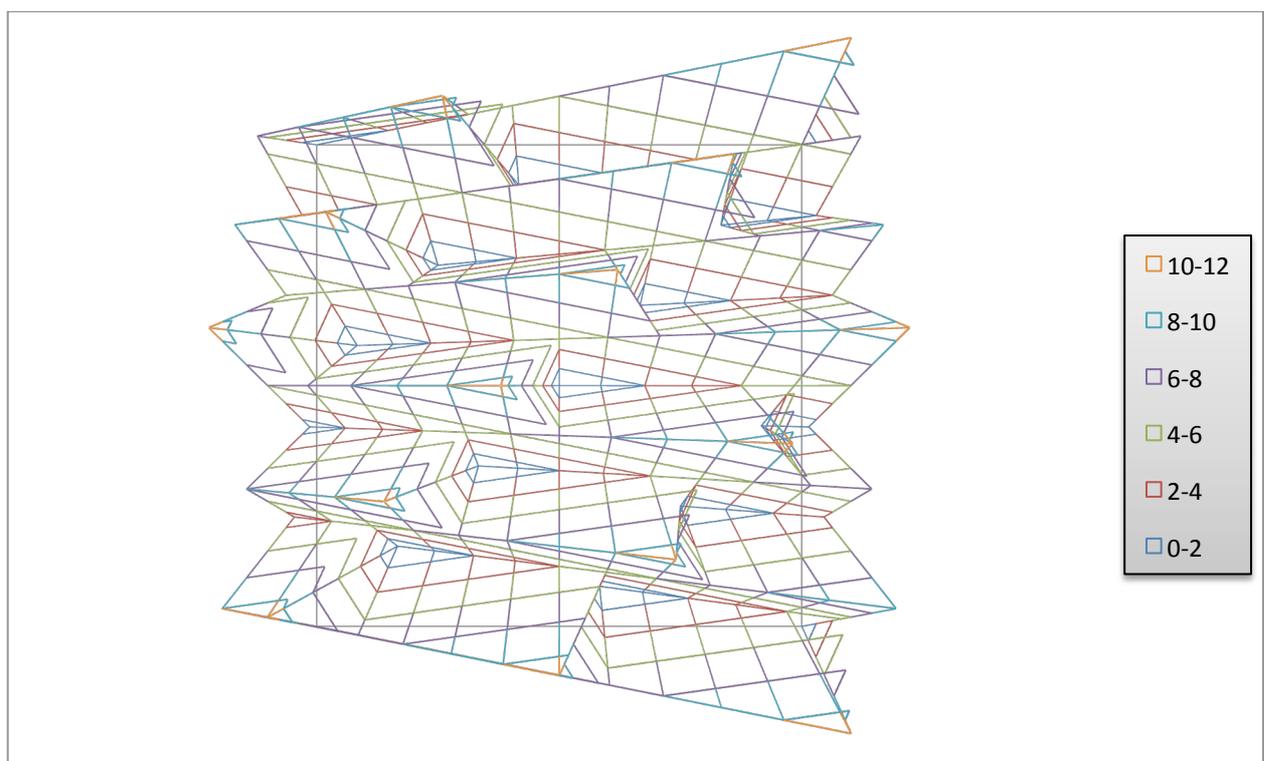


Figure 8.5: A top-down visualisation of Table 8.5: a simplified version of Figure 8.4.3.

Figure 8.5 shows a simpler version of Figure 8.4.3: as there are not as many points of correlation, a less distinct model emerges. It has already been established that this type of visualisation would only really give insight into the nature of this chromatic context, yet still correspond to the pitch concepts covered in chapter eight of this thesis. As pitch structures can be superimposed within Table 8.5 suggests that the shape of Figure 8.5 aligns with Figure 7.7 in chapter seven.

This section has sought to describe my perception of the core foundational aspects of western music theory, and how they form the greater musical picture. This has been done by linking

musical aspects of previous chapters into the intervallic framework models discussed. These visualisations hope to assist the beginning student to see, utilise and understand the greater musical picture in terms of its formal internal frameworks. These are the same formal frameworks as discussed within chapter five, of which personal interpretations are encouraged to be formed with relevance to personal preferences. It is believed that students who hold a strong understanding of the foundational concepts displayed will have an easier time piecing together more complex connections required as their study progresses. With such a visualised formal reference to utilise, it is hoped the educator will also be assisted, utilising approaches discussed within chapter seven of the current volume.

IV – Tethering Concepts

9. Translating the Research

This chapter will elucidate aspects of a learner-centred approach to western music theory as taught in university contexts. This aim is facilitated by findings and explications throughout this thesis. This chapter first explores the contentions and research questions that have driven my investigation, after which recommendations are made in light of such discussions. The proceeding chapter will discuss implications and possible future directions of the research.

I have used two contentions and three research questions to develop and drive this thesis. These contentions and questions underlay this thesis throughout its various chapters and were conceived throughout my experiences as a professional performer and composer of western music and as an educator of university level western music theory. My contentions were:

- The teaching and learning of western music theory in Australian universities is facilitated by inherited traditions that have remained largely unchallenged over time.
- Understanding western music theory enables the undertaking of any musical activity.

The teaching and learning of western music theory has been traditionally approached using teacher-centred paradigms. It has been approached in this way as inherited teaching practices and traditions passed down throughout history from England to Australia. Investigations within chapter seven show that pedagogical resources from over one hundred years ago approach and deliver the music theory subject matter with methods similar to today. As explored in the literature review, the Australian educational climate has encountered a paradigm shift in the way teaching is approached through recent history. Instead of delivering through teacher-centred paradigms, there has been a shift toward the development of learner-centred teaching approaches. This shift is in part due to developments in understanding how individuals work within societies and how learners' piece together understandings of reality perceived as applicable to idiosyncratic life worlds. The structural underlay of western music theory is a socially constructed phenomenon to which each learner derives idiosyncratic understanding in terms of purpose, function and practical application. Learner-centred teaching approaches aim to facilitate individual development through holistic and pluralistic inclusion of dynamic and

interactive sociocultural frameworks. Western music theory has been perceived (through autoethnographical examinations in chapter four) to suit learner-centred teaching, as music theory structure behaves in a similar manner to this educational approach. Investigation into the development of learner-centred approaches to university music theory bridges a critical research gap within Australian educational research.

Within Australian university education, there are no established music theory qualification frameworks or agreed curriculum, and as such, the responsibility of course construction and educational approach falls upon an individual educator. There is very little within the research literature that challenges the ways in which music theory is learned or taught. Many educators simply continue the traditions in which music theory has already been taught in order to meet course demands. This cycle of repeated traditions has brought about a situation where the justification of teaching and learning music theory is constantly questioned in regard to its perceived relevance. I maintain that music theory can develop independent musical thought and hence contribute to core development as learners come to understand structural and contextualising aspects of music. This experience has driven this thesis, and has been formed throughout my career as a music theory educator.

The music education paradigms examined in this thesis are approaches adopted within Australian secondary schooling. Within chapter six, the Aesthetic and Praxial paradigms have been examined in the context of perceived the apparent general teaching model of university music theory. Chapter six discusses the relative strengths and weaknesses of each paradigm. The Aesthetic paradigm focuses on deriving educational approach in terms of music's perceived function, and seeks to articulate what I perceive to be the underlying values of music's function to humanity as an art form. The strength of such an outlook can help identify underlying values of music theory in understanding cultural musical structure and communication of individual experience. The perceived weakness of the Aesthetic is that it views the phenomenon as a monolith prescribed to society rather than a framework where individuals perceive function applicable to their life world.

The Praxis paradigm approaches the phenomenon of music by asking, 'what can humans 'do' with music?' From this perspective, the relevance of music to humanity is seen in terms of practical-based skillsets by which individuals can express themselves to others. The strength of this paradigm is in its individual focus toward practice-based disciplines that can provide musical experiences that facilitate musical understanding. The weakness inherent to this

perception is that music theory is primarily seen as an information-based skillset that helps contextualise understandings and hence may not be perceived as something that can be ‘done’ with music in a practical sense per se. A balance between the two paradigms is required to facilitate a learner-centred teaching approach to music theory. These two paradigms can be simplified as informing learners in terms of, ‘what information does music theory teach?’ (Aesthetic), and ‘how can this information be used?’ (Praxis).

Chapter four examines how I perceive the learning of music theory to occur and the means by which such perceptions may be facilitated from a learner-centred approach. It can be argued that information- and practice-based skillsets can be seen as constituent components to musicianship and musicality respectively. From this angle, musicianship is seen as the overarching understanding one holds of music using information-based skillsets. Musicality is seen as the act of drawing from information-based skillsets in order to facilitate and direct practice-based skillsets. Consequentially, there is a symbiotic relationship between musicianship and musicality, as information-based skillsets can use practice-based skillsets to form, inform and reform understandings of music through practice. Likewise, practice-based skillsets use information-based skillsets in order to direct and facilitate experiential understandings. This symbiotic relationship can be argued to outline the formation of musical thought, as all musical skillsets have been arranged to form, inform and reform musical understandings through structural understandings of the medium.

In order to incorporate the formation of musical thought into a learner-centred teaching approach, focus is turned to the facilitation of the individual, as each person forms their own identity and life worlds through particular understandings and experiences. The development of musical thought using a learner-centred approach is dependent upon establishing a relationship between learner and musical structure. Once musical structure is understood as relevant to an individual’s identity, musical thought becomes its own process, so that musicians think in terms of their own personal schema for musical understanding. Understandings of musical structure can support the relationship between the musician and the music.

Chapter five explored student perceptions toward the music theory phenomenon and compares such perceptions to my own as elucidated from chapter four. If a broad span of student responses can be understood and facilitated in terms of the chapter four elucidations, then it can be argued to facilitate a learner-centred approach. The distribution of student responses to the three most important aspects of music theory gave rise to an overall cohort outlook in terms of perceived

constituencies of the music theory phenomenon. The majority of students (52%) perceived music theory to inform some kind of musical understanding. This be compared with the explication from chapter four that music theory informs musicianship, which is defined as the overarching understanding one holds of music through the use of information-based musical skillsets. Of this majority, about a quarter gave the circular answer that learning music theory helps you understand music theory. This suggests they have little notion of its role in their musical development but rather see the subject as something to be ‘got through’ or endured. The second-largest percentage of the cohort (36%) perceived music theory to inform skillsets. This can be compared with the explication from chapter four that music theory informs musicality, which is defined as the act of drawing from information-based skillsets in order to facilitate and direct practice-based skillsets.

These cohort responses demonstrate that students can perceive some interconnecting capabilities of music theory as informative to other musical practices. The comparisons between cohort responses and chapter four elucidations tell of differing perceptions, yet cohort responses can be encapsulated and organised in terms of skillsets as they contribute to musicianship and musicality. This draws parallels with the overarching elucidation from chapter four, which perceives music theory to provide sociocultural and historical structural contextualisation to individualised musical thought. In other words, understanding western music theory enables and enlarges the undertaking of any musical activity. This is the second contention of this thesis.

In order to support this learner-centred approach, visualisations pertaining to the conceptual framework underlying the sociocultural and historical structure of music have been created. The formation of visualised concept maps can assist (visual learners) to contextualise how the sociocultural structural underlay of music theory is pieced together. Such visualisations may also assist in the teaching of specific content. These have been created with the underlying belief that such an endeavour might take the educational focus away from analysis techniques as overriding the understanding of music theory. Visual maps of conceptual structure can be used as a reference. With analysis as a reduced priority, the development of idiosyncratic musical thought can then become the primary focus of the music theory course structure.

This section has aimed to tether concepts that have been investigated throughout this thesis in light of my underlying contentions. The next section will revisit and unpack my research questions. These are:

- How did I come to understand structures of western music theory?

- How do others perceive the purposes and functions of western music theory? and
- How can representation of musical structures facilitate the teaching and learning of western music theory?

In the following discussion, each question will preface each section. Ultimately, suggestions and recommendations will be made regarding pedagogical aspects of music theory teaching and learning in university contexts.

Research Questions

How did I come to understand structures of western music theory?

I undertook several music theory courses that led me to understand differing pedagogical structures and approaches. The resultant understanding was outlined in chapter seven. I have an easier time learning things when I map out how concepts link together through visual means (I'm a visual learner). I have used this approach to understand and link together the concepts covered in music theory. For each course undertaken, I visually mapped out its conceptual structure, after which I condensed the resultant structures to form another, overarching visualisation made from the constituent concepts found in each course. From this, I was able to identify which areas of the subject could be argued as being foundational, elaborative or superfluous.

An autoethnography in chapter four outlined how I approach my own understandings of the teaching and learning of western music theory. I have examined the ways by which I understand the structures underlying music theory. This reflexive approach has allowed me to systematise the informing qualities of multiple areas constituting my musical thought processes. Once I began to understand western music theory in terms of its structure and how those structures inform my musical practices, I realised that an understanding of music theory can underpin and help inform, reform and facilitate all musical practices. From this perspective, I then began to understand that musical skillsets inform either information-based skillsets or practice-based skillsets and how each of these could be classified as contributing to musicianship and musicality of the individual. I also realised the symbiotic link between musicianship and musicality and saw this relationship as contributing to the development of musical thought. I saw the subject of music theory as informing the development of musical thought as it concerns a

sociocultural- and historical-based structure that can be used within concepts of musicianship and/or musicality. This led me to see that current approaches to the teaching and learning of music theory involve a hurdle: that the development of musical thought is not the primary objective to such study. Instead, its focus is upon learning analysis techniques and deriving information from a printed score, which although incredibly useful, does not fully encompass what can be done with music. I now see the purpose of teaching and learning music theory to enable a musician to make sense and derive information from any musical activity undertaken using sociocultural- and historical-based structural frameworks. This approach to understanding can allow professional musicians to musically communicate through structure with other musicians, individualised understanding interpreted as divergent expressions and experiences of a convergent reference system.

How do others perceive the purposes and functions of western music theory?

As described throughout chapter five, I issued a survey to prospective learners in order to identify perceptions regarding the purpose and function of music theory. This was discussed in chapter five, where such perceptions are compared with autoethnographical accounts outlined in chapter four. In so doing, I was able to gain some insight to the ways in which perceptions aligned or differed from my own. Comparing themes in this manner assisted my derivation of a learner-centred approach with a plurality of perceptions as its cornerstone. From the data collected, I noticed that every student regarded music theory as being important to personal musical development. The majority of those surveyed understood music theory to be important to their musical understanding and to contribute to a broad range of musical skillsets. Such responses aligned with my autoethnographical expositions regarding the informing qualities of music theory to information- and practice-based skillsets.

In light of the perceptions students gave regarding relationships of music theory and skills, I investigated the connections between structure and such skillsets. I found that all musical undertaking contains the option to utilise one's understanding of musical structures to inform practice. The resultant findings appear in chapter six, within the section titled Interdependent Domains, that outlines the different ways in which practical- and information-based skillsets can adopt theoretical structure to facilitate desired tasks. The visual displayed in Figure 4.2 outlines the interconnectivity between skillsets, musicianship and musicality. Providing such information

to students can contextualise individual perceptions and understandings of musical structure and skillsets.

Only a very small proportion of total student responses (7%) articulated a connection between music theory and musicianship. This breakdown is shown in Chart 5.4, and draws parallels with my own thoughts defining musicianship as the overarching understanding one holds of music through the use of information-based musical skillsets. With such a definition, the structural understanding provided by music theory can be used to inform musicianship qualities outlined by student perceptions. One can use structural information to assist personal musical development and support artistic exploration through structural models. One cannot facilitate expression directly through musicianship with this definition, as the act of expressing oneself musically involves practice-based skillsets. This perception draws parallels to the finding that musicality holds a symbiotic relationship with musicality, and is therefore the mechanism by which musical expression can be facilitated through structural understandings of music theory.

An even smaller proportion of student perceptions focused on perceiving music theory as a manner of semantic understanding (3%). This perception breakdown is shown in Chart 5.5, where five responses articulated music theory to behave in a manner similar to language and one response saw music theory as the ‘mathematics of music’. Such perceptions draw parallels with descriptions of musical thought as described in chapter four, concerning the symbiotic relationship between musicianship and musicality. After briefly exploring connections between music and word, I came to the view that musical structure does behave in a similar manner to language, but only to a point. There remains a large difference between musical structure and language structure; as the latter is aimed at defining objective experience (Humphrey, 2013), yet is subjective in terms of its comprehension (Byers, et al., 2012). Musical structure on the other hand, may be used to describe subjective experience and is also subjective in its interpretation. Discussions pertaining to the nature of musical thought define it as a process of reformation and refinement of one’s structural understandings and experiences inherent of the musicianship and musicality link. This intuitive-based understanding can be argued to be a different manner of thought to language or mathematics; as such an understanding can be used to define musical realities within the personal contexts of the individual. This mode of thinking cannot, by any means, hold any objective commonality with another’s relationship with music, nor to their musical thinking – but it can be communicated, shared and exchanged and it can also enrich or divert other’s understandings and perceptions.

An implication that stems from musical thought conceived in this manner is the phenomenon of musical communication, which can be described as the divergent exchange of individual understandings and experiences using musical structure. This implication is drawn from discussions in chapter four concerning the phenomenon of musical communication compared with chapter six discussions regarding the interdependent relationship between the individual and culture. Hargreaves and North (1997) postulate “individuals have an effect upon their social environment just as this environment determines and constrains the individual’s behaviour” (p. 5); which draws parallels to the hermeneutic conundrum that music makes us while we make music. This parallel also reflects the individualised understandings of the sociocultural- and historically-based structural framework taught within music theory, in that the individual makes sense of a learning environment as purpose and function is perceived within particular life worlds. This concept will be expanded upon further within the pedagogical approaches section of this chapter below.

How can representation of musical structures facilitate the teaching and learning of western music theory?

Being a visual learner, I have always been interested in exploring and finding ways to communicate information in a visual manner. Mapping out interactions between educational concepts has enabled me to facilitate my learning style and assist learning abstract information. I used this approach whilst undertaking several music theory courses, the result of which can be found in chapter seven. For those who are not visual learners, it is hoped that articulating concept arrangement in a visual manner may provide an extra reference to help support their learning of music theory. With such an articulated structure, an educator may be able to analogise a more personalised approach to the non-visual learner. An educator is provided with extra pedagogical resources using visualisations found in chapters seven and eight. In this light, the educator can expand pedagogical delivery of course content to include aural, notational, instrumental and visual mechanisms. With visualisations mapping out the underlying sociocultural- and historically-based conceptual layout of musical structure, it can help define the way in which higher-order and foundational concepts interact within the medium. This can also assist pedagogy creation, as course content may be adapted or arranged to suit individual needs and understandings as demonstrated by their student cohort.

Within chapter seven, visualisations of pitch structures build to a higher-order level; demonstrating both increasing levels of musical organisation and my thinking regarding how these can be represented. These levels explore foundational concepts through to interactive systems of diatonicism, romanticism, modality and chromaticism. Subsequent and subordinate music theory concepts are described and each figure is unpacked, including descriptions of how concomitant musical concepts interlace at particular levels. Not all specific musical devices have been deeply elucidated within chapter seven, as not all music theory courses begin or progress at the same rates, nor was it my intention to create a visualised textbook to be followed as a form of music theory dogma. My intention was to provide a layout of the bigger musical picture, which when presented to learners in order to contextualise personal educational pathways using a supporting, visual guide. It was also my intention to enable any music theory course that might use these materials to be adapted and arranged to suit individual pedagogical requirements.

The visualisations given in chapter eight represent the larger musical phenomenon as I perceive it to suit all prior musical concepts that were articulated within chapter seven. The resultant interval matrix as shown in Table 8.5 demonstrates my visualised perception of the core technical aspects of western music theory, which simultaneously underpin and encapsulate all musical concepts visualised within chapter seven. This matrix of intervals is intended to assist learners to see, utilise and understand the greater musical picture in terms of its formal frameworks once they have been understood and experienced. The interval matrix has been developed in order to reduce the conceptual outline elucidated from chapter seven to a tool used by both teacher and learner. Once understood how it achieves this goal, the matrix can be used to map all musical structural components within the western musical context. The matrix can be used as a visual analysis tool, or as a creation tool. During its formation, it has revealed core understandings of how and why the western system is arranged in its complexity (the Ab/G# ‘border’; the points of origin of key signatures; intervallic, octave and enharmonic equivalence, etc.). This articulated visualisation is not intended for use by beginning students, yet may be used as a tool by those who have ascertained individualised musical thought to develop and progress autonomously as an integrated musician.

For the remainder of this chapter I will offer suggestions about how to teach and learn western music theory. Such suggestions stem from findings throughout this thesis. Suggestions have been developed from stances adopted by the contentions and research questions outlined throughout this chapter.

Transitioning Students

This section of the chapter concerns the transition of students into university studies. The way in which students are accepted into any university varies from place to place, yet there are some aspects that can be argued to remain consistent. This section of the chapter will focus on the ways in which students might be accepted into a music theory course, and how an educator may utilise this time to gain insights into the perceptions of a student cohort in order to derive a learner-centred pedagogical approach.

To begin, an entrance examination is recommended as a means to establish prior understanding of concepts to be taught. For instance, if students have already demonstrated they can harmonise four-part melody lines using voice-leading or counterpoint techniques, then perhaps it may not be necessary to use this task as an end of semester assessment. Rather than determining a set score that must be achieved in order to gain entrance into the course, a set number of student allocations may be predetermined. Where this is the case, the highest scoring number of allocated applicants can be granted entry into the course. Any problematic themes emerging from answers within submissions can be issues to be addressed within the first semester of teaching. Allocating course numbers in this manner can serve to manage student populations, and allow for the diverse ways in which this subject might be approached from the various educational backgrounds of potential entrants. An entrance examination in itself can help to inform the prior knowledge students' hold of content to be taught, as well as establish a formal entry point to the music theory course structure. Such a formal entry point can set a precedent for prospective students that music theory is a subject that is seen as important to the development of a musician from the university perspective.

Considering that music theory addresses core musical knowledge in terms of structural formation, function and application, it can be argued to be a core unit of study. Without an entry examination to facilitate the admission of learners, it leads to the conclusion that all successful applicants to a university music school will have to undertake the course with no means of determining learner ability within music theory. Failing this, acceptance to the music theory course would rely on entrance requirements of a different sort. In terms of learner-centred approaches to teaching and learning music theory, entrance to a theory course via external assessments is a means that does not suit the paradigm. Perhaps a practical audition with general

theory questions might determine performance capabilities, yet it does not yield as plentiful learner-centred data as a specific theory-based entrance examination can yield.

When data from an entrance exam can be coupled with data from an initial survey, two reference points are established for documentation of student progression. The entrance exam can focus on content knowledge particular to the sociocultural and historical framework that underlies western music theory; and the initial survey can focus on student preferences and idiosyncratic perceptions to the purpose and use of musical structure to personal ends. One could argue that progression is the key. Instigating such a survey before the first class of a semester is recommended due to timing and resource management yet may still be used to inform further classes in the semester if issued during the introductory lesson. Surveying students can enable findings in a similar vein to those found in chapter five, as tasks can be suited to personal and demographic understandings. The purpose behind an initial student survey (much like chapter five) is to establish an understanding of students' perceptions of music theory content, preferences, influences, purposes and functions.

Hard copy surveys do not require a computer for a student to complete yet is a slow method to gather and collate data. The issuing of such a survey would also have to pass budget requirements due to excessive printing. An alternate option is to issue each survey as a link from a student portal system to an online service such as Qualtrix. This method allows learners to complete the survey within a preferred environment, as well as reducing printing costs that would be incurred with hard-copy submissions. The use of technological survey issuing does allow data management to be facilitated quicker yet not all students may have access to online facilities. University resources may oblige students to technological facilities yet it seems wise to be able to have the hard copy on hand should it be required to fill a need.

The database that eventuates from an instigated survey should be reportable to the individual, whilst being representative of the student cohort as a whole. Individual datasets can be used to support consultation if necessary, and may assist investigation purposes for student queries if deemed necessary. Care must be taken to not allow collected data to be shared with anyone not obligated to view the content. It is advised to gain ethical approval before undertaking such data collection activities as well as adopting a research methodology that addresses concerns found in chapter three. Demographic data may be used to demonstrate a whole-class take on the subject in order to contextualise the cohort regarding pedagogical approach. It may be deemed appropriate

to articulate what particular examples may be used because of the survey, with care taken to not display the data in any way that may exclude any particular class member.

Instigating a survey at the beginning of each semester can help a learner-centred approach by providing additional data points that focus on student perceptions. By so doing, one is able to see how attitudes, perceptions or influences may have changed over the course of each semester. This implies that assessment strategies would require inclusion of the individual progressions of a learner. The next section of this chapter will aim to make recommendations of assessment strategies based on this approach.

Coursework Assessment Strategies

It can be argued that people think about the world in the ways in which they experience it; hence the manners in which people experience the world are diverse. The same applies to musical thought: people experience, understand and perceive music in a diverse manner and as such, assessment strategies should cater to this aspect of musical development. It has been argued throughout this thesis that individual understandings of music theory are diverse, dynamic and distinct from each other. It has also been argued that there is an established sociocultural- and historical-based framework to musical structure, which has been evolved over hundreds of years to encompass all western music structural frameworks heard today. Music theory addresses and outlines the formation of musical structures, knowledge that has the capacity to help facilitate individual practices and preferences of a learner. When approached from this angle, the structural reference framework forms a point of educational convergence, yet allows divergent and personalised meanings to be extricated through experiential application of the material. As learners become more familiar with the ways in which they experience musical structure, it can be argued that they are developing their ability to articulate their musical thoughts. Hence, the articulation of musical thought within social contexts can be called musical communication, and assessment strategies can take advantage of this by mapping progressions of individual and group achievement in this regard.

Musical thought, communication and the manner by which musical structure informs practice are all dynamic processes, which involve the interaction of interdisciplinary musical skillsets. Skillsets that constitute musicianship and musicality contain dynamic relationships, which

approach experience and understanding of music and its structure from differing perspectives as demonstrated in Figure 4.1. Information-based skillsets can use practice-based skillsets to form, inform and reform understandings of music through experience. Likewise, practice-based skillsets use information-based skillsets in order to direct and facilitate experiential understandings. This interdependent relationship is shown in Figure 4.2 and can be argued to outline the formation of musical thought, as all musical skillsets have been arranged to form, inform and reform musical understandings and experiences through structural familiarity. Hence, the structure that underlays music can be argued to be the medium of musical thought and thus musical communication.

When the teaching of music theory focuses on development of a learner in this manner, musical thought can be assessed as the personalised demonstrations of structural understanding. It can also be argued that musical communication can be assessed as the demonstration of musical thought within a socialised context. Ipso facto, musical communication can be assessed as social demonstrations of structural understandings. Assessment strategies can embrace the dynamic relationships inherent to musical frameworks, as the relationship between musicianship and musicality hold interdisciplinary skillsets that can be used to demonstrate understandings of particular musical structures. This means that any musical skillset can be used to demonstrate musical structure if learners are able to articulate how they achieved such an outcome. Hence, assessment tasks can ask learners to demonstrate personalised or group understandings of, ‘what information does music theory teach?’ and, ‘how can this information be used?’

Individual understandings of music theory are distinct from each other, as every learner brings their own diverse life experiences and understandings to the fore. The information ascertained from surveys or entrance examinations can contextualise such distinctions, just as findings from chapter five have demonstrated within the context of this thesis. It can be argued that each learner holds personalised aptitudes and abilities of musical skillsets, and that no two learners hold the same understandings or experiences toward musical preferences. In terms of assessment strategies, it can be argued that adopting an open-ended approach to submissions could embrace this quality. Learners can have a range of assessments available for completion that contain a broad variety of tasks, which address the articulation of individualised musical thought. Learners might only select tasks suited to one’s perceived relative strengths, yet there is the option to award bonuses for the completion of a task deemed out of the ordinary. Whichever approach taken, the learner is still required to use musicianship and musicality to articulate musical

thought within a task set, hence catering to the distinct manners in which people understand and experience musical structure.

A study guide can be used as an assessment tool to demonstrate independent development and understanding of structural materials. Tasks can be devised to summarise materials taught within a given week and allow for students to work through the guide at their own pace. A study guide used in such a manner could be submitted as a part of a learners' total assessment where a percentage mark is given for accuracy and completion of tasks set. A submission of a study guide could be argued to demonstrate personalised understanding of structural materials taught based from its inherent tasks. Such an approach assists to cater for differing learning speeds and ability levels as learners are able to work on tasks set at their preferred pace. The educator will have to remain mindful that learners are able to communicate with each other to complete tasks; hence university policies relating to collusion and plagiarism would need to be articulated within lectures, within the course guide and enforced should the situation arise.

As an alternative to the submission of a study guide, the development of a personal portfolio of works could be used as an assessment strategy. Such an approach to assessment would be harder to grade of course, yet can demonstrate small-scale harmonisations of structure or greater musical projects that span interdisciplinary skillsets pertaining to musicianship or musicality. Personalised tasks that ask, 'what information does music theory teach?' and, 'how can this information be used?' can be addressed in a manner suited to the development of a professional portfolio. For example, a multiple-component assessment task could ask a learner to investigate musical structures that underlay a piece of music being learned on their instrument for performance. Once complete, a learner could demonstrate (perform) or report how the structural underlay influences their performance of the piece, or how different interpretations of structure yield differing performance interpretations. As practice-based skillsets utilise musical structure in some manner, such assessments can demonstrate structural understanding in terms of practical experience. The tasks set in this manner would have to balance against the work required to complete the study guide tasks, as from professional experience, many learners tend to choose the path perceived to be 'less work'.

To avoid the scenario occurring where learners may finish assessment tasks set and possibly not attend future lessons, personal development tasks should only contribute to a percentage of the overall assessment. Group tasks can form the remaining percentage of student assessment and can be based similar principles outlined from discussions of personal assessment. Teamwork is

essential to the teaching and learning of any musical field, as music in itself is a social construct. Group projects can be assessed from the perspective of being the socialised application of team preferences using musical communication. For example, over the course of a semester, groups of a particular number can be selected by students or delegated by the educator. Upon forming such groups, members would be required to network with their team to get to know each other musically and personally. Once a team understands what attributes each member can bring to the table in terms of musicianship and musicality, a task can be undertaken that incorporates the use of musical structures to create an outcome. As skillsets constituent to musicianship and musicality all utilise musical structure in some way, the particular combination of learners in a team does not matter. Each group is thus provided with a unique challenge that requires the use of personalised musical thought to communicate ways a team might work together to achieve a task set. Such learner-centred assessment strategies require appropriate marking and reporting systems to complement them. The next section in this chapter will be using the examples given within this section to elucidate how such tasks can be marked and hence reported as developmental progression.

Coursework Marking Strategies

The assessments within learner-centred course structures require suitable marking and reporting systems to supplement them. Within the previous section of this chapter, I suggested the choice of a study guide or portfolio development in tandem with a group task as submission options throughout a given semester. The submission options would contribute to one's overall coursework mark, being comprised of two weighted sections concerning individual and group work. The overall marks of each student would then be weighted against each other to ensure an even distribution. Figure 9.1 demonstrates this layout.

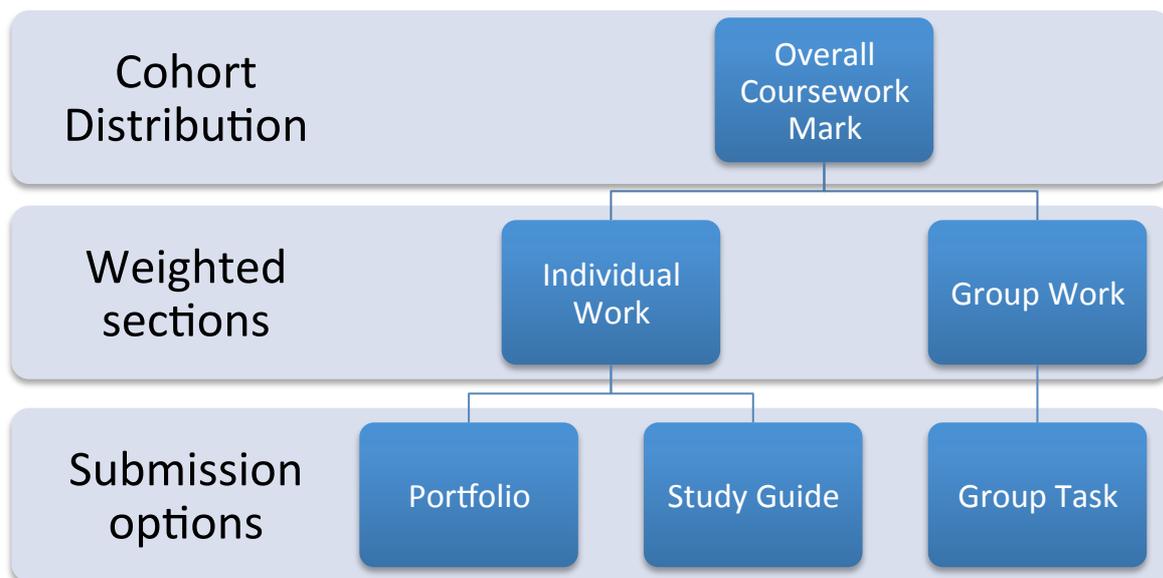


Figure 9.1: Layout of coursework assessment and marking strategy.

Within the ‘Individual Work’ weighted section, either a portfolio may be submitted or a study guide with set tasks completed. The study guide can include weekly-related short-answer questions or activities that help to improve a learners’ development. A percentage can be attributed to reflect the accuracy of the submitted guide, assigned to the ‘Individual Work’ weighting of the overall coursework mark. As an alternative, an individual portfolio could be submitted as a demonstration of individualised understandings. As a third option, I would be inclined to have the study guide tasks facilitate the creation of an individualised portfolio. As portfolios are an open-ended task that includes projects personal to the individual, the task requires an alternate form of marking. In light of discussions of previous sections within this chapter, I have created rubrics for marking such a portfolio submission task. Table 9.1 demonstrates what I perceive such criteria to be, drawing on themes discussed within the assessment strategies section of this chapter.

There are five domains to the portfolio task, which focus on different aspects of the portfolio submission. It should be noted that the particular tasks contained within a learner’s submitted portfolio should be relevant to the topics taught within a given semester. Specific tasks may be selected by the educator to be completed or free choice in tasks may be given, dependent on individual teaching circumstances. The following criteria are used in Table 9.1:

- Understanding of the purpose behind structural elements demonstrated within portfolio
- Articulation of portfolio's purpose to overall musical development

- Explanation of how musical structures within the task may be practically applied using musical skillsets
- Evidence of self-reflection and personal motivations of portfolio
- Spelling, grammar, use of referencing and accuracy of musical examples

Each domain has its roots within a previous chapter of this thesis. In order to demonstrate how each criterion would be used to mark a portfolio item, I will describe a hypothetical submission and then describe the ways in which each section would work to produce an outcome.

A second-year, second-semester learner submits a portfolio work containing a four-part choral harmonisation that uses chromatic ideas taught and learned to demonstrate the concept of tonicization. A 1000-word description of how the structural underlay achieves this accompanies the harmonisation, which includes references of historical uses and settings. This text also describes how the learner attempted to use multiple skillsets to understand and apply structures.

The example also includes an appendix of self-reflections; yet does not provide a perceived benefit for this task. Looking at the actual harmonisation, the learner has attempted to create an individualised way of utilising this technique, having written the four-part harmonisation for a four-piece folk band in which they play. There are parallel octaves and fifths present in the harmonisation, yet their use is not described in the accompanying text, which contains a few spelling errors. Within this example, I will be using a few assumptions in order to clarify the marking process. The first assumption is that the structural concepts used within this submission were taught during the given semester; secondly, an educator gave the same task to all students, requiring an accompanying description. My third assumption is that the harmonisation provided is appropriately realised for the style given and lastly, that the accompanying text is historically accurate and not plagiarised.

Individual Task Rubrics

	N	P	C	D	HD	Total
	(<50%)	(50-59%)	(60-69%)	(70-79%)	(80-100%)	(/100)
Understanding of the purpose behind structural elements demonstrated within portfolio	Demonstration of the purpose behind musical structural elements or concepts within the task is not shown	Some musical structural elements or concepts are set within previously established historic and sociocultural uses	Many musical structural elements or concepts are set within previously established historic and sociocultural uses	All musical structural elements and concepts are set within previously established historic and sociocultural uses	Reforms musical structural elements or concepts in new settings; expanding from previously established historical and sociocultural uses	/30
Articulation of portfolio's purpose to overall musical development	Perceived manners by which the individual might benefit from the undertaking the task is not shown	An underlying purpose relevant to individual musical development has been shown yet only drives some of the portfolio	An underlying purpose relevant to individual musical development has been shown yet does not underpin the entire portfolio	An underlying purpose relevant to individual musical development has been perceived and used to drive the portfolio	An underlying purpose relevant to individual musical development with implications for future growth have been perceived and used to underpin and drive the portfolio	/15
Explains how musical structures within the task may be practically applied using musical skillsets	Musical structures or concepts within the task are not explained or demonstrated through the use of practical skillsets	Some musical structures or concepts within the task are explained or demonstrated through the use of practical skillsets held by the individual	Many musical structures or concepts within the task are explained or demonstrated through the use of practical skillsets held by the individual	All musical structures or concepts within the task are explained or demonstrated through the use of practical skillsets held by the individual	All musical structures or concepts within the task are explained or demonstrated through the use of practical skillsets held by and external to the individual	/25
Evidence of self-reflection and personal motivations of portfolio	The individual does not provide evidence of self-reflection nor express personal motivations behind the portfolio	The individual provides some evidence of self-reflection and expresses some personal motivations behind the overall portfolio	The individual provides self-reflections to express personal motivations behind some elements of the portfolio	The individual provides self-reflections to express personal motivations behind many elements of the portfolio	The individual provides self-reflections to express personal motivations behind all elements of the portfolio	/20
Spelling, grammar, use of referencing and accuracy of musical examples	There are many errors in spelling, grammar, punctuation or use of referencing; musical examples are not given in this submission	Spelling, grammar, punctuation, referencing and musical examples contain many errors throughout this submission	Spelling, grammar, punctuation, referencing and musical examples contain some errors throughout this submission	Spelling, grammar, punctuation, referencing and musical examples contain few errors throughout this submission	Spelling, grammar, punctuation, referencing and musical examples contain no errors throughout this submission	/10
						/100

Table 9.1: Individual task rubrics.

The first marking criterion involves the use of musical structures and demonstration of the learner's understanding of the structural content. This criterion is based on aesthetic understanding of music's structure as sociocultural and historical reference frameworks. Within the given example, the learner has successfully attempted to reform chromatic elements to demonstrate the concept of tonicization, basing the harmonisation on previously established historical uses as provided by the accompanying 1000-word description. Such an effort would receive a HD (24/30) for criterion 1. If the same attempt had been made without any contextualising descriptions, or the harmonisation simply did not demonstrate the concept described, then marks would be appropriately lower.

The second criterion is aesthetically based with learner-centred focus and requires the submission to have articulated the purpose of the portfolio task regarding overall musical development of the individual. The more freedom a learner is given to choose portfolio tasks, the more important this becomes, as articulating motivations for purpose is very beneficial for developing and facilitating personal artistic directions. For the educator, this criterion can also help contextualise individual understandings of overall development, which may be triangulated with survey and entrance examination submissions to document progressive understandings. Within the given example, there is no description of the benefit to the task. There is an implicit reference as the task has been set for the learner's band, yet no explicit statement and hence the learner would get an N (7/15) for criterion 2. Higher marks would be awarded if contentions were provided which stated the underlying purpose and benefit to using chromatic elements to describe tonicization within a folk setting. As this criterion focuses on the learner, asking 'what is this task's overall purpose?', it is not enough to simply infer importance, it should be explicitly stated.

The third criterion focuses upon individual understandings of how music theory structures can be used by practical-based skillsets. This criterion requires the learner to use their musicianship and musicality to demonstrate their musical thought processes – to articulate and demonstrate practical application of musical structures. Within the example given, it describes that the learner attempted to use multiple skillsets to understand and apply used structures. The range, depth and detail of such descriptions would determine the outcome of this mark. Assuming most structural elements were applied, tested and described in conjunction with aural-, performance- and timbre-based skillsets; this section would receive a C (15/25). In order to receive a HD for this section, the student would be required to explore options external to one's preferred musical

skillsets. From my viewpoint, such a challenge can encourage holistic and multidisciplinary thought, which are ideal traits to be displayed by individuals.

Criterion four is a praxis-based criterion with learner-centred focus that requires the submission to have included self-reflection and motivations articulated. It requires learners to have asked themselves, ‘what can I do with this information?’ and ‘what motivates me to undertake this task?’ This supplements criterion two, and statements pertaining to criterion four can also be triangulated with survey and entrance examination submissions to document individual motivations. Within the given example, the learner has included an appendix of self-reflections; yet does not provide a perceived benefit for this task. With no further contextualising information, I would have to give this section a P (10/20), as it does not synthesise self-reflections to articulate motivations (which could be used as the basis for criterion two) of the portfolio task. With such data points of personalised development (from criteria two and four in context of criteria one and three), the educator can map progressions of individual musical: motivations, understandings, experiences, preferences and even gain insight to one’s aesthetic or praxis tendencies. This information can be used to assist learners during consultations, as they can see how they are progressing within the assessed contexts and generally provide more support to the learner.

The final criterion involves general spelling, grammar and accuracy in use of referencing and musical examples. The criterion is mainly for general mediation. Within the given example, it mentions that there are parallel octaves and fifths present in the harmonisation, yet their use is not described in the accompanying text, which contains a few spelling errors. I would probably give this a D (7/10). As the use of parallel octaves and fifths may be allowed within the folk context of the newly realised harmonisation, the historical and sociocultural structural concepts of four-part voice-leading or counterpoint do not allow their use – they are perceived as ‘mistakes’. Some written contextualisation would need to outline their involvement as a discretionary decision made by the learner in order for me (as an examiner) to ignore the parallel intervals. I would tend to determine how much the demonstration of one’s understanding depends on the harmonisation that contains the ‘error’, as parallels in harmonisations may affect criterion one to some degree.

Overall, the learner within this example would receive a credit (63%). With this hypothetical learner in a class where everybody was given the option of completing the same hypothetical task, this 63% would be standardised against the results of all other learners who handed in a

portfolio submission. If the study guide were used to facilitate the creation of an individual portfolio, all learners would submit coursework in this way. To counterbalance this if the study guide were not used to facilitate portfolio creation, all learners who handed in a study guide submission would need to be standardised against each other as well. Weightings toward overall quality of portfolio versus study guide submissions can be left to the discretion of the educator. I would tend to take the average distributions and standard deviations of each submission type and then obtain an overall mean, median and mode with which to offset standard deviations against localised submission groupings.

As well as individualised assessment, I had proposed a group assessment. It would be an experience-informed recommendation that first and second-year learners are set a specific group task and team members are decided within the first lecture. Table 9.2 provides the rubric for an open-ended group task, to which scenarios may be given by an educator or granted free-selection by groups:

- Understanding of the purpose behind musical structural elements or concepts within the task
- Articulation of task's purpose to the group's overall musical development
- Explains how musical structures within the task may be practically applied using musical skillsets
- Evidence of group discussions and member contributions to task completion
- Spelling, grammar, use of referencing and accuracy of musical examples

The criteria from marking an open-ended group assignment are very similar to the individualised rubric used for the portfolio. There are two main reasons for such similarities, the first being familiarity of assessment for learners. Once learners have been individually assessed, it can be argued that they would have an understanding of what is to be expected of them in future tasks. In having tasks set to similar criteria, each team member would then bring their own understanding and experiences of their individual assignment to the group task. Teamwork is essential to the teaching and learning of any musical field, as music in itself is a social construct. Group projects can be assessed from the perspective of being the socialised application of team preferences using musical communication. Another reason for such similar criteria is that similar data points of the learner-centred approach can be ascertained within a group context.

Group Task Rubrics

	N (<50%)	P (50-59%)	C (60-69%)	D (70-79%)	HD (80-100%)	Total (/100)
Understanding of the purpose behind musical structural elements or concepts within the task	Some musical structural elements or concepts are set within previously established historic and sociocultural uses	Some musical structural elements or concepts are set within previously established historic and sociocultural uses	Many musical structural elements or concepts are set within previously established historic and sociocultural uses	All musical structural elements and concepts are set within previously established historic and sociocultural uses	Reforms musical structural elements or concepts in new settings; expanding from previously established historical and sociocultural uses	/30
Articulation of task's purpose to the group's overall musical development	Perceived manners by which the group might benefit from the undertaking the task is not shown	An underlying purpose relevant to the group's musical development has been shown yet only drives some of the submission	An underlying purpose relevant to the group's musical development has been shown yet does not underpin the entire submission	An underlying purpose relevant to the group's musical development has been perceived and used to this drive the submission	An underlying purpose relevant to the group's musical development with implications for future growth have been perceived and used to underpin and drive the submission	/15
Explains how musical structures within the task may be practically applied using musical skillsets	Musical structures or concepts within the task are not explained or demonstrated through the use of practical skillsets	Some musical structures or concepts within the task are explained or demonstrated through the use of practical skillsets held by group members	Many musical structures or concepts within the task are explained or demonstrated through the use of practical skillsets held by group members	All musical structures or concepts within the task are explained or demonstrated through the use of practical skillsets held by group members	All musical structures or concepts within the task are explained or demonstrated through the use of practical skillsets held by and external to group members	/25
Evidence of group discussions and member contributions to task completion	The individual does not provide evidence of self-reflection nor express personal motivations behind the portfolio	The group has displayed little understanding of each other's professional capabilities and do not equally contribute to task completion	The group has displayed understanding of each other's professional capabilities with logical delegations of subtasks	The group has displayed an understanding of each other's professional capabilities with logical delegations directed toward task completion	The group has displayed a strong understanding of each other's professional capabilities with logical delegations directed toward task completion	/20
Spelling, grammar, use of referencing and accuracy of musical examples	There are many errors in spelling, grammar, punctuation or use of referencing; musical examples are not given in this submission	Spelling, grammar, punctuation, referencing and musical examples contain many errors throughout this submission	Spelling, grammar, punctuation, referencing and musical examples contain some errors throughout this submission	Spelling, grammar, punctuation, referencing and musical examples contain few errors throughout this submission	Spelling, grammar, punctuation, referencing and musical examples contain no errors throughout this submission	/10
					/100	

Table 9.2: Group task rubrics.

Criteria focus on similar aspects of assessment than those within the individual task. Hence, marking can occur in a similar manner to the example given that aimed to guide the individual task earlier in this section. Comparing each criterion of Table 9.1 and Table 9.2, the only difference between individual and group tasks (apart from switching to group contexts) is criterion four.

Instead of self-reflecting to determine underlying motivations which can be used to underlay criterion two, evidence of group discussions are requested, which focuses on teamwork elements and communication. This can give a contrasting reference to how one works in a group as opposed to working within a team. Once a team understands what attributes each member can bring to the table in terms of musicianship and musicality, a task can be undertaken that incorporates the use of musical structures to create an outcome. As skillsets constituent to musicianship and musicality all utilise musical structure in some way, the particular combination of learners in a team does not matter. Each group is thus provided with a unique challenge that requires the use of personalised musical thought to communicate ways a team might work together to achieve the task set. Such group tasks can be marked using the rubric given in Table 9.2.

This section has aimed to outline how marking of learner-centred and open-ended approaches to assessment can be achieved within university music theory. Individual- and group-based marks can be standardised against each other to ensure equal distributions. Individualised progression can also be reported in terms of individual- and group-based musical: motivations, understandings, experiences, preferences and even gain insight to one's aesthetic or praxis tendencies. Such marking strategies can be argued to be learner-centred, as choice and development is given to the learner, and upon completion of an entrance exam, survey, individual and group tasks; an educator is able to assist, facilitate and develop learners in light of such data. The next section of this chapter will aim to outline approaches to examinations that can be used in conjunction with such assessment and marking strategies.

Approaches to Examination

There are a few considerations when regarding final examinations for each semester. Timing constraints and location of an examination hold an influence over the type of tasks that can be completed and the task to be completed should be appropriate to reflect understanding of content learned throughout an entire semester. An educator might simply use the same lecture theatre as has been used to deliver course content, or decide to hold the exam at a different location. By using the same lecture theatre, the musical resources at hand are familiar, and an alternate location is not likely to have such resources available. On the other hand, an alternate location may provide a larger space in which to conduct the examination if it does not require musical resources. With these considerations in mind, the decision of examination location then hinges on what task is to be completed and the timing available in which students have to finish it.

In order to determine how much time may be necessary to complete an examination task, the task itself should be decided first. This is entirely dependent upon individual course layout and progression of students, yet some baseline objectives and progression points can be established in order to help decide what types of tasks could be deemed appropriate to constitute a semester of music theory teaching and learning. Given a scenario where four semesters are dedicated to an entire music theory course structure, some baseline objectives can be established for each semester.

The first semester should concentrate on learners gaining an understanding of conceptual foundations up to level three as determined by visualisations given in chapter seven. With such an objective set as a baseline, tasks such as four-part harmonisation of a bass line using voice-leading or four-part harmonisation of a melody line using counterpoint (or both) could be used in a final examination. Such tasks would test musical problem solving and an understanding of content application through harmonisation. In order to test understanding of conceptual understanding, requests to recreate level zero (Figure 7.3) to level three (Figure 7.6) visualisations with descriptions of which concepts taught throughout the semester constitute each section could also be added to the examination. Such an exam could be given anywhere from one to two hours to complete, at the discretion of the educator. Facilities required are minimal and non-musical, meaning any location could be used.

Following this, the second semester can focus on understandings of Romanticism concepts mapped in Figure 7.7. As the musical concept of Romanticism expands the foundational palette

with methods of tonicization and modulation between keys, the baseline objective for this semester would be to demonstrate understandings of these modular concepts. With such a focus, examination tasks could continue to be four-part harmonisations using a bass or melody line to demonstrate voice-leading or counterpoint techniques that also include techniques involved with Romanticism. I would be inclined to request to use of Schenkerian analysis to describe the use of techniques within a given answer within the second semester, yet its inclusion here or earlier should be left to the discretion of the educator. Schenkerian analysis requires abstract thinking processes yet addressing the concept as a system of categorical labelling in tandem with visualisations may help differentiate foundational concepts in terms of separate levels. Including Schenkerian analysis as an element can assist with marking harmonisations, there is risk that learners may experience cognitive overload if assessed too soon. If the study guide introduces and requires analysis in order to direct portfolio creation, then I recommend its inclusion in second semester as an assessed learner objective.

Second year examinations could continue down the harmonisation task path, requesting modality concepts (Figure 7.8) to be included within the first semester and chromatic concepts (Figure 7.9) within second semester. Such tasks would demonstrate individual understandings of structural application at more complex levels than previously established. Harmonisation tasks do suit an examination task due to low administration and resource requirements; yet do not directly test one's understanding of musical thought. A written task describing personalised associations to music theory or musical thought could be an alternate or addition to harmonisation tasks. Such an addition would extend the overall time in which to complete the assessment, yet addresses understandings of musical thought. Such a task can be marked using a rubric with very similar criteria to the proposed portfolio rubric in Figure 9.1:

- Understanding of the purpose behind structural elements
- Articulation of music theory's purpose to overall musical development
- Explain how musical structures may be practically applied using musical skillsets
- Evidence of self-reflection and personal motivations
- Spelling, grammar, use of referencing (if applicable)

Considering this course of examination, by the end of the first year learners should be able to realise and analyse counterpoint and voice-leading harmonisations within and between all tonal centres. With coursework directed at understanding and applications to practical skillsets,

learners should also be able to apply such theoretical understandings to performance, arrangement, improvisation, conducting, composition or musicological contexts. The first two semesters of music theory requires examinations to be simple in nature as learners settle in to the university environment. Given students in second year have experienced university for a year, the examination of practical application appears to be a logical path. If a third year was given to music theory teaching and learning, I would be inclined to request students to manage themselves in terms of organising their own group performances in locations outside the university environment.

By the end of the first year, learners who have chosen to build a portfolio may have generated enough backing to demonstrate practical examples as an examination. If a study guide is used to facilitate the creation of individual portfolios, it can remain as the means to determine individual progression. In order to assess groups, they may be given the option to practically demonstrate their understandings to their peers as a group-based examination. In such cases, the demonstration itself would contribute to the individual members' examination mark. The only difference between the coursework and examination methods of assessment is demonstrating musical thought against demonstrating musical communication. The rubric given in Figure 9.2 can be used for both assessments, as the examination can be argued to be a social demonstration of group-based tasks. Such an arrangement might require separate examination times for those who elect to take this option, which would require the use of an auditorium. If the usual lecture theatre is not an auditorium, an auditorium may require an entire day to complete such demonstrations. Due to such timing constraints such a task would be more suited at smaller numbers and restricted to group-only demonstrations. Such an option is a personalised choice of the individual educator; given different universities operate in different ways. With group coursework assessments geared toward practical applications of theoretical understandings, it may also be deemed too excessive an examination approach. I would be inclined to leave such an option as a voluntary alternative to keep within a learner-centred paradigm.

By the end of the second year, learners should also be able to practically apply such complex understandings to practice-based applications. Hence, learners should also be able to communicate their personalised understandings to others. With such learner-centred approaches, multiple data points are established to help determine and facilitate the musical development of individual learners. This section has attempted to outline each area of assessment and examination and show ways how they help inform the educator of the development and progression of a learner within individual and group music theory-based contexts. The next

section will aim to outline pedagogical approaches toward the teaching and learning of music theory built from the previous sections of this chapter.

Pedagogical Conundrums

This section will aim to highlight pedagogical conundrums and make a variety of suggestions regarding pedagogical approaches to learner-centred teaching of university level western music theory. It is hoped that the provision of such recommendations may be used as guidelines to individual pedagogical approach. It is not the aim of this thesis to construct a monolithic framework of the phenomenon in question; rather, they are recommendations based upon my research and if any reader may find use in adopting, expanding or evolving any recommendations, one is most welcome to do so.

Continuing with suggestions made in both assessment and marking sections of this chapter, it is recommended to provide students with both course and study guides. Included within the course guide can be information related to educator contact details, university resources for learners, assessments, marking rubrics, timetabling, course structure and other policy-related documents such as a given university's stance toward collusion and plagiarism. The study guide contains information specific to coursework as presented throughout each week of a given semester, and can also include revision-based questions or tasks aimed to reinforce individual understandings. If suggestions from this chapter's previous sections are regarded, the study guide can also act as a form of assessed submission, with individual tasks set for each week, which once handed in, contributes to a percentage of a learner's individual mark. As an alternative, the study guide tasks can also be set in such a manner as to facilitate the creation of individualised portfolios.

Whether or not an educator decides to use a study guide as a type of assessment method, it is vitally important that learners understand exactly what is required of them for their final exam and any submission tasks. First year learners may require weekly reminders regarding assessed tasks or submissions. From my observations as a music educator, beginning university students have a tendency to prioritise workloads based upon assessment and examination requirements, and might find it a challenge to manage multiple submissions demanded from simultaneous courses undertaken. From an educator perspective, such means-ends approaches – focused on requirements to simply pass a given course – is not a very ideal strategy in terms of developing a

holistic musician. The pivotal method of delivery hence informs learners of assessment requirements from a holistic developmental perspective.

In order to establish what I mean by a holistic developmental perspective, I will need to contextualise the thought processes behind my approach. In chapter eight I placed focus upon spaces between notes (intervals) to yield a greater understanding of the musical phenomenon. In the next paragraph I will be focusing on the spaces between concepts pertaining to the self and various environments to unpack my understanding of the phenomenon of teaching and learning of music theory. According to Hargreaves and North (1997), “individuals have an effect upon their social environment just as this environment determines and constrains the individual’s behaviour” (p. 5). I perceive an individual’s life world to lay at the centre this symbiotic relationship; where experiences form, inform and reform understandings of the self in relation to their social environment. In a similar fashion it can be argued that a university music school provides a particular kind of social environment, one where an individual’s life world experiences serve to form, inform and reform understandings of the self in relation to music teaching and learning. Expanding from this, it can be argued that a music theory class provides another particular kind of social environment, one where an individual’s life world experiences serve to form, inform and reform understandings of the self in relation to music theory teaching and learning. With this in mind, I perceive music theory teaching and learning to develop and facilitate musical thought, where an individual interprets their life world experiences to form, inform and reform understandings of the self in relation to musical structures. This means I perceive musical structure as the medium of musical thought.

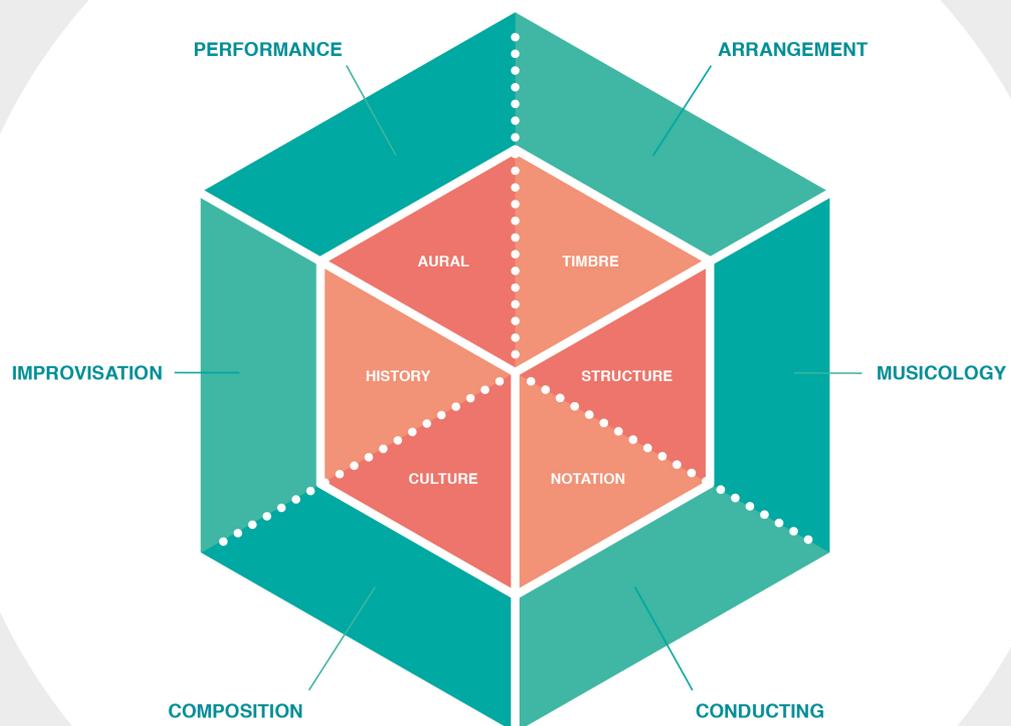
As articulated in chapter four, the relationship between the self and musical structure is interpreted through understandings held between sociocultural references and individual preferences. Also mentioned in chapter four, the relationship between the self and musical thought is contextualised by the interrelationships between skillsets comprising musicianship and musicality (Figure 4.2). This means that the environment of music theory teaching and learning involves musical thought as experienced by musicianship and musicality skillsets and understood through musical structures as convergent sociocultural references and divergent individual preferences. Hence, musical thought can be argued to be both an individual and social construct, meaning that it forms, informs and reforms an individual’s life world, which can be seen as a formation of identity situated between the self and music. By basing assessment criteria on personal understandings of musical structures and their applications to practical musical

experiences, it can be argued that lessons taught within music theory courses can contribute to a learner's overall musical development.

I perceive the structural underlay of western music theory to be a socially constructed phenomenon to which each learner derives idiosyncratic understanding in terms of purpose, function and practical application. Learner-centred teaching approaches aim to facilitate individual development through the pluralistic inclusion of dynamic and interactive sociocultural frameworks. In other words, multidisciplinary musical skillsets can be demonstrated to utilise structures taught in theory classes. Such demonstrations can implicitly show learners just how underlying theoretical structures might be practically used. For example, it is one thing to perform chord progressions on a piano or guitar, which could be demonstrated just as easily as arpeggios on a clarinet or violin. Likewise, learner involvement may also provide opportunities for conceptual demonstration. Four learners singing chord progressions as a chamber group might articulate a four-part vocalisation demonstrating harmonic concepts; or the entire cohort could divide into soprano, alto, tenor and bass parts. Such a variety of performance approaches can demonstrate theory's practical applicability.

Other practice-based skillsets can be used as the basis of demonstrations of musical structure. Conducting practices can demonstrate temporal elements of music or provide contexts to the individualisation of musical interpretation, whereas musicological practices can provide historical and cultural contextualisation to structural devices. Compositional practices can be used to recreate a piece that involves particular structural devices. Such a demonstration can involve an explanation of how one might have composed a particular piece with such structural understanding. Improvisation practices could use a particular structural concept as guiding constraints in which to perform – learner or educator could demonstrate this. Taking a familiar piece and placing it into a new setting through the identification and relocation of musical structures could demonstrate arrangement practices. There are many different manners by which practice-based skillsets can be demonstrated to show their adoption of musical structure. These manners can be applied to any form of western music, and the more familiar learners are with particular pieces, the greater the potential for educational impact. The educator in light of student surveys informing what types of music are preferential to learners, as well as developing rapport through conversation and observation can make such decisions.

MUSICIANSHIP INSIDE MUSICALITY



Just as musicality draws from musicianship, demonstrating the use of information-based skillsets can implicitly inform learners with means to understand musical structure. It is recommended to adopt several differing approaches to the explanation of musical structures, using the outlined musicianship skillsets as shown in Figure 4.2. Musical structure can be understood through several visual systems of representation, such as notation, Schenkerian analysis or visualisations as given throughout chapters seven and eight. Notation can be used to represent theoretical structures in score-based contexts, for instance, an orchestral score of Sibelius or a chart sheet from a famous contemporary band. Schenkerian analysis can be used to demonstrate the extraction of structural information from a score. In this instance, an educator might analyse ‘on the fly’ to demonstrate how particular structures can be realised. The visualisations from chapter seven categorise analysed structures in the context of operational interrelationships; whilst the interval matrix shown in Table 8.5 can assist in the entire process of analysis, contextualisation and visualisation of musical structures inherent of a score.

Listening underpins what it means to be a musician, and aural approaches to teaching and learning music theory is recommended, as music is sound before anything else. Aural mechanisms are a differentiated skillset in itself, yet incorporating identification exercises as explanations can assist learners to develop their ears from a theoretical context. In order to incorporate aural mechanisms seamlessly, a music theory educator should know what lessons have been covered in aural classes recent to the theory class. For example, if learners have not learned how to identify different qualities of seventh chord, it may not be recommended to demand such tasks of them. Ideally, theory and aural can be taught synchronously, yet not all university music schools are set up in the same way. Timbre may also be used to differentiate elements of musical structure. An educator may request a class to listen to particular instruments in a recording as they demonstrate a structural element. Timbre, when used in this aural fashion, can be a great way to differentiate different musical aspects and assist both theoretical and aural understandings at the same time.

Verbal approaches to musical understanding can take the form of cultural and historical examples. Such approaches would often include the use of a story regarding the theoretical elements or concepts to be taught. These approaches are similar to musicological practices, and serve to provide contextualised understanding to the formalised reference structure of musical structure as described in chapter four. As well as using stories to describe historical and sociocultural influences of musical structure, it is suggested that stories be also used to facilitate regulated breaks in learning. It is very easy to overload the minds of learners; musical structure

is very abstract and requires the learner to be very involved and engaged with the material. For example, using story to convey humorous anecdotes after sections of educational content can give learners a positive experience to relate with the class, provides a segue between concepts and can help establish or develop rapport.

Another method that can establish and develop rapport with learners is to customise a given course as much as possible with examples that are familiar to them or divergent yet demonstrate a similar concept. Student surveys can assist to inform an educator of which styles of music are enjoyed or preferred by learners. Ultimate discretion ends with the particular educator, and copyright laws may still cover newer pieces of music, so there are limitations to selecting content to be used as demonstrations. This suggestion also implies that an educator might have enough time to analyse and prepare a lecture that involves customised examples rather than using materials that are already prepared. As aural mechanisms can help identify theoretical structures that underlay pieces of music, an educator may be able to listen to artists mentioned in the student surveys in order to gain insight into the structural devices used by them. The student-suggested pieces may demonstrate particular concepts yet still under copyright, so a side note or mention in the study guide of relevant student-suggested pieces could be mentioned to concurrently demonstrate a concept taught in a given lesson. For instance, the course guide could contain a task for students to locate the use of the Neapolitan sixth in Supertramp's *The Logical Song* by aural means, hence not infringing on copyright yet still allowing familiar student-suggested influences to become integrated into a given course. Such approaches could be adapted within a tutorial setting, as time taken to discuss familiar pieces to students that might involve particular musical structures can impinge upon the time required to deliver new course content.

Delivering a music theory via lecture is a different learning environment to that of a tutorial session. All students can be taught the same content at once within a lecture, yet this method does not allow time for learners to work on supervised tasks in order to experience and understand content in an individualised manner. Tutorial sessions provide a different learning environment to the lecture theatre, one in which tasks and activities can be set to revise and solidify concepts addressed of a given week. With students divided into smaller tutorial groups, the environment is suited for more personalised tasks that can facilitate idiosyncratic understandings and applications of content delivered within a lecture. Time is required for learners to develop their own understandings of music theory content, and support from an educator in a tutorial environment can help facilitate the growth of individuals.

Identity formation plays a major part in the development of musical thought as influences, motivations and culture play a contributing role to the development of identity. Understanding the symbiotic relationship between musicianship and musicality within the context of identity regarding influences, motivations, understandings, applications and personal familiarity can help facilitate to the formation of idiosyncratic musical thought. Musical thought requires the facilitation of concepts as understood by the particular; namely “what information does music theory teach?” This can be achieved by presenting underlying theoretical frameworks as a sociocultural framework structure, which each learner can derive idiosyncratic understanding in terms of purpose, function and practical application. Such theoretical frameworks are best presented within a lecture format as a socially constructed phenomenon whilst adopting an aesthetic approach to its teaching and learning.

This way, tutorials can focus on practical applications of such sociocultural teachings, as the more personalised environment inherent to such a setting that allows for discussion regarding application to practical skillsets. Educators would be able to include learners in demonstrating concepts within a tutorial setting through discovering what motivates or influences learners can enable teaching approaches through familiar experiences. For example, asking learners to demonstrate practice-based skillsets in front of their peers to demonstrate personalised understandings of theoretical structures can open doors for guided discussions regarding convergent or divergent interpretations. Such an example could be structured within a short project asking, “how can the information from the lecture series be used?” Ultimately, tutorial sessions can be guided by an underlying inquiry into how practice-based skillsets use music structure whilst adopting a praxis approach to its teaching and learning.

The interdependency of skillsets demonstrates the use of structural underlay through practice-based musicality skillsets, information-based skillsets, understandings and experience. This means that practice-based approaches can inform understandings among information-based skillsets. This then means that teaching approaches can take advantage of strengths inherent to both aesthetic and praxis paradigms of music education within lecture- and tutorial-based formats. Convergent understandings of sociocultural framework favour an aesthetic approach within a lecture-format; divergent understandings of practical experience favour a Praxial approach within a tutorial format.

I recommend adopting both lectures and tutorials as a means to deliver music theory, as individualised development requires both sociocultural contextualisation and time to discuss, compare and explore diverging perceptions of learners. Such a multifaceted educational structure can approach the teaching and learning of music theory from both aesthetic and praxis paradigms. Group assessments can be targeted as a point of focus within the sociocultural focused lecture series, whereas individual components to coursework assessment can be the focus of tutorial streams. When comparing such an educational structure to one that only involves lecture delivery, it becomes incredibly difficult to facilitate individual learners, as delivery is restricted to what can be achieved using such a particular learning environment. Likewise, if tutorials are the only means of delivery, pedagogy is also restricted by the constraints of the particular learning environment. Teaching music theory through the sole use of tutorials runs the risk of addressing the sociocultural aspects of musical structure in different ways to each tutorial group. Throughout this thesis, a consistent theme has been the dualist nature of the musical phenomenon: it contains convergent historical and sociocultural references to which individual divergent perceptions and applications are realised. Two different approaches are required simultaneously in order to address both sides of this phenomenological coin. Utilising both lectures and tutorials, which inherently contain strengths that complement sociocultural and individual delivery respectively, suit the underlying nature of the musical phenomenon.

In approaching a visual method of teaching and learning music theory, I have developed an interval matrix from discussions in chapter eight (Table 8.5). The matrix is shown below:

		8	9	10	11	0	1	2	3	4	5	6	7	8	Note Value
		Ab	Bb	Cb		Db		Eb		Gb		Ab			Enharmonic
		G#	A	A#	B	C	C#	D	D#	E	F	F#	G	G#	Equivalents
8	G# Ab	0	1	2	3	4	5	6	7	8	9	10	11	0	Cycle of Fifths/Fourths ordering of Intervals (distance in number of semitones)
1	Db C#	7	8	9	10	11	0	1	2	3	4	5	6	7	
6	Gb F#	2	3	4	5	6	7	8	9	10	11	0	1	2	
11	Cb B	9	10	11	0	1	2	3	4	5	6	7	8	9	
4	E	4	5	6	7	8	9	10	11	0	1	2	3	4	
9	A	11	0	1	2	3	4	5	6	7	8	9	10	11	
2	D	6	7	8	9	10	11	0	1	2	3	4	5	6	
7	G	1	2	3	4	5	6	7	8	9	10	11	0	1	
0	C	8	9	10	11	0	1	2	3	4	5	6	7	8	
5	F	3	4	5	6	7	8	9	10	11	0	1	2	3	
10	A# Bb	10	11	0	1	2	3	4	5	6	7	8	9	10	
3	D# Eb	5	6	7	8	9	10	11	0	1	2	3	4	5	
8	G# Ab	0	1	2	3	4	5	6	7	8	9	10	11	0	
Note Value	Enharmonic Equivalents	Chromatic Ordering of Intervals (distance in number of semitones)													

Unison
Minor 2nd
Major 2nd
Minor 3rd
Major 3rd
Perfect 4th
Tritone
Perfect 5th
Minor 6th
Major 6th
Minor 7th
Major 7th
Perfect 8ve

The interval matrix displays a layout of notes and intervals that underpin all greater western music theory structures. It can demonstrate structures from Schenkerian or set theory analysis methodological perspectives, depending on how it is interpreted. Common to both methodologies is the consideration of notes and intervals in time to describe musical structures. As such, the matrix can be seen as a platform of potential pitch relationships that can occur at any given point in a piece of music. Schenkerian and set theory analysis methodologies can be described as divergent ways of representing how notes and intervals interact to form greater musical structures. In order to clarify this, I will unpack a feature inherent in the interval matrix and then explain how both Schenkerian and set theory analyses might approach the representation of musical structure.

When looking at the matrix, each row and each column wrap around on themselves. This represents the phenomenon of octave equivalence and means only one octave need be displayed. Resultant intervals are shown in a grid as a correlation of horizontal (key-based) and vertical (chromatic-based) relationships. If I look at the ninth row (labelled C) and the seventh column

(labelled D), the resultant interval is 2 (as 2 semitones are between C and D, known as a major second). In this way, the matrix plots intervals as they relate to each other. In order to identify the inversion of an interval, simply subtract the resultant interval from twelve (so in the above case, $12 - 2 = 10$, which is the interval of a minor seventh). A feature of this arrangement is the capacity to identify constituent notes of scale sets. Scale sets are comprised of particular groups of intervals, so in this example I will unpack a major scale. I am able to represent all major scales as a set of intervals comprising from a key's tonic note (zero, two, four, five, seven, nine and eleven semitones from the tonic). Using this key-based set as a horizontal reference (locating the numbers 0, 2, 4, 5, 7, 9, 11 and looking up), reveals each note of each major scale. Each note is then signified by their note value [so in the case of Ab major (either first or last rows), the note values would be 8 (Ab), 10 (Bb), 0 (C), 1 (Db), 3 (Eb), 5 (F) and 7 (G)].

In Schenkerian analysis, labelling conventions relate to key-based sets, where notes within scales are labelled with numerals according to their relevant positions in the scale. Each scale position can have chords built upon them using the other notes of the scale set and as such have a designated quality. It is both the chordal quality and the scale position that are represented by an assigned Roman numeral, with upper case Roman numerals representing major sonorities and lower case representing minor sonorities. Extra symbols accompany other descriptions of chordal quality. In the example given, when searching horizontally for the intervals of the key-based set (0, 2, 4, 5, 7, 9 and 11), it is the same as searching for the roots of I, ii, iii, IV, V, vi and vii^o of every major scale. This logic applies to any scalar pattern used. This means that one can use the matrix using this method to identify notes of any scale. With this information, interactions of notes within the context of scales can be analysed with complex structures at varying levels as visualised throughout chapter seven. In this way, all tonal compositions that can be analysed through Schenker's method can use the matrix as an analysis tool.

For post-tonal and atonal western music, set theory analysis is used. In set theory analysis, each note value is of primary focus. At a fundamental level, note values are arranged into a tone row, which is a particular chromatic ordering that uses all twelve notes of the octave. Tone rows are then manipulated in various ways to create compositions. In order to analyse such structures, note values are represented with Arabic numbers; the tone row is of primary focus and intervals are secondary. There are more complex structures involved with creating tone rows and manipulating them. The numeric layout of the interval matrix can be used to manipulate tone rows by correlating note and interval values by either number or colour. In the example given,

the notes used to create a tone row were identified at the end of the process [so in the case of Ab major (either first or last rows), the note values would be 8 (Ab), 10 (Bb), 0 (C), 1 (Db), 3 (Eb), 5 (F) and 7 (G)]. In this way, the matrix can be used to assist the teaching and learning of compositions based on set theory.

There is an exciting prospect in that both tonal and non-tonal compositions can be analysed using the interval matrix. This acknowledges the interval matrix as a single reference point to analysing any tonal or non-tonal western music that could be analysed using Schenkerian or set theory methodologies. More exciting perhaps is that this single reference point also represents a three-dimensional place holding structure underlying all structures within the repertoire of both analysis methodologies. This means that through the interval matrix, music theory can be taught and learned with a three-dimensional visual aid to analysis. This has tremendous potential when considering teaching and learning approaches.

This chapter has attempted to elucidate suggestions and recommendations as derived from emergent themes throughout this thesis. This has been done with the intention to provide approaches towards learner-centred teaching and learning of western music theory. As I perceive individual university settings and environments to operate and function in differing ways, I have approached my recommendations and suggestions in ways to cater for this. I have no intention of dictating a single stone-cast method to music theory's teaching and learning, instead I have attempted to provide individual educators with options that are hoped to resonate as appropriate within differing university settings. I have also provided a musical analysis tool in the interval matrix. The next chapter will provide discussions focused on future implications and applications of my research.

10. Implications for Future Research

In this final chapter, I will briefly outline implications for future research within the teaching and learning of western music theory. Potential areas of interest correlate with different perspectives within the scope of teaching and learning of western music theory, namely: student, educator and phenomenological stances. When concerning such stances, three questions emerge for future directions in music theory education research:

- How do people interpret their own western musical experiences?
- How can educators facilitate students to ‘see’ western music theory structures?
- To what ends might my autoethnographical framework affect western music theory teaching and learning?

Each of these questions focuses on an aspect of music theory teaching and learning. The first asks about the interpretations people make of western music. In education research, student experiences of music theory teaching and learning regarding musical thought would be of particular interest. The second question considers future pedagogical approaches that use visual methods proposed by the current study in teaching and learning western of music theory. In light of being able to visualise western music theory structures, alternate ocular methods can be devised to cater for specific pedagogical demands. The final question regards framing the phenomenon of teaching and learning western music theory. The interval matrix can visually represent tonal and non-tonal analyses; as such it challenges the way music can be ‘seen’. In this way, future researchers might be able to come closer to answering larger questions related to the western musical phenomenon.

Future research could focus on people’s interpretations of western music experiences. These studies could be ethnographical, longitudinal or otherwise specifically focused. Data from such studies could be used to support or challenge aspects of the current research, pertaining to musical thought and its constituencies. The more data collected in this way, the more researchers can gain insight to the multitudes of ways teachers and learners interpret musical structure, or understand western music structure from different experiences in diverging ways.

Studies into the effectiveness of visual approaches to the teaching and learning of western music theory would serve to contextualise research in music pedagogy. Western music theory is at the core of musical thought and practice, where understanding musical structure serves to contextualise and inform musical interpretations. In this way, pedagogy or curricula can be researched that aims to synthesise this symbiotic characteristic of musical structure and skillsets, where listening, structure, communication and interpretation form the core of a student's musical understandings. In enabling a visual representation of abstract musical concepts, compounding modes of delivery can facilitate the teaching and learning of western music theory. Future research into the effectiveness of such visualisations would serve to improve the efficacy of such approaches.

In approaching the visualisation of a greater western musical structure, the interval matrix can visually represent tonal and non-tonal analyses; as such it provides one mode to which music can be 'seen'. Research into the ways in which the interval matrix could be used to map entire pieces as combinations of pitch in time would serve to catalogue western music in a way never achieved before. Pedagogical guides showing the ways analysis structures can be represented using the interval matrix as a tool for musical thinking can lead to research into automating the process using technology. At this juncture, with the automatic visualisation of western tonal and non-tonal music analyses, music can be brought to the visual realm. As the music would be analysed as it is visualised using such technology, future development into the visual recognition of structures as represented by this technological mapping approach could serve future pedagogical approaches. In general, the utility of the interval matrix can serve to propel the teaching and learning of western music theory into a new age. In being able to represent multitudes of expressive capabilities through a foundational visualised structure, western music becomes quantitatively measurable, whilst interpretations remain qualitatively comparable. In this way, music situates itself between research approaches, and shows itself in a new light. Future phenomenological investigations of western music theory structure can use the current study as a platform to expand or challenge inherent concepts. In this way, future researchers might be able to come closer to approaching larger philosophical questions such as, 'what, how and why *is* music?'

V – Appendices

A: Ethical Approval



Monash University Human Research Ethics Committee (MUHREC)
Research Office

Human Ethics Certificate of Approval

Date: 8 March 2011

Project Number: CF11/0520 – 2011000218

Title: Tertiary students' prior experiences with music composition in educational contexts

Chief Investigator: Dr Jane Southcott

Approved: From: 8 March 2011 To: 8 March 2016

Terms of approval

1. The Chief investigator is responsible for ensuring that permission letters are obtained, if relevant, and a copy forwarded to MUHREC before any data collection can occur at the specified organisation. **Failure to provide permission letters to MUHREC before data collection commences is in breach of the National Statement on Ethical Conduct in Human Research and the Australian Code for the Responsible Conduct of Research.**
2. Approval is only valid whilst you hold a position at Monash University.
3. It is the responsibility of the Chief Investigator to ensure that all investigators are aware of the terms of approval and to ensure the project is conducted as approved by MUHREC.
4. You should notify MUHREC immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.
5. The Explanatory Statement must be on Monash University letterhead and the Monash University complaints clause must contain your project number.
6. **Amendments to the approved project (including changes in personnel):** Requires the submission of a Request for Amendment form to MUHREC and must not begin without written approval from MUHREC. Substantial variations may require a new application.
7. **Future correspondence:** Please quote the project number and project title above in any further correspondence.
8. **Annual reports:** Continued approval of this project is dependent on the submission of an Annual Report. This is determined by the date of your letter of approval.
9. **Final report:** A Final Report should be provided at the conclusion of the project. MUHREC should be notified if the project is discontinued before the expected date of completion.
10. **Monitoring:** Projects may be subject to an audit or any other form of monitoring by MUHREC at any time.
11. **Retention and storage of data:** The Chief Investigator is responsible for the storage and retention of original data pertaining to a project for a minimum period of five years.



Professor Ben Canny
Chair, MUHREC

cc: Mr Robert Ashton-Bell

Postal – Monash University, Vic 3800, Australia
Building 3E, Room 111, Clayton Campus, Wellington Road, Clayton

www.monash.edu/research/ethics/human/index/html
ABN 12 377 614 012 CRICOS Provider #00008C

B: Student Survey

Monash University Clayton Campus

Survey of the educational experiences of first-year students

This questionnaire gives you a chance to have your say on what you think of Monash University, tell us about your previous musical experiences and to tell us about yourself. The information you provide will help to make composition education more relevant to the lives of university students and to improve educational opportunities. This questionnaire is confidential and will only be used for the purposes of research.

1. **Date of Birth:** ___ / ___ / ___

2. **Postcode of home address:** _____

3. **Are you** Male Female?

4. **Are you an international student?** Yes No

5. **Do you have any family members who play a musical instrument?**
 Yes No (Go to question 7)

6. **Please list family members and the instrument(s) they play.**

7. **Do you have any family members who compose their own music?**
 Yes No (Go to question 9)

8. **Please list family members and the style(s) in which they compose.**

9. **Why did you choose your Secondary School?** *Tick one or more boxes to show your reasons*

- | | |
|---|---|
| <input type="checkbox"/> Good reputation | <input type="checkbox"/> Good facilities |
| <input type="checkbox"/> Family members (or friends) attended | <input type="checkbox"/> Convenient location |
| <input type="checkbox"/> Problems at my previous school | <input type="checkbox"/> Other (please specify) _____ |

10. **Did your school have a year 12 specialist music class?** Yes No

11. **What co-curricular musical activities did your school have?** *Tick all of the boxes that apply*

- School bands (orchestra / wind band etc.) School bands (rock / pop etc.)
 Individual instrumental lessons Choirs
 Other (please specify) _____

12. **What topics were you taught in your music classes at school?** *Tick all of the boxes that apply*

- Music theory Improvisation
 Instrumental practice Composition (performed by class)
 Music appreciation Studio / Recording
 Other (please specify) _____

13. **What musical facilities were available to you at your school?** *Tick all of the boxes that apply*

- Sibelius Auralia
 General computer usage Studio equipment
 Practice rooms Instruments (Piano / Drum Kits / Guitars etc.)
 Other (please specify) _____

14. **What musical activities did you pursue (outside school) prior to coming to University?**
(please list)

15. **Did you ever try composing your own music at school?** Yes No

16. **Did you ever try composing your own music in your spare time while at school?**
 Yes No *(go to question 22)*

17. **Do you still compose music in your spare time?** Yes No

18. **How old were you when you wrote your first piece?** _____

19. **What made you interested in composing your first piece?**

20. **What genre(s) of music are closest to your style of composition?**

21. **Do you see yourself as a composer?** Yes Sometimes No

22. **Have you had any music theory lessons outside of school?** Yes No

23. **Music theory, to me is:**

_____ strongly agree agree disagree strongly disagree no opinion

Useful	<input type="checkbox"/>				
Not useful	<input type="checkbox"/>				
Interesting	<input type="checkbox"/>				
Uninteresting	<input type="checkbox"/>				
Easy to understand	<input type="checkbox"/>				
Hard to understand	<input type="checkbox"/>				
Relevant to performance	<input type="checkbox"/>				
Irrelevant to performance	<input type="checkbox"/>				

24. **In your own words, do you think learning music theory is important? Why or why not?**

25. **To me, learning how to compose music (in any genre) :**

	strongly agree	agree	disagree	strongly disagree	no opinion
Is important	<input type="checkbox"/>				
Is not important	<input type="checkbox"/>				
Is only achievable by a few	<input type="checkbox"/>				
Can be achieved by all	<input type="checkbox"/>				
Interests me	<input type="checkbox"/>				
Does not interest me	<input type="checkbox"/>				
Is relevant to performance	<input type="checkbox"/>				
Is irrelevant to performance	<input type="checkbox"/>				

26. **What do you think is the difference between composition and theory?**

27. **Did you ever do any out-of-school music examinations?** Yes No (*go to question 30*)

28. **What examination(s) did you undertake?**

- | | |
|--------------------------------|---|
| <input type="checkbox"/> AMEB | <input type="checkbox"/> ANZCA |
| <input type="checkbox"/> ABRSM | <input type="checkbox"/> Trinity Guildhall |
| <input type="checkbox"/> AGM&S | <input type="checkbox"/> Other (please specify) _____ |

29. **What was the highest level you achieved?**

Instrument(s) : _____

Composition / theory: _____

Other (please specify): _____

30. **What styles of music interested you during your time at school?** *(Tick all that apply)*

- | | |
|--|--|
| <input type="checkbox"/> Classical | <input type="checkbox"/> Jazz |
| <input type="checkbox"/> Blues | <input type="checkbox"/> Folk |
| <input type="checkbox"/> Electronica / Techno / Trance | <input type="checkbox"/> Pop |
| <input type="checkbox"/> Easy Listening | <input type="checkbox"/> Country / Western |
| <input type="checkbox"/> Reggae | <input type="checkbox"/> Latin |
| <input type="checkbox"/> World | <input type="checkbox"/> Rhythm and Blues |
| <input type="checkbox"/> Rock | <input type="checkbox"/> Metal |
| <input type="checkbox"/> Other (please specify) _____ | |

31. **Is learning music theory important? Why or why not?** *You can give more than one answer*

32. **What do you think are the three most important aspects of music? Why?**

Bibliographical References

- Agar, M. H. (1986). *Speaking of ethnography* (Vol. 2). Beverley Hills, CA: Sage.
- Agmon, E. (1990). Music theory as cognitive science: Some conceptual and methodological issues. *Music Perception*, 7(3), 285–308.
- Aiello, R., & Williamon, A. (2002). Memory. In R. Parncutt & G. McPherson (Eds.), *The Science and Psychology of Music Performance: Creative Strategies for Teaching and Learning* (pp. 167–182). New York: Oxford University Press.
- Aldwell, E., Schachter, C., & Cadwallader, A. (2011). *Harmony and Voice Leading* (4th ed.). Boston: Schirmer Cengage Learning.
- Alperson, P. (1994). *Special Issue: The Philosophy of Music, Journal of aesthetics and art criticism, Volumes 51-52*. American Society for Aesthetics.
- Altenmüller, E., & Gruhn, W. (2002). Brain Mechanisms. In R. Parncutt & G. McPherson (Eds.), *The Science and Psychology of Music Performance: Creative Strategies for Teaching and Learning* (pp. 63–82). New York: Oxford University Press.
- Anderson, L. W., Krathwohl, D. R., Airasian, P. W., Cruikshank, K. A., Mayer, R. E., Pintrich, P. R., ... Wittrock, M. C. (2001). *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives. Spring* (Vol. 83, pp. 212–220). Retrieved from <http://academicarchive.snhu.edu/handle/10474/1265>
- Anttila, M. (2010). Problems with school music in Finland. *British Journal of Music Education*, 27(3), 241–253.
- Ashworth, P. (2009). Conceptual Foundations of Qualitative Psychology. In J. A. Smith (Ed.), *Qualitative Psychology: A Practical Guide to Research Methods* (2nd ed., pp. 4–25). London: Sage.
- Askew, G. (1993). *Music Education in the Primary School*. Victoria, Australia: Longman Cheshire.

- Asmus, E. P. (1978). Perception and analysis of the difference tone phenomenon as an environmental event. *Journal of Research in Music Education*, 26(2), 82–89.
- Babbitt, M. (1992). *The function of set structure in the twelve-tone system (Unpublished Doctoral dissertation)*. Princeton University.
- Barrett, M. (2002). Toward a “situated” view of the Aesthetic in music education. *Journal of Aesthetic Education*, 36(3), 67–77.
- Bartleet, B. L. (2009). Behind the baton: exploring autoethnographic writing in a musical context. *Journal of Contemporary Ethnography*, 38(6), 713–733.
- Batstone, P. (1969). Musical analysis as phenomenology. *Perspectives of New Music*, 94–110.
- Beach, D. (2012). *Advanced Schenkerian Analysis: Perspectives on phrase rhythm, motive and form*. London: Routledge.
- Bengtsson, J. (2006). The Many Identities of Pedagogics as a Challenge: Towards an Ontology of Pedagogical Research as Pedagogical Practice. *Educational Philosophy and Theory*, 38(2), 115–128.
- Benson, B. E. (2003). *The Improvisation of Musical Dialogue: A Phenomenology of Music*. London: Cambridge University Press.
- Bent, I. (1994). *Hermeneutic approaches*. Cambridge: Cambridge University Press.
- Berger, J. (1984). *Ways of Seeing*. London: Penguin Books.
- Berliner, P. F. (2009). *Thinking in jazz: The infinite art of improvisation*. Chicago, IL: University of Chicago Press.
- Berlioz, H. (1948). *Treatise on Orchestration trans. R. Strauss & T. Front*. New York: Kalmus.
- Birks, M. (2014). Quality in Qualitative Research. In J. Mills & M. Birks (Eds.), *Qualitative Methodology: A Practical Guide* (p. 221). London: SAGE Publications.
- Birks, M., & Mills, J. (2011). *Grounded theory: A practical guide*. London: Sage.

- Bjørnstad, F. O., & Espeland, M. (2010). Norway: Educational progress or stasis on the outskirts of Europe? In G. Cox & R. Stevens (Eds.), *The origins and foundations of music education: Cross-cultural historical studies of music in compulsory schooling* (pp. 77–90). London: Bloomsbury Publishing.
- Blacking, J. (1973). *How Musical is Man?*. Seattle and London: University of Washington Press.
- Blasius, L. (2002). Mapping the terrain. In T. Christensen (Ed.), *Cambridge History of Western Music Theory* (pp. 27–45). Cambridge: Cambridge University Press.
- Blatter, A. (1997). *Instrumentation and Orchestration* (2nd Ed.). CA: Schirmer Thomson Learning.
- Bloom, B. S., & Krathwohl, D. R. (1956). *Taxonomy of educational objectives: The classification of educational goals. Handbook I: Cognitive domain*. London: Longmans, Green & Co.
- Bolden, B. (2009). Teaching composing in secondary school: A case study analysis. *British Journal of Music Education*, 26(2), 137–152.
- Bolling, M. E. (1993). *The Jazz Theory Workbook (Arr. by Jerry Coker)*. Germany: Advance Music.
- Bowman, W. D. (2005). The Limits and Grounds of Musical Praxialism. In D. J. Elliott (Ed.), *Praxial Music Education: Reflections and Dialogues* (pp. 52–78). London: Oxford University Press.
- Brezinka, W. (1992). *Philosophy of educational knowledge: an introduction to the foundations of science of education. Philosophy of education, and practical pedagogics* (Vol. 3). Kluwer Academic Pub.
- Brown, J. (2007). *Western Music and Race*. London: Cambridge University Press.
- Brown, M. (2005). *Explaining tonality: Schenkerian theory and beyond*. UK: Boydell & Brewer.
- Brown, M., Dempster, D., & Headlam, D. (1997). The# IV (bV) Hypothesis: Testing the Limits of Schenker's Theory of Tonality. *Music Theory Spectrum*, 19(2), 155–183.

- Bullen E. & Kenway, J. (2005). Bourdieu, subcultural capital and risky girlhood. *Theory and Research in Education*, 3(1), 47–61.
- Burkholder, J. P., & Palisca, C. V. (2006). *The Norton Anthology of Western Music: Volume 1: Ancient to Baroque*. New York: WW Norton & Co.
- Byers, S., Jones, P., & Kervin, L. (2012). What counts as comprehension in teacher practice? *Literacy Learning: The Middle Years*, 20(3), 18–27.
- Cadwallader, A., & Gagne, D. (2012). *Analysis of Tonal Music: A Schenkerian approach*. London: Oxford University Press.
- Campbell, M. R. (1999). Learning to teach music: A collaborative ethnography. *Bulletin of the Council for Research in Music Education*, 139, 12–36.
- Carruthers, G. (2008). Educating professional musicians: lessons learned from school music. *In International Journal of Music Education*, 26(2), 127–135.
- Castelán, B. Y., Gaeta, M. L., & Cavazos, J. (2014). The Influence of Educational Communication in the Process of Curriculum Design. In *INTED2014 Proceedings* (pp. 6999–7004).
- Chenoweth, J. (2009). An Outsider’s Guide to Classical Music: Teaching the Western Canon as “Other.” *College Music Symposium*. The College Music Society.
- Christensen, E. (2012). Music Listening, Music Therapy, Phenomenology and Neuroscience (Doctoral dissertation).
- Christensen, T. (Ed.). (2002). *The Cambridge History of Western Music*. Cambridge: Cambridge University Press.
- Clague, M., Evans, J., Fournier, K., Hickey, M., & Younker, B. A. (2009). Building Bridges: Same and Different Issues Across. In *Music Theory, Music History, and Music Education. In College Music Symposium* (pp. 140–153). The College Music Society.
- Clifton, T. (1973). Music and the A Priori. *Journal of Music Theory*, 17(1), 66–85.

- Clifton, T. (1975). Some comparisons between intuitive and scientific descriptions of music. *Journal of Music Theory*, 19(1), 66–110.
- Clifton, T. (1976). Music as constituted object. *Journal of Musicological Research*, 2(1-2), 73–98.
- Clifton, T. (1983). *Music as heard: a study in applied phenomenology*. New Haven: Yale University Press.
- Cohn, R. (1992). The autonomy of motives in Schenkerian accounts of tonal music. *Music Theory Spectrum*, 14(2), 150–170.
- Collingwood, R. G. (1938). *The principles of art* (Vol. 11). Oxford: Oxford University Press.
- Cook, N. (1989). Music theory and “good comparison”: A Viennese perspective. *Journal of Music Theory*, 33, 117–141.
- Cook, N. (2002). Epistemologies of music theory. In T. Christensen (Ed.), *The Cambridge History of Western Music* (pp. 78–108). Cambridge: Cambridge University Press.
- Cooke, D. (1959). *The language of music*. Oxford: Oxford University Press.
- Cox, G. (2010). Britain: Towards “a long overdue renaissance”? In G. Cox & R. Stevens (Eds.), *The Origins and Foundations of Music Education: Cross-Cultural Historical Studies of Music in Compulsory Schooling* (pp. 15–28). London: Continuum.
- Crews E., K. (1973). Review of: Foundations and Principles of Music Education by Charles House. *Music Educators Journal*, 59(7), 82–84.
- Crozier, W. R. (1997). Music and Social Influence. In D. J. Hargreaves & A. North (Eds.), *The Social Psychology of Music*. London: Oxford University Press.
- Csikszentmihalyi, M. (1992). *Flow: The Psychology of Happiness*. London: Rider.
- Dave, R. H. (1970). Psychomotor Levels. In R. H. Armstrong (Ed.), *Developing and Writing Behavioural Objectives* (pp. 33–34). Tucson AZ: Educational Innovators Press.

- Davidson, J. W. (1997). Environmental Factors in the Development of Musical Performance Skill. In D. J. Hargreaves & A. C. North (Eds.), *The Social Psychology of music* (pp. 209–228). London: Oxford University Press.
- Davis, R. A. (2005). Music Education and Cultural Identity. In D. Lines (Ed.), *Music Education for the New Millennium: Theory and Practice Futures for Music Teaching and Learning* (pp. 7–28). London: Blackwell Publishing.
- DeBellis, M. (2010). Schenkerian Theory's Empiricist Image. *Music Theory Spectrum*, 32(2), 111–120.
- Dewey, J. (1899). Education as a religion. In J. A. Boyston (Ed.), *J. Dewey The Middle Works, 1899-1924, 1921-1922* (pp. 317–322). IL: Southern Illinois University Press.
- Dewey, J. (1902). Academic freedom. *Educational Review*, 23(4), 1–14.
- Dewey, J. (1910). *The influence of Darwinism on philosophy, and other essays in contemporary thought*. New York, NY: Henry Holt and Co.
- Dewey, J. (1934). *Art as Experience*. New York, NY: Putnam.
- Dewey, J., & Small, A. W. (1897). *My pedagogic creed (No. 25)*. New York & Chicago: EL Kellogg & Company.
- Dufrenne, M. (1973a). *Phénoménologie de l'expérience esthétique. 2 vols. Paris: Presses Universitaires de France, 1953; The Phenomenology of Aesthetic Experience trans. Edward S. Casey*. Evanston, IL: Northwestern University Press.
- Dufrenne, M. (1973b). *The phenomenology of aesthetic experience*. Evanston, IL: Northwestern University Press.
- Edlund, L. (1963a). *Modus Novus: Studies in reading atonal melodies*. Stockholm: Edition Wilhelm Hansen.
- Edlund, L. (1963b). *Modus Vetus: Sight Singing and Ear-Training in Major/Minor Tonality*. Stockholm: Edition Wilhelm Hansen.

- Eisner, E. W. (1979). The Use of Qualitative Forms of Evaluation For Improving Educational Practice. *Educational Evaluation and Policy Analysis*, 1(11), 11–19.
- Eisner, E. W. (1985). Why Art in Education and Why Art Education. In E. W. Eisner (Ed.), *Beyond Creating: The Place for Art in America's Schools* (pp. 64–69). Los Angeles: The Getty Center.
- Elliot, D. J. (1995). *Music Matters: A new philosophy of music education*. New York: Oxford University Press.
- Elliot, D. J. (2000). Music and Affect: The Praxial View. *Philosophy of Music Education Review*, 8(2), 79–88.
- Ellis, C. (1997). Evocative Autoethnography: Writing Emotionally About Our Lives. In W. G. T. & Y. S. Lincoln (Ed.), *Representation and the Text: Re-framing the Narrative Voice* (pp. 116–139). CA: SUNY Press.
- Ellis, C. (2004). *The ethnographic I: A methodological novel about autoethnography*. Walnut Creek, CA: AltaMira Press.
- Ellis, C., & Bochner, A. P. (2000). Autoethnography, personal narrative, reflexivity. In N. K. D. & Y. S. Lincoln (Ed.), *Handbook of qualitative research* (2nd ed., p.). Thousand Oaks, CA: Sage.
- Ellis, C. S., Adams, T. E., & Bochner, A. P. (2011). Autoethnography: An Overview. In Forum Qualitative Sozialforschung, Forum: Qualitative. *Social Research*, 12(1). Retrieved from <http://www.qualitative-research.net/index.php/fqs/article/view/1589/3095>
- Feagin, J. R., Orum, A. M., & Sjoberg, G. (Eds.). (1991). *A case for the case study*. UNC Press Books.
- Ferrara, L. (1984). Phenomenology as a Tool for Musical Analysis. *The Musical Quarterly*, 70(3), 355–373. Retrieved from <http://www.jstor.org/stable/742043>
- Findlay, J. N. (1961). *Values and intentions: a study in value-theory and philosophy of mind*. London: Allen.

- Findlay, J. N. (1972). The contemporary relevance of Hegel. In A. McIntyre (Ed.), *Hegel: A Collection of Critical Essays* (pp. 151–187). New York: Doubleday.
- Follet, D. (2008). Point/Counterpoint, Part Deux: Two Teacher/Scholars Continue Their Pedagogical Debate. *Presented at the CMS National Conference, 49*.
- Forte, A., & Gilbert, S. E. (1982). *Introduction to Schenkerian Analysis: Form and content in tonal music*. United States: W.W. Norton & Co.
- Foshay, A. W. (1974). *Toward a Humane Curriculum*. Colorado: Social Science Education Consortium.
- Foundations of music theory. (2014). Retrieved August 24, 2014, from <http://www.adelaide.edu.au/course-outlines/106585/1/sem-1/>
- Franklin, B. M. (1977). Curriculum History: Its Nature and Boundaries. *Curriculum Inquiry*, 7(1), 74.
- Frega, A., de Couve, A., & Dal Pino, C. (2010). Argentina: From “música vocal” to educación artística: Música’. In G. Cox & R. Stevens (Eds.), *The origins and foundations of music education: Cross-cultural historical studies of music in compulsory schooling* (pp. 139–152). London: Bloomsbury Publishing.
- Friberg, A., & Battel, G. U. (2002). Structural Communication. In R. Parncutt & G. McPherson (Eds.), *The Science and Psychology of Music Performance: Creative Strategies for Teaching and Learning* (pp. 199–218). New York: Oxford University Press.
- Gadamer, H. G. (1989). *Truth and Method*,. (J. Weinsheimer & D. G. Marshall, Eds.). New York: Continuum.
- Gage, N. L., & Berliner, D. C. (1989). *Nurturing the critical, practical, and artistic thinking of teachers* (pp. 212–214). Phi Delta Kappan.
- Gardner, H. (1985). *Frames of mind: The theory of multiple intelligences*. New York: Basic books.

- Gauldin, R. (2004). *Harmonic Practice in Tonal Music* (2nd Ed.). New York: W.W. Norton & Company.
- Giorgi, A. (1985). *Phenomenology and psychological research*. Pittsburgh, PA: Duquesne University Press.
- Goble, J. S. (2003). Perspectives on Practice: A Pragmatic Comparison of the Praxial Philosophies of David Elliott and Thomas Regelski. *Philosophy of Music Education Review*, 11(1), 23–44.
- Goldberger, M. (1980). *A taxonomy of psychomotor forms* (No. 35). Michigan: Michigan State University.
- Goleman, D. (1995). *Emotional intelligence*. New York: Bantam Books.
- Goolsby, T. W. (1984). Music Education as Aesthetic Education: Concepts and Skills for the Appreciation of. *Music. Journal of Aesthetic Education*, 18(4), 15–33.
- Gordon, E. (2005). Vectors in My Research. In M. Runfola & C. Taggart (Eds.), *The Development and Practical Application of Music Learning Theory* (pp. 3–50). Chicago: GIA Publications.
- Gorrow, R. (2004). *Hearing and Writing Music: Professional training for today's musician* (2nd ed.). CA: September Publishing.
- Green, L. (2005). The music curriculum as lived experience: children's "natural" music-learning processes. *Music Educators' Journal*, 91(4), 37–42.
- Gruhn, W. (2005). Understanding Musical Understanding. In D. J. Elliott (Ed.), *Praxial Music Education: Reflections and Dialogues* (pp. 98–111). London: Oxford University Press.
- Gruhn, W. (2010). Germany: Educational goals, curricular structure, political principles. In G. Cox & R. Stevens (Eds.), *The origins and foundations of music education: Cross-cultural historical studies of music in compulsory schooling* (pp. 45–60). London: Bloomsbury Publishing.

- Guba E. & Lincoln, Y. (2004). Competing paradigms in qualitative research: Theories & Issues. In N. Hess-Biber, S. & P. Leavy (Eds.), *Approaches to Qualitative Research: A Reader in History and Practice* (pp. 17–38). New York: Oxford University Press.
- Guba, E. G. (1981). Criteria for assessing the trustworthiness of naturalistic inquiries. *ECTJ*, 29(2), 75–91.
- Hallam, S. (2001). Learning in Music: Complexity and Diversity. In C. Plummeridge & C. Philpott (Eds.), *Issues in the Teaching of Music* (pp. 61–75). New York: Routledge.
- Hargreaves, D. J., & Marshall, N. A. (2003). Developing identities in music education. *Music Education Research*, 5(3), 263–273.
- Hargreaves, D. J., & North, A. (1997). The social psychology of music. In D. Hargreaves, J., & A. North (Eds.), *The Social Psychology of music*. Oxford University Press.
- Harrison, C., Asmus, E. & Serpe, R. (1994). Effects of Musical Aptitude, Academic Ability, Music Experience, and Motivation on Aural Skills. In *Journal of Research in Music Education* (Vol. 42, pp. 131–144). MENC: The National Association for Music Education. Retrieved from <http://www.jstor.org/stable/3345497>
- Harrow, A. J. (1972). *A taxonomy of the psychomotor domain*. D. McKay Company.
- Hartwell, R. (2009). *A curricular design for post-secondary music appreciation based on the functions of music in society*. Teachers College: Columbia University.
- Hasty, C. (1981). Segmentation and process in post-tonal music. *Music Theory Spectrum*, 54–73.
- Heidegger, M. (1992). *History of the concept of time: Prolegomena* (Vol. 717). Indiana university Press.
- Hickey, M., & Rees, F. (2002). Developing a model for change in music teacher education. *Journal of Music Teacher Education*, 12(1), 7–11.
- Ho, W. C. (2010). China: Socio-political constructions of school music. In G. Cox & R. Stevens (Eds.), *The origins and foundations of music education: Cross-cultural historical studies of music in compulsory schooling* (pp. 189–204). London: Bloomsbury Publishing.

- Humphrey, S. (2013). And the word became text: a 4 x 4 toolkit for scaffolding writing in secondary English. *English in Australia*, 48(1), 46–55.
- Humphreys, J. T. (2010). United States of America: Reflections on the development and effectiveness of compulsory music education. In G. Cox & R. Stevens (Eds.), *The origins and foundations of music education: Cross-cultural historical studies of music in compulsory schooling* (pp. 121–136). London: Bloomsbury Publishing.
- Hungerland, H. (1948). Consistency as a criterion in art criticism. *The Journal of Aesthetics and Art Criticism*, 7(2), 93–112.
- Ihde, D. (1976). Listening and voice. In *Phenomenologies of Sound*. Albany: SUNY Press.
- Imada, T. (1999). A de-construction view of music education. *J. Soundscape Ass. Jpn*, 1, 53–62.
- Ingarden, R. (1973). *The literary work of art: An investigation of the borderlines of ontology, logic and the theory of language*. Northwestern University Press.
- Ingarden, R. (1975). Phenomenological aesthetics: An attempt at defining its range. *Journal of Aesthetics and Art Criticism*, 33(3), 257–269.
- Intermediate Language of Music. (2014).
- Introductory Language of Music. (2014).
- Jank, W., & Meyer, H. (1991). *Didaktische Modelle*. Frankfurt am Main: Cornelsen Verlag Scriptor.
- Jones, S., & Myhill, D. (2004). “Troublesome boys” and “complaint girls”: gender identity and perceptions of achievement and underachievement. *British Journal of Sociology of Education*, 25(5), 547–561.
- Kakkori, L. (2009). Martin Heidegger and Peter Høeg: Borderliners as uncovering and happening of truth. *Review of Contemporary Philosophy*, 8, 90–102.
- Kang, Y. (2008). Music and Liberal Arts Education: A Reply to Mark Hijleh, “Reforming Music Theory.” In *College Music Symposium* (pp. 105–107). The College Music Society.

- Kang, Y. Y. (2006). Defending music theory in a multicultural curriculum. In *College Music Symposium* (pp. 45–63). The College Music Society.
- Kaschub, M. (2002). Defining emotional intelligence in music education. *Arts Education Policy Review*, 103(5), 9–15.
- Keller, H. (2005). *Essays on music*. Cambridge University Press.
- Kelley, R. T. (2002). *Introduction to Schenkerian Analysis: “The effect of being passing” A Philosophical Basis for the Importance of Analysis*.
- Kelly-McHale, J. (2013). The Influence of Music Teacher Beliefs and Practices on the Expression of Musical Identity in an Elementary. *General Music Classroom, Journal of Research in Music Education*, 61(2), 195–216.
- Kibler, R. J., Barker, L. L., & Miles, D. T. (1977). Behavioral objectives and communication instruction: State of the research. *Human Communication Research*, 3(3), 278–288.
- Klimstra, T. A., Hale III, W. W., Raaijmakers, Q. A. W., Branje, S. J. T., & Meeus, W. H. J. (n.d.). Identity Formation in Adolescence: Change or Stability? *Journal of Youth Adolescence*, 39(2), 150–162.
- Knoblauch, H., Baer, A., Laurier, E., Petschke, S., & Schnettler, B. (2008). Visual Analysis. New Developments in the Interpretative Analysis of Video and Photography. *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research*, 9(3), Art. 26. Retrieved from <http://www.qualitative-research.net/index.php/fqs/article/view/1170/2587>
- Koch, T. (1995). Interpretive approaches in nursing research: The influence of Husserl and Heidegger. *Journal of Advanced Nursing*, 21(5), 827–836.
- Koopman, C. (1998). Music Education: Aesthetic or “Praxial”? *Journal of Aesthetic Education*, 32(3), 1–17.
- Kotska, S. (2006). *Materials and Techniques of Twentieth Century Music* (3rd ed.). River, New Jersey: Pearson Prentice Hall, Upper Saddle.

- Kramer, J. D. (1978). Moment form in twentieth century music. *Musical Quarterly*, 64(2), 177–194.
- Kramer, J. D. (1981). New temporalities in music. *Critical Inquiry*, 7(3), 539–556.
- Krathwohl, D. R., Bloom, B. S., & Masia, B. B. (1964). *Taxonomy of Educational Objectives, Handbook II: Affective domain*. New York: David McKay Company.
- Krefting, L. (1991). Rigor in qualitative research: The assessment of trustworthiness. *American Journal of Occupational Therapy*, 45(3), 214–222.
- Krettenauer, T. (2005). The role of epistemic cognition in adolescent identity formation: Further evidence. *Journal of Youth and Adolescence*, 34(3), 185–198.
- Kurth, E. (1912). *Die Voraussetzungen der theoretischen Harmonik und der tonalen Darstellungssysteme. The conditions of the theoretical harmonic and tonal representation systems*. (L. Rothfarb, Trans.). Berne: Habilitationsschrift.
- Kwami, R. M. (1994). Music education in Ghana and Nigeria: a brief survey. *Africa*, 64(4), 544–560.
- Kwami, R. M. (2001). Music Education in and for a Pluralist Society. In C. Plummeridge & C. Philpott (Eds.), *Issues in Music Teaching*. New York: RoutledgeFalmer.
- Ladson-Billings, G. (1995). Toward a theory of culturally relevant pedagogy. *American Educational Research Journal*, 32(3), 465–491.
- Langer, S. K. K. (1967). *An introduction to symbolic logic*. Courier Dover Publications.
- Lapidaki, E. (2007). Learning from Masters of Music Creativity: Shaping Compositional Experiences in Music Education. *Philosophy of Music Education Review*, 15(2), 93–117. Retrieved from <http://www.jstor.org/stable/40327276>
- Laverty, S. M. (2008). Hermeneutic phenomenology and phenomenology: A comparison of historical and methodological considerations. *International Journal of Qualitative Methods*, 2(3), 21–35.

- Legette, R. M. (2003). Multicultural Music Education Attitudes, Values, and Practices of Public School Music Teachers. *Journal of Music Teacher Education*, 13(1), 51–59.
- Leininger, M. M. (Ed.). (1985). *Qualitative research methods in nursing*. Saunders.
- Leonhard, C. (1968). Human Potential and the Aesthetic Experience. *Music Educators Journal*, 54(8), 39–41.
- Leonhard, C., & House, R. W. (1959). *Foundations and Principles of Music Education*. New York: McGraw-Hill.
- Lerdahl, F., & Jackendoff, R. (1977). Toward a Formal Theory of Tonal Music. In *Journal of Music Theory*, 21(1), 111–171.
- Lerdahl, F., & Jackendoff, R. (1983). An overview of hierarchical structure in music. *Music Perception*, 1(2), 229–252.
- Levine, M. (1995). *The Jazz Theory*. Co., Petaluma, CA: Book, Sher Music.
- Lewin, D. (1981). Some investigations into foreground rhythmic and metric patterning. In R. Browne (Ed.), *Music theory: Special topics* (pp. 101–137).
- Lewin, D. (1986). Music Theory, Phenomenology, and Modes of Perception. *Music Perception: An Interdisciplinary Journal*, 3(4), 327–392.
- Lincoln & Guba, Y. S. (1986). But is it rigorous? Trustworthiness and authenticity in naturalistic evaluation. *New Directions for Program Evaluation*, 30, 73–84.
- Lincoln & Guba, E. G., Y. S. (1985). Establishing trustworthiness. In Y. S. Lincoln & Guba, E. G. (Ed.), *Naturalistic inquiry* (pp. 289–331).
- Lincoln, Y. S., Lynham, S. A., & Guba, E. G. (2011). Paradigmatic controversies, contradictions, and emerging confluences, revisited. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage Handbook of Qualitative Research* (Vol. 4, pp. 97–128).
- Lochhead, J. (1980). Some Musical Applications of Phenomenology. *Indiana Theory Review*, 3(3), 18–27.

- Lochhead, J., & Clement, J. (1979). *Cognitive Process Instruction. Research on Teaching Thinking Skills*. Philadelphia, PA: Franklin Institute Press.
- Lochhead, J. I. (1982). *The Temporal Structure of Recent Music: A phenomenological investigation*. State University of New York at Stony Brook.
- London, J., & Rodman, R. (1998). Musical Genre and Schenkerian Analysis. *Journal of Music Theory*, 42(1), 101–124.
- Lorenzino, L. M. (2010). Cuba: Music education and revolution. In G. Cox & R. Stevens (Eds.), *The origins and foundations of music education: Cross-cultural historical studies of music in compulsory schooling* (pp. 153–170). London: Bloomsbury Publishing.
- Lorraine, R. (1993). Musicology and theory: where it's been, where it's going. *Journal of Aesthetics and Art Criticism*, 51(2), 235–244.
- Luitel, B. C., & Taylor, P. C. (2006). Envisioning transition towards a critical mathematics education: A Nepali educator's autoethnographic perspective. In J. Earnest & D. Treagust (Eds.), *Education Reform in societies in transition: International perspectives*. Rotterdam, The Netherlands: Sense.
- Lupton, M., & Bruce, C. (2010). Craft, process and art: Teaching and learning music composition in higher education. *British Journal of Music Education*, 27(3), 271–287.
- Macpherson, S. (1920). *Melody and Harmony: a treatise for the teacher and the student*. London: Joseph Williams Ltd.
- Madurell, F. (2010). France: An uncertain and unequal combat. In G. Cox & R. Stevens (Eds.), *The origins and foundations of music education: Cross-cultural historical studies of music in compulsory schooling* (pp. 29–44). London: Bloomsbury Publishing.
- Makota, J. (1964). *O klasyfikacji sztuk pięknych (On the Classification of the Arts)*. Kraków: Wydawn.
- McCarthy, M. (2010). Re-thinking "Music" in the Context of Education. In T. A. Regelski & J. T. Gates (Eds.), *Music education for changing times* (pp. 29–37). Netherlands: Springer.

- McCombs, B. L. (1997). Self-Assessment and Reflection: Tools for Promoting Teacher Changes toward Learner-Centered Practices. *NASSP Bulletin*, 81, 1.
- Menuhin, Y., & Davis, C. W. (1986). *The Music of Man*. Methuen, London.
- Merriam, S. B. (1998). *Qualitative Research and Case Study Applications in Education. Revised and Expanded from "Case Study Research in Education"*. CA: Jossey-Bass Publishers.
- Meyer, L., & Cooper, G. (1960). *The rhythmic structure of music*. Chicago, IL: University of Chicago Press.
- Moon, J. (2003). *Reflection in Higher Education Learning*. Bournemouth: University Publications.
- Moran, D. (2002). Editor's introduction. In D. Moran & T. Mooney (Eds.), *The Phenomenology Reader* (pp. 1–26). New York: Routledge.
- Morgan, R. P. (1991). *Twentieth-century Music: a history of musical style in modern Europe and America*. New York: Norton & Company.
- Moro, P. (2004). Constructions of nation and the classicisation of music: Comparative perspectives from Southeast and South Asia. *Journal of Southeast Asian Studies*, 35(2), 187–211.
- Moshaver, M. A. (2012). Telos and Temporality: Phenomenology and the Experience of Time in Lewin's Study of Perception. *Journal of the American Musicological Society*, 65(1), 179–214.
- Music. (2014). Retrieved from http://sydney.edu.au/handbooks/arts/subject_areas/music.shtml
- Music Analysis and Theory in Practice. (2014). Retrieved from <http://units.handbooks.uwa.edu.au/units/musc/musc3522>
- Music Language 1: The Diatonic World. (2012). Retrieved from <https://handbook.unimelb.edu.au/view/2012/MUSI100233>

- Music Language 3. (2014). Retrieved from <http://units.handbooks.uwa.edu.au/units/musc/musc2520>
- Music Techniques 4. (2014). Retrieved from <http://www.uq.edu.au/study/course.html>
- Music Theory. (2014). Retrieved from <http://www.utas.edu.au/arts/areas-of-study/disciplines/music-theory>
- Music Theory and Analysis. (2014). Retrieved from <http://music.anu.edu.au/research/fields/music-theory-and-analysis>
- Myers, D. E. (2006). Advancing the preparation of professional musicians through systematic education for community engagement. *Bulletin of the Council for Research in Music Education*, 170(3), 79–90.
- Narmour, E. (1991). The top-down and bottom-up systems of musical implication: Building on Meyer's theory of emotional syntax. *Music Perception*, 9(1), 1–26.
- National Privacy Principles of the Commonwealth Consolidated Privacy Act (1988). Retrieved from <http://www.oaic.gov.au/privacy/privacy-act/the-privacy-act>
- National Statement on Ethical Conduct in Human Research. (n.d.). Retrieved from http://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/e72_national_statement_131211.pdf
- Newcomb, A. (1983). Those images that yet fresh images beget. *Journal of Musicology*, 2(3), 227–245.
- Newcomb, A. (1984). Sound and feeling. *Critical Inquiry*, 10(4), 614–643.
- Ng, C. H. D. (1999). Introducing Chaozhou Xianshi musical elements into the theory and aural classes for initial teacher training courses in Hong Kong. In M. S. Barrett, G. McPherson, & R. Smith (Eds.), *Children and Music: Developmental Perspectives* (Vol. 221, pp. 221–226). Launceston, Tas: Australian and New Zealand Association for Research in Music Education (ANZARME).

- Nielsen, F. V. (2005). Didactology as a field of theory and research in music education. *Philosophy of Music Education Review*, 13(1), 5–19.
- Nielsen, F. V. (2007). Music (and arts) education from the point of view of Didaktik and Bildung. In L. Bresler (Ed.), *In International Handbook of Research in Arts Education* (pp. 265–285). Netherlands: Springer.
- Nolan, C. (2002). Music theory and mathematics. In T. Christensen (Ed.), *The Cambridge History of Western Music Theory* (pp. 272–304). Cambridge University Press.
- Normann, T. F. (1960). Review of: Foundations and Principles of Music Education by Charles Leonhard and Robert W. House. *Journal of Research in Music Education*, 8(1), 51–53.
- Norris, C. (2005). Music Theory, Analysis and Deconstruction: How They Might (Just) Get along Together/Teorija glazbe, analiza i dekonstrukcija: kako bi se mogle (barem) slagati. *International Review of the Aesthetics and Sociology of Music*, 36(1 (2005)), 37–82.
- Nussbaum, C. O. (2007). *The musical representation: meaning, ontology, and emotion*. Cambridge, MA: MIT Press.
- Ogawa, M. (2010). Japan: Music as a tool for moral education? In G. Cox & R. Stevens (Eds.), *The origins and foundations of music education: Cross-cultural historical studies of music in compulsory schooling* (pp. 205–220). London: Bloomsbury Publishing.
- Ojukwu & Esimone, E. V. (2014). An Integrated Approach to the Teaching and Learning of Cultural and Creative Arts (CCA): The Music Aspect. *Journal of Educational and Social Research*, 4(1), 333.
- Okafor, R. C. (1992). Music in Nigerian Education. *African Music*, 7(2), 5–12.
- Oppy, G., & Trakakis, N. N. (Eds.). (2010). *A Companion to Philosophy in Australia & New Zealand*. Clayton, VIC: Monash University Publishing.
- Pankhurst, T. (2008). *Schenkerguide: A Brief Handbook and Web Site for Schenkerian Analysis*. United Kingdom. Routledge.

- Pankhurst, T. (2013). What is Schenkerian Analysis? *SchenkerGuide*. Retrieved from <http://www.schenkerguide.com/whatisschenkeriananalysis.php>
- Pareyson, L. (1965). *Teoria dell'arte: saggi di estetica (Theory of art: essays in aesthetics)*. Marzorati-Editore.
- Paris, C., & Gespass, S. (2001). Examining the Mismatch between Learner-Centered Teaching and Teacher-Centered Supervision. *Journal of Teacher Education*, 52(5), 398–412.
- Parsons, G. (1999). Aesthetic Music Education and the Praxis Model: Their Relevance and Place in Today's Classrooms. In M. S. Barrett, G. McPherson, & R. Smith (Eds.), *Children and Music: Developmental Perspectives* (Vol. 259, pp. 259–262). Launceston, Tas: Australian and New Zealand Association for Research in Music Education (ANZARME).
- Patton, M. Q. (1999). Enhancing the quality and credibility of qualitative analysis. *Health Services Research*, 34(5), 1189–1208.
- Paynter, J. (1976). The Relationship between Music and the Other Arts in Lifelong Involvement. *The Australian Journal of Music Education*, 19(October), 21–24.
- Paynter, J., & Aston, P. (1970). *Sound and Silence: Classroom Projects in Creative Music*. London: Cambridge University Press.
- Pearsall, E. (1999). Mind and Music: On Intentionality, Music Theory, and Analysis. *Journal of Music Theory*, 43(2), 231–255.
- Peles, S. (2010). “Was Gleichzeitig Klingt”: The Schoenberg-Schenker Dispute and the Incompleteness of Music Theory. *Music Theory Spectrum*, 32(2), 165–171.
- Peters, M. A. (2005). Foucault, counselling and the aesthetics of existence. *British Journal of Guidance & Counselling*, 33(3), 383–396.
- Peterson, R. A. (1979). Revitalizing the Culture Concept. *Annual Review of Sociology*, 5, 137–166.
- Phelps, R. (2005). The potential of reflective journals in studying complexity “in action”. Complicity. *An International Journal of Complexity and Education*, 2(1), 37–54.

- Piston, W. (1941). *Harmony*. (M. DeVoto, Ed.) (5th ed.). New York: Norton.
- Plate, R. (2012). The Evolution of Curriculum Development in the Context of Increasing Social and Environmental Complexity. *Creative Education*, 3(8), 1311–1319.
- Plum, K. O., & Drabkin, W. (1988). Towards a methodology for Schenkerian analysis. *Music Analysis*, 7(2), 143–164.
- Plummeridge, C. (1999). Aesthetic education and the practice of music teaching. *British Journal of Music Education*, 16(2), 115–122.
- Pratt, M. G. (2009). From the editors: For the lack of a boilerplate: Tips on writing up (and reviewing) qualitative research. *Academy of Management Journal*, 52(5), 856–862.
- Quicke, J. (2010). Narrative strategies in educational research: reflections on a critical autoethnography. *Educational Action Research*, 18(2), 239–254.
- Rahn, J. (1989). New research paradigms. *Music Theory Spectrum*, 11(1), 84–94.
- Regelski, T. A. (1998). Schooling for musical praxis. *Musiikkikasvatus*, 3(1), 7–37.
- Regelski, T. A. (2000). Accounting for All Praxis: An Essay Critique of David Elliot’s “Music Matters.” *Bulletin of the Council for Research in Music Education*, 144(1), 61–88.
- Regelski, T. A. (2005). Music and Music Education: Theory and praxis for “making a difference.” In D. Lines (Ed.), *Music Education for the New Millennium: Theory and Practice Futures for Music Teaching and Learning* (Vol. 37, pp. 7–28). Blackwell Publishing.
- Reid, L. A. (1962). *Philosophy and education*. London: Heinemann.
- Reid, L. A. (1969). Education and aesthetic meaning. *The British Journal of Aesthetics*, 9(3), 271–284.
- Reimer, B. (1979). *A philosophy of music education*. Prentice-Hall: New Jersey.
- Reimer, B. (1989). Music Education as Aesthetic Education: Past and Present. *Music Educators Journal*, 75(6), 22–28.

- Reimer, B. (2006). Toward a Philosophical Foundation for Music Education Research. In R. Colwell (Ed.), *MENC Handbook of Research Methodologies*. Oxford University Press.
- Reinach, A. (1969). Concerning Phenomenology, trans Dallas Willard. *The Personalist*, 50, pp. 194–221.
- Ricoeur, P. (1981). Hermeneutics and the Critique of Ideology. In *Hermeneutics and the human sciences* (Vol. 64). Cambridge University Press.
- Rogers, M. R. (2004). *Teaching Approaches in Music Theory: An Overview of Pedagogical Philosophies*. SIU Press.
- Royse, D., Addo, A. O., Klinger, R., Dunbar-Hall, P., & Campbell, P. S. (1999). Comparing music teacher training practices around the world. *Journal of Music Teacher Education*, 8(2), 14–20.
- Rusinek, G., & Sarfson, S. (2010). Spain: A journey from a nominal towards a universally implemented curriculum. In G. Cox & R. Stevens (Eds.), *The origins and foundations of music education: Cross-cultural historical studies of music in compulsory schooling* (pp. 91–108). London: Bloomsbury Publishing.
- Russell, P. A. (1997). Musical Tastes and Society. In *The Social Psychology of music* (pp. 141–158). Oxford University Press.
- Rzepińska, M. (1970). *Historia koloru w malarstwie europejskim (History of colour in European painting)*. Kraków Wydawn.
- Sacks, O. (2007). *Musicophilia: tales of music and the brain*. Canada: Knopf.
- Savile, A. (1988). *Test of Time*. London: Oxford University Press.
- Schafer, R. M. (1977). *The tuning of the world*. Canada: Knopf Publishing.
- Schenker, H. Harmonielehre (Vienna: Universal, 1906). issued in abridged English translation as *Harmony*, ed. Oswald Jonas, trans. Elizabeth Mann Borgese (Chicago: University of Chicago, 1954), 126-29.

- Schenker, H. (1935). *Der Freie Satz. Neue musikalische Theorien und Phantasien* trans. N. Meeùs. Liège: Margada.
- Schoenberg, A. (1978). *Theory of Harmony*. California, CA: University of California Press.
- Sennett, R. (2008). *The craftsman*. Yale University Press.
- Serfine, M. L. (1988). *Music as Cognition: The development of thought in sound*. New York: Columbia University Press.
- Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information*, 22(2), 63–75.
- Simpson, E. (1971). Taxonomy of Educational Objectives for the Psychomotor Domain. In M. B. Kapfer (Ed.), *Behavioral Objectives in Curriculum Development: Selected Readings and Bibliography* (pp. 85–104). IL: University of Illinois.
- Smart, K. L., Witt, C., & Scott, J. P. (2012). Toward Learner-Centered Teaching: An Inductive Approach. *Business Communication Quarterly*, 75(4), 392–403.
- Smith, D. W. (2013). “Phenomenology”, The Stanford Encyclopaedia of Philosophy. (E. N. Zalta, Ed.). Retrieved from <http://plato.stanford.edu/archives/win2013/entries/phenomenology>
- Smith, J. A. (2009). Introduction. In J. A. Smith (Ed.), *Qualitative Psychology: A Practical Guide to Research Methods* (2nd ed., pp. 1–3). London: SAGE Publications.
- Smith, J., Flowers, P., & Larkin, M. (2009). *Interpretative Phenomenological Analysis*. London: SAGE Publications.
- Solis, G. (2012). Thoughts on an Interdiscipline: Music theory, analysis, and social theory in ethnomusicology. *Ethnomusicology*, 56(3), 530–554.
- Solomon, L. J. (2002). A Schenkerian Primer. Retrieved from <http://solomonsmusic.net/Schenker.htm>

- Spychiger, M. B. (1997). Aesthetic and Praxial Philosophies of Music Education Compared: A Semiotic Consideration. *Philosophy of Music Education Review*, 5(1), 33–41.
- Sternberg, R. J. (Ed.). (1998). *The nature of creativity: Contemporary psychological perspectives*. CUP Archive.
- Stevens, R., & Southcott, J. (2010). Australia: Recurring problems and unresolved issues. In G. Cox & R. Stevens (Eds.), *The origins and foundations of music education: Cross-cultural historical studies of music in compulsory schooling* (pp. 171–188). London: Bloomsbury Publishing.
- Swanwick, K. (1979). *A Basis for Music Education*. Windsor: NFER-Nelson Publishing Company.
- Swanwick, K. (1983). *The Arts in Education: Dreaming or Wide Awake? Special Professorial Lecture*. London.
- Swanwick, K. (1988). *Music, mind, and education*. London: Routledge.
- Swanwick, K. (1994). Authenticity and the reality of musical experience. In H. Lees (Ed.), *Proceedings of the 21st World Conference of the International Society for Music Education* (pp. 215–226).
- Swanwick, K. (1999). *Teaching Music Musically*. Routledge, London.
- Taggart, B. (2005). Music Learning Theory in the Music Theory Curriculum. In Runfola M & C. C. Taggart (Eds.), *The Development and Practical Application of Music Learning Theory* (pp. 345–358). Chicago, IL: GIA Publications.
- Temperley, D. (2011). Composition, perception, and Schenkerian theory. *Music Theory Spectrum*, 33(2), 146–168.
- Thomas, R. (1970). *MMCP: A Structure for Music Education*. New York: Media Materials.
- Thornton, L., Murphy, P., & Hamilton, S. (2004). A case of faculty collaboration for music education curricular change. *Journal of Music Teacher Education*, 13(2), 34–40.

- Titon, J. T. (Ed.). (2002). *Worlds of Music: An Introduction to the Music of the World's Peoples*. Canada: Schirmer Cengage Learning.
- Toch, E. (1977). *The Shaping Forces in Music*. Dover Publications.
- Tracy, S. J. (2010). Qualitative quality: Eight “big-tent” criteria for excellent qualitative research. *Qualitative Inquiry*, 16(10), 837–851.
- Treibitz, C. H. (1983). Substance and function in concepts of musical structure. *Musical Quarterly*, 69(2), 209–226.
- Trevarthen, C. (1999-2000). Musicality and the Intrinsic Motive Pulse: Evidence from Human Psychobiology and Infant Communication. *Musicae Scientiae*, 3(1 suppl), 155–215.
- Triantafyllaki, A. (2006). Teaching instrumental music at a Greek university music department: intersections between one-to-one pedagogical practices, the institutional context and the professional field. In *The British Educational Research Association New Researchers / Student Conference*,. University of Warwick: University of Warwick.
- Trochim, W. M. K. (2002). Positivism & post-positivism. Retrieved from <http://www.socialresearchmethods.net/kb/positvsm.htm>
- Trochim, W. M. K. (2006). Descriptive Statistics. In Research Methods Knowledge Base. Retrieved from <http://www.socialresearchmethods.net/kb/statdesc.php>
- Uljens, M. (1998). *Allmennpedagogikk (Public Education)*. Studentlitteratur.
- Van Manen, M. (2011). Phenomenology Online. Retrieved from <http://www.phenomenologyonline.com/inquiry/orientations-in-phenomenology/hermeneutical-phenomenology/>
- Vogan, N. (2010). Canada: Diverse developments across the decades. In G. Cox & R. Stevens (Eds.), *The origins and foundations of music education: Cross-cultural historical studies of music in compulsory schooling* (pp. 109–120). London: Bloomsbury Publishing.
- Vygotsky, L. S. (1978). *Mind and Society: The development of higher mental processes*. Harvard University Press.

- Wason, R. W. (2002). *Musica practica: music theory as pedagogy*. In T. Christensen (Ed.), *The Cambridge History of Western Music*. Cambridge: Cambridge University Press.
- Westerlund, H., & Väkevä, L. (2011). Who needs theory anyway? The relationship between theory and practice of music education in a philosophical outlook. *British Journal of Music Education*, 28(1), 37–49.
- Wiersma, W., & Jurs, S. G. (2009). *Research Methods in Education: An Introduction* (9th ed.). Allyn and Bacon.
- Wiggins, T. (2005). An interview with JH Kwabena Nketia: Perspectives on tradition and modernity. *Ethnomusicology Forum*, 14(1), 57–81.
- Wilcke, M. M. (2006). *Hermeneutic Phenomenology as a Research Method in Social Work*. Retrieved from <http://nbasis.wordpress.com/2013/09/20/hermeneutic-phenomenology-as-a-research-method-in-social-work/>
- Willig, C. (2008). *Introducing Qualitative Research in Psychology* (3rd ed.). Maidenhead: Open University Press McGraw-Hill.
- Willig, C. (2009). *Introducing Qualitative Research in Psychology: Adventures in theory and method* (2nd Ed.). McGraw-Hill, Open University Press.
- Witchell, J. (2001). *Music Education and Individual Needs. Issues in Music Teaching*. (C. Plummeridge & C. Philpott, Eds.). New York: RoutledgeFalmer.
- Wittgenstein, L. (1966). *Lectures & conversations on aesthetics, psychology, and religious belief*. Univ of California Press.
- Yin, R. K. (1994). *Case Study Research: Design and Methods* (2nd ed.). Sage: London.
- Yin, R. K. (2011). *Applications of case study research*. Sage.
- Wu, Y.-W. R. (1999). The changing music curriculum for Hong Kong primary schools. In M. S. Barrett, G. McPherson, & R. Smith (Eds.), *Children and Music: Developmental Perspectives* (Vol. 333, pp. 333–338). Launceston, Tas: Australian and New Zealand Association for Research in Music Education (ANZARME).

