WHOSE LINE IS IT ANYWAY?

UNTAMED POLYPHONY IN PERCY GRAINGER’S MARCHING SONG OF DEMOCRACY SKETCHES

Philip Andrew Eames

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

Sydney Conservatorium of Music
University of Sydney
2017
Abstract

In its published forms, the *Marching Song of Democracy* by Australian composer Percy Grainger (1882-1961) occupies a middling position in his output, existing as either a piece for chorus and orchestra, or for wind band. It is a relatively large-scale work both in length and orchestration, but with fewer innovative qualities compared to his more notorious works such as the *Free Music* pieces. This has led to its neglect in academic circles, despite its frequent appearance in Grainger’s aesthetic writings, his demonstrated enthusiasm for its performance, and his sensitivity around its lukewarm Australian reception. Addressing this gap, the aim of this dissertation is to more closely examine the original ambitions for the piece, and demonstrate how the 1901 a cappella *Marching Song* sketches, through their radical approach to polyphonic texture, aim to express democratic principles and foreshadow Grainger’s free music objectives.

A two-pronged approach was taken to accomplish these aims. Firstly, the compositional background and historical context of the *Marching Song* and associated sketches were explored to establish their origins, development, and the special esteem in which the piece was held by Grainger. Secondly, a wide range of analytical methods were employed – focusing on intervallic patterns, pitch-class relationships and other statistical perspectives – to measure and describe the sketches’ most distinctive and innovative qualities, in comparison to a corpus consisting primarily of Grainger works.

The conclusions drawn from this study indicate that the expression of democratic principles in the sketches often creates liberated structures that are strongly influenced by principles of equality and independence. This research therefore aims to show that Grainger’s greatest and most mature musical achievements had surfaced at the very outset of his compositional career.
Acknowledgements

I would like to express my sincere gratitude to the people who have directed and assisted my research, submitted in the 100th anniversary year of the Marching Song of Democracy’s first performance. Firstly, to my supervisors, Dr Kathleen Nelson and Dr Anne Boyd of the Sydney Conservatorium of Music, University of Sydney who provided invaluable guidance and encouragement throughout this project. I have learned a great deal from their experience and additionally Dr Nelson’s editing of this work. Recognition is also accorded to Dr Peter Petocz and Dr Nigel Nettheim, for their expertise and commentary on the mathematical elements covered.

Acknowledgements are also due to Stewart Manville and the Estate of Percy Aldridge Grainger for the kind permission to access and reproduce the musical examples included throughout this thesis. I am also indebted to the past and present Grainger Museum staff, particularly Monica Syrette and Astrid Krautschneider, for their continued assistance throughout this project and the provision of access to the Grainger collections. This also extends to the staff of the Baillieu Library and the National Library of New Zealand.

Many composers were interviewed in the early stages of this dissertation, and while it ultimately became a largely analytical work, their formative input was invaluable. Express thanks go to Ros Bandt, Michael Blake, Gavin Bryars, Brigid Burke, Warren Burt, Robert Davidson, Roger Dean, Michael Finnissy, Cat Hope, Daniel Kallman, and David Stanhope who generously gave their time to shape the direction of this dissertation.

I wish to thank my parents, Arlene and Cliff, for their encouragement with this research and for enabling me to pursue a career in music. Arlene’s lightning fast proofreading skills sped the progress of this work considerably. Special thanks also to my in-laws, Judith and Andrew, for their ongoing support and interest.

Finally, to my amazing wife, Bonnie, who has supported me on every step of this long journey. The impact she has made on this thesis, both behind the scenes and with her editing prowess, cannot be overestimated. My ability to complete this undertaking is indebted to her patience and encouragement. This thesis is dedicated to her in love and admiration.
Table of Contents

Introduction 1

Chapter 1: Development of the *Marching Song of Democracy* 18
  1.1 Review and Expansion of Joseph Kreines’ Analysis 21
    Motivic Characteristics 24
    Thematic Characteristics 27
    Expansion of Thematic and Motivic Material 28
  1.2 Fragment Taxonomy 33
  1.3 Sketch Material 46
  1.4 The Impact of Théodore Gérald 57
  1.5 Later Sketches and Publication History 67

Chapter 2: Performance and Reception 75
  2.1 Performances 76
  2.2 Public Reception to the *Marching Song* 83
    American Reception 84
    Australian Reception 88
  2.3 Grainger’s Attitude Towards the *Marching Song* 93
    Enthusiasm for Performances 95
    Australian Sensitivity 98
  2.4 Scholarly and Contemporary Perspectives 102

Chapter 3: Assembling a Comparative Corpus 108
  3.1 Grainger’s Early Piano Repertoire 111
    Pianistic Precedent Hypothesis 113
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Compositions of Repertoire Composers</td>
<td>114</td>
</tr>
<tr>
<td>3.2</td>
<td>Early Compositions of Percy Grainger</td>
<td>128</td>
</tr>
<tr>
<td>3.3</td>
<td>Later Compositions of Percy Grainger</td>
<td>136</td>
</tr>
<tr>
<td>3.4</td>
<td>Additional Outlying Works</td>
<td>143</td>
</tr>
<tr>
<td>4</td>
<td>Density</td>
<td>152</td>
</tr>
<tr>
<td>4.1</td>
<td>Methodology for Calculating Density</td>
<td>154</td>
</tr>
<tr>
<td>4.2</td>
<td>Density Analysis</td>
<td>166</td>
</tr>
<tr>
<td>4.3</td>
<td>Chernoff Face Representations</td>
<td>171</td>
</tr>
<tr>
<td>4.4</td>
<td>Interquartile Range Representations</td>
<td>177</td>
</tr>
<tr>
<td>5</td>
<td>Tessitura and Range</td>
<td>186</td>
</tr>
<tr>
<td>5.1</td>
<td>Box Plot Representations</td>
<td>188</td>
</tr>
<tr>
<td>5.2</td>
<td>Box Plot Analysis</td>
<td>194</td>
</tr>
<tr>
<td>5.3</td>
<td>Chernoff Face Representations</td>
<td>201</td>
</tr>
<tr>
<td>5.4</td>
<td>Chernoff Face Analysis</td>
<td>209</td>
</tr>
<tr>
<td>6</td>
<td>Examination of Polyphonic Voice Crossings</td>
<td>214</td>
</tr>
<tr>
<td>6.1</td>
<td>Voice Crossing in Music Theory Literature</td>
<td>215</td>
</tr>
<tr>
<td>6.2</td>
<td>Observations of Voice Crossing in Grainger’s Music</td>
<td>218</td>
</tr>
<tr>
<td>6.3</td>
<td>Challenges with Considering Complex Voice Crossing</td>
<td>222</td>
</tr>
<tr>
<td>6.4</td>
<td>Voice Crossing Analysis</td>
<td>229</td>
</tr>
<tr>
<td>7</td>
<td>Horizontal Elements of Texture</td>
<td>242</td>
</tr>
<tr>
<td>7.1</td>
<td>General Technical Considerations</td>
<td>244</td>
</tr>
<tr>
<td>7.2</td>
<td>Pitch Class Circulation Methodology</td>
<td>247</td>
</tr>
<tr>
<td>7.3</td>
<td>Combined Pitch Class Circulation</td>
<td>251</td>
</tr>
</tbody>
</table>
Chapter 8  Vertical Elements of Texture  310
  8.1 Trichord Methodology  311
  8.2 Trichord Analysis  321
  8.3 Paired Pitch-Class Methodology  326
  8.4 Paired Pitch-Class Analysis  334
  8.5 Consonant Proportions Methodology  342
  8.6 Consonant Proportions Analysis  350

Chapter 9  Vertical Structure  358
  9.1 Methodology for Examining Vertical Structures  361
  9.2 Repeated Structure Analysis  373
  9.3 Comparison to Randomised Samples  377
  9.4 Combined Analysis of Grainger’s Choral Music  385

Chapter 10  Conclusion  391

Appendix  Marching Song Sketches 1901/1902  401

Bibliography  415
Introduction

Percy Grainger’s *Marching Song of Democracy*, composed and reworked between 1901 and 1948, currently exists in three versions: as the original published edition for orchestra and chorus; a reduction for chamber ensemble and chorus; and the logistically simpler version for wind band.\(^1\) It is a result of Grainger’s veneration for the poetry of Walt Whitman – with its strong democratic associations – and for democracy in general, with a lengthy programme note containing numerous excerpts from Whitman’s *Leaves of Grass*.\(^2\)

The programme also outlines the work’s objectives:

> When in Paris during the Exhibition of 1900 I happened unexpectedly upon the public statue of George Washington when strolling about the streets one day, and somehow or other this random occurrence galvanized in me a definite desire to typify the buoyant on-march of optimistic humanitarian democracy in a musical composition in which a forward-striding host of comradely affectionate athletic humanity might be heard “chanting the great pride of man in himself,” the underlying urges to be heroic but not martial, exultant but not provocative, passionate but not dramatic, energetic but not fierce, athletic but not competitive.\(^3\)

These lofty aesthetic goals ensured the *Marching Song* would remain prominently featured in Grainger’s writings and letters throughout his life. Further, it would become the recipient of continuous efforts on his part to arrange performances, and was often singled out for inclusion in concerts of prominence, particularly during his 1926 and 1934-1935 Australian visits. Its significance is also reflected in its status as a work about which Grainger was particularly sensitive, especially in regards to its conflicted Australian reception, being foremost among the works he would later withhold from potential appearances with the

---

\(^1\) Although, as discussed in Chapter One, the choral material may also be incorporated into the wind band version. Unless otherwise stated in this dissertation, the band-only version is implied in its reference.


\(^3\) Grainger, *Marching Song of Democracy*, 1.
Australian Broadcasting Commission, citing that “there was no natural public response to it.”

Despite this record of prominence, in scholarly writing the *Marching Song* often plays second fiddle to his more overtly spectacular and bizarre works (*The Warriors, Free Music*) or to the styles and mediums for which he was better known, such as folk music settings. Similarly, the *Marching Song* now primarily appears as an afterthought for wind band “rarely played or recorded” in the wake of the iconic *Lincolnshire Posy* or the *Children’s March*. In this case, there appears to be something of a backfiring of Grainger’s elastic scoring concept, with the work being never fully embraced in any medium.

Another lesser-known form of the *Marching Song of Democracy* is actually its initial conception as an a cappella piece. Extant as two lengthy passages of sketches, they draw on a complex array of vocal forces, including four whistler, six boy soprano, four boy alto, one contraltino, three tenor, two baritone and three bass parts. Sketched at the outset of this compositional undertaking in 1901 and 1902, its existence was briefly hinted at by Grainger in the *Marching Song*’s programme note:

> My original plan was to write my “Marching Song of Democracy” for voices and whistlers only (no instruments), and have it performed by a chorus of men, women, and children singing and whistling to the rhythmic accompaniment of their tramping feet as they marched along in the open air; but a later realization of the need for instrumental colour inherent in the character of the music from the first ultimately led me to score it for the concert-hall.\(^6\)

Despite this paragraph, there has been almost no previous engagement by Grainger scholars in relation to this early state, with paraphrased references to its origins providing

---

\(^4\) Percy Grainger to William James, 28 September, 1951, National Archives of Australia.
no further information. Yet as the preliminary research for this dissertation into Grainger’s early compositions gained traction, it became clear that these initial sketches contained some of Grainger’s most complex and innovative polyphonic writing. At times they bear no resemblance to the finished product, making the latter appear relatively mild and overburdened with an ideology many contemporary critics found to be unconvincing. As a result, the Marching Song appeared to be unique, in that it suffered from a devolutionary process. Through the inclusion of orchestra, Grainger’s radical democratic aim of a homogeneous blend of voices was severely compromised, and the 1948 edition for wind band removed the remaining element that tied it to the natural instrument of humanity – the massed voices of the chorus. Coupled with the fact that it is an excellent example of a work for which “we are still highly reliant ... upon Grainger’s self-analyses,” it became evident that further research was warranted to investigate this oversight.

This thesis also serves as a partial response to an aspect in Grainger’s music identified by musicologist and Grainger authority Malcolm Gillies as “crying out for further investigation.” He singles out Grainger’s “cloying, annoying, but more-original-than-you-think part writing: sometimes truly inspired; sometimes even deliberately trashy (trashy because this voice-leading leads nowhere, or simply circles back to base).” Gillies is not alone in making such an observation. Another Grainger scholar Brian Wilson notes that Grainger’s “part writing proves always to be uniquely satisfying because of the constant voice shifting and meandering parts.” This sort of part-writing is best reflected in what

---

7 Malcolm Gillies, “Grainger: Fifty Years On.” (Keynote lecture presented at the “Let Us Sit in Wait No Longer”: Future Directions in Percy Grainger Scholarship, Performance and Interpretation symposium, University of Melbourne, 16 October, 2010).
8 Ibid.
9 Ibid.
10 Brian Wilson, “Orchestrational Archetypes in Percy Grainger’s Wind Band Music” (PhD diss., University of Arizona, 1992), 124,
Grainger would term as “democratic polyphony,” or his “Australian ideal of a many-voiced texture in which all, or most, of the tone strands ... enjoy an equality of prominence and importance.” Such writings cast aside conventional characteristics of distinct melody and bass lines and subservient inner voices in order to encourage a homogeneous, quasi-texturalist mass of sound. This is particularly effective in an a cappella medium where the voices are on an equal footing in terms of timbre and projection. Unsurprisingly, this was a medium frequently chosen by Grainger and initially intended for the *Marching Song*, creating in the sketches an impressive display of perhaps his most ambitious part-writing.

*Musical democracy*, both as a metaphorical concept and specifically in relation to Grainger’s music, has been frequently studied. Nathan Hesselink’s five *Principles of Equality* outlined in his article, “Taking Culture Seriously: Democratic Music and Its Transformative Potential in South Korea,” provides an excellent foundation for unifying the political and social concept with its musical representation. Two of these principles: “freedom of (personal) expression,” and the “tolerance or respect of difference,” relate particularly well to Grainger’s own ideas mentioned above, and point towards a pluralistic texture where the sheer number of competing voices prevents any singular voice from rising to dominance. The seemingly oppositional equivocation of nature with civilization finds resolution in this pluralist strain of democracy, wherein minorities may thrive “by making it difficult for any coherent majority to be formed” and thereby creating a dynamic struggle for equilibrium.

This idea unites the concepts of global equality and balance with localised inequality, akin to

---

12 ibid.
14 ibid., 83.
nature and attainable through a dense polyphonic texture. It is epitomized by another of Hesselink’s principles: “Individuality within collectivity.”

This of course has parallels to American democracy, as well as having links to the unfolding of Australia’s federation, with the former filtered through to Grainger via the poetry of Walt Whitman. As musicologist Sarah Collins outlines: “for Whitman, democracy was defined by a community of individuals engaged in self-rule. Hierarchical structures ... were to be replaced by brotherly bonds of ‘adhesive love,’ that ensured individual freedoms were contingent upon the freedom of the masses.” Grainger’s biographer John Bird points out that the young Grainger, introduced by fellow Frankfurt composer Cyril Scott to *Leaves of Grass*, would harbor the “desire to be Whitmanesque in letter as well as spirit” in the a cappella version of the *Marching Song*. This was embodied both visually and aurally through a community of individuals, united by their instrument, but polyphonically independent.

Additionally, the 1917 Schirmer edition of the *Marching Song* includes almost three pages of quotations from *Leaves of Grass* in its foreword, designed to provide “a sort of rough index to the emotional background of the work.” In his rough notes for this foreword, Grainger further outlines the qualities he hoped would be conveyed through this collage of Whitman quotations, placing them under the following categories:

- Democracy, Marching
- Heroic
- Liberty, Independence
- Cosmic, Stars, Progress
- Open Road, Athletic
- Culminating, Summing-up.

---

16 Hesselink, 81.
These qualities evoked through the prose and music are a realization of Grainger’s “desire to typify the buoyant on-march of optimistic humanitarian democracy … in which a forward-striding host of comradely affectionate athletic humanity might be heard ‘chanting the great pride of man in himself.’”\textsuperscript{21} At a more technical level, Alain Frogley’s observation of Whitman’s “startlingly fresh and fluid approach to poetic metre and diction, which includes a fascination with repetition, end-stopped lines, [and] organic construction,”\textsuperscript{22} could well be describing much of the \textit{Marching Song} sketches, with Grainger’s liberal use of mixed metre, ambiguous sense of beat, and spontaneous rambling construction.

Chronological context is also a significant factor. At the time of the \textit{Marching Song}’s composition, there was a “period of intense Australian nationalism, which encompassed a post-Federation sense of democracy.”\textsuperscript{23} Further, as Belinda Nemec observes, Grainger was unusual “in interpreting Australian democratic values as inseparable from Australian music.”\textsuperscript{24} These factors inform the work’s intrinsic connection to Australia through Grainger’s perceived “duty to restore to modern music the musical democracy (defined as ‘a chance for all to shine in a starry whole’) it had enjoyed in religious music from the 13\textsuperscript{th} century up to & including Bach.”\textsuperscript{25} It also goes some way towards explaining his sensitivity to its lukewarm Australian reception.

Grainger’s own writings from the time reflect these attitudes. In the notebook \textit{Methods of Teaching and Other Things},\textsuperscript{26} written around the same time as the sketches,

\begin{itemize}
\item[(\textsuperscript{21})]Grainger, \textit{Marching Song of Democracy}, 5.
\item[(\textsuperscript{23})]Belinda Jane Nemec, “The Grainger Museum in its Museological and Historical Contexts” (PhD diss., University of Melbourne, 2006), 157, http://hdl.handle.net/11343/39133
\item[(\textsuperscript{24})]Ibid., 158.
\item[(\textsuperscript{25})]Percy Grainger to Basil Cameron, 9 June, 1952, National Archives of Australia.
\item[(\textsuperscript{26})]Percy Grainger, “Methods of Teaching and Other Things,” (unpublished manuscript), Grainger Museum, University of Melbourne, 58.
\end{itemize}
Grainger wrote a section entitled “Marching Songs,” which indicates that he held particularly high hopes for this style of music, characterised as “Australian Marches for open-air singing to the tramping feet. Sort of national walking songs.” Nationalistic and democratic ideals are fully formed in this section, containing polyphonic implications, with independence of the voices highlighted as an essential quality. Grainger elaborates:

Notwithstanding harmonic oneness I want there to be a strong sensation of each voice [or set of voices in the case of momentary gathering into batches] shouting its own shout, rhythming on its own, banging in and leaving off just anywhere ... The old build of melody and its harmonic support must ... away, here all must be felt in line, line atop, lines abottom, line amiddle, lines of voices each alone, lines of voices in bodies; just a farflung whole to be guessed out of the weld-together of many free-swapping ... and equal-in-importance parts.

This description directly applies to the early sketches of the Marching Song of Democracy, which was ostensibly intended to be the first in a series of such works that never eventuated. Correspondingly, the sketches are marked by shifting masses of voices unaligned in phrasing and dynamics, merging, diverging, and entering the mix freely.

These aspects are discussed in more detail in later chapters, but suffice to say the unpublished nature of the sketches temporarily liberated Grainger from the obligation to create practical music, and thus the compositional processes of these sketches not only typify the democratic ideals inspired by Whitman and a sense of Australian identity to a greater extent than commonly realised, but also manage to transcend them.

The above description also points towards a unique way of analysing and understanding the Marching Song’s democratic part writing qualities, through Grainger’s

---

27 Ibid.
28 Ibid.
29 See Appendix.
use of texture. Texture is a notoriously elusive musical parameter to define. Theorists Bruce Benward and Marilyn Saker simply classify it as “the combination of a work’s melodic, rhythmic and harmonic aspects.” Yet the term also frequently appears in relation to other musical elements, including the range and density of music, orchestration, and timbre. In short, a vague notion of texture extends fluidly through most, if not all, musical elements and is broadly considered the product of their interaction. Grainger, however, provides a strikingly less ambiguous account of his own conception of texture. In a 1916 letter to his biographer D.C. Parker, he defined texture as “the weft of the [polyphonic] fabric” and “the actual distribution of notes in a chord, [and] the critical or unconscious choice of inversions [sic].” Bridging both the theoretical and the observational, Grainger’s suggested definition marginalises the notions of texture relating to harmony, timbre and orchestration, and favours intervallic relationships. It follows that this concept of texture, based on quantifiable intervallic tendencies, can therefore be measured and described. Gillies identifies “the relation between chordishness and many-voicedness,” as being contained within a matrix of the vertical and horizontal axes. In other words, he suggests that Grainger’s polyphonic methods can be traced through the interplay of these two dimensions: the horizontal path of the individual lines, and the vertical result of their interaction. A systematic and statistical approach that highlights this relationship enables the development of data representations extremely sensitive to changes in the fabric of composition.

---

With this in mind the questions arise: what, if any, were the consistent technical features of Grainger’s own musical texture and when did they first develop? His life-long quest to create music emulating the forms of nature is well documented – from his experiences as a young boy watching the waves of Albert Park Lake, to transcending the human performer element with the “free music” machines and experiments toward the end of his life. As Margaret Hee-Leng Tan defines, his ambition was to create “music of ideal curvilinear freedom and flexibility, lacking bar accents as well as tonal restriction” — music not restrained or affected by artificial systems including tonality, defined structural forms and repetition. In a loftier vein, Grainger elaborates the term further: “music in which all intervals, rhythms, harmonies and forms will be free, irregular, unlimited & non-conventional. Then only will the full soul of man find universal, untrammelled musical speech.” If one holds such liberated, unquantified polyphony as the manifestation of his textural ideals, to what extent did Grainger achieve this in his earliest works? Gillies asserts in his article on Grainger’s use of texture that, “it was not really until his Free Music No.1 of 1934 that Grainger challenged the dominant-tonic hierarchy in a way that was more than incidental.” When looking at Grainger’s published output, one would be inclined to agree with this statement. However, when looking at his incomplete and unrefined sketches of the Marching Song, there is cause for hesitation. It will be shown in this thesis that there is evidence of a youthful shift towards a similar polyphonic freedom – a texture as statistically similar to his “free music” as far as the Western notation system would stretch.

Research Aims

Five major research aims are present in different combinations throughout this dissertation. In the first part, the central objective is to provide a comprehensive history of the *Marching Song of Democracy*. For the remainder, it aims to mathematically and analytically argue that the sketches of the *Marching Song* are effectively proto-*Free Music* pieces, unique in Grainger’s conventionally notated output. Thirdly, in a broader sense, this part also measures how this complexity grew out of Grainger’s compositional development, and similarly measures the extent to which this may be observed in his later choral works. Finally, at times the dissertation also seeks to engage and position the discussion of Grainger’s music within the results of existing studies relating to other composers, contextualising his output in the wider scene of twentieth-century music.

The overarching thread of this dissertation is to correct the juxtaposition of the *Marching Song*’s valued position in the eyes of Grainger, with its seemingly unexceptional qualities. This is achieved through focusing on the earliest sketches of the *Marching Song* that were composed with punishingly impractical complexity, and often bear little resemblance to the published editions. This thread shows how these sketches marked the earliest incarnation of what may be termed “free music” as far as Western notation would allow, six years before the atonal String Quartet No.2 of Schoenberg, and decades before Grainger’s own formal experiments could be realised. Viewed in this light, the *Marching Song of Democracy*’s initial experiments transcend its own democratic qualities and set it on “the road to ‘free music.’”

The implications of this research are threefold. Firstly, it provides an understanding of Grainger’s attachment and designated importance to the finished work and also

---

demonstrates that the compromised nature of the published editions still may retain undercurrents of these principles. Most essentially, it provides evidence of a critical link between his most formally advanced work, his self-professed “only important contribution to music,” and his emergence as a mature composer out of Frankfurt. This last point may be taken even further — the free music concepts Percy Grainger had envisioned as a six-year-old boy at Albert Park Lake, inspired “by the movements and sounds of the water,” was something he attempted, and to a degree succeeded in, at a far earlier date than previously believed.

\[^{40}\] Ibid.
Literature Review

A wealth of sources available to Grainger scholars are held in the Grainger Museum, The University of Melbourne. It contains a significant amount of the primary material, original fragments, sketches and writings by Grainger used in this dissertation. Through the invaluable efforts of Grainger scholars Kay Dreyfus, Malcolm Gillies, Bruce Clunies Ross, David Pear and Mark Carroll, many letters and writings from and about Grainger have been collated and edited, and serve as the basis in developing a modern account of the history of the Marching Song. These primary sources have been supplemented with the biographical writings surrounding Grainger including those by John Bird, Thomas Slattery and Eileen Dorum. Although these are somewhat more generalised approaches to the topic, which view the Marching Song mainly in light of its major performances, they do provide a great deal of context and are commonly referenced sources throughout this dissertation. Curiously, these biographical writings are quite positively disposed towards the Marching Song of Democracy, proclaiming its contemporary success and value as a piece, at odds with numerous critical reviews of the time.

In a technical vein, very little writing has been dedicated to the Marching Song beyond Grainger’s own programme notes. The most substantial study of the Marching Song is the contribution by Joseph Kreines included in Thomas Lewis’s A Source Guide to the Music of Percy Grainger. It includes a formal analysis and detailed discussion of the wind band version, outlining the thematic material and structure of the work, drawn upon here when detangling the fragments and tracing the work’s development. The Source Guide also collates important articles and writings by Grainger on other works that are pertinent to this study. The other dedicated examination of the work occurs in Percy Grainger by Wilfrid Mellers in the Oxford Studies of Composers series. Mellers states that the piece is “simply
childish, with the vernal charm of its innocence but with no sturdier substance ... Percy’s naivety is here indeed kids’ stuff ... Grainger has not here created great or even very good music.\textsuperscript{41} Besides its subjectivity, the main problem here in relation to this study is Mellers’ assumption that the work was composed “during the summer of 1901”\textsuperscript{42} and subject to later revisions. As this study shows, the 1901 efforts were in the form of fragments and sketches, which often bore almost no resemblance to the published versions – a radically important factor in this analysis. As the piece didn’t begin resemble its final form until 1908 and beyond, the childish failings that Mellers criticises in this “youthful work” is more accurately the compromised product of a twenty-six year-old Grainger.

In terms of shorter articles, The New Percy Grainger Companion, edited by Penelope Thwaites, features occasional but limited commentary on the Marching Song in its Music for Wind Band and Grainger for Choirs chapters. However, it is more valuable from a contextual perspective, including information surrounding Grainger’s Frankfurt student years and a timeline of major life events. It also contains an extensive catalogue of works compiled by Barry Peter Ould that was used as the standard reference for composition details and dates.\textsuperscript{43} An important, although somewhat tangential source of inspiration is the writings of Malcolm Gillies, particularly in his 2001 article “‘A Musical Hyde Park Corner’: Grainger’s Use of Texture,”\textsuperscript{44} which prompted further investigation into Grainger’s distinctive compositional qualities, and the eschewing of more conventional forms of analysis when dealing with this repertoire.

The analytical component of this dissertation draws upon the work of a wide range of analysts and statisticians. The innovative theories of analysts Jan Beran and Dmitri

\textsuperscript{42} Ibid., 16.
\textsuperscript{43} Especially important given that most Grainger works were worked on and revised over lengthy periods.
Tymoczko have developed techniques that comment on the pitch class and intervallic relationships within a work, allowing for ready comparison between a selection of pieces, and encompassing radically different styles and mediums. Tymoczko’s ideas in turn rest on Allen Forte’s pitch class sets, which allow observations to be made in relation to the tonal/atonal divide upon which the Marching Song sketches skirt. David Huron’s fascinating empirical studies on J.S. Bach’s polyphony address aspects including tessitura and voice crossing, of particular relevance to Chapters Five and Six. Although his methods often require extensive modification to adapt to Grainger’s music, they still serve as an excellent fundamental model. One of the more ambiguous concepts to define – that of polyphonic density – draws on a blend of the respective approaches taken by Andrew Larson, Wallace Berry and E. Michael Harrington. The procedures of these analysts, and others derived by myself, were achieved and graphed using Microsoft Excel, graphing program Geogebra, and statistical computing software R.45

Dissertation Structure

This dissertation is structured into two broad sections, with the first focusing on the development, history and context of the Marching Song of Democracy, and the latter dedicated to intensive analytical processes. In response to the research questions, these processes serve to assess a wide range of works and determine how their compositional qualities compare to the unique nature of the Marching Song sketches. Both sections are united in their overall objective of firmly positioning the Marching Song of Democracy as an exceptionally important work in Grainger’s output.

45 Available from https://www.r-project.org.
Chapter One presents the evolution of the *Marching Song*, with particular emphasis on cataloguing the many fragments and sketches that contributed to its creation. The process highlights the unique and spontaneously composed nature of certain sketches, and presents a chronological account of the work from the embryonic stages of the thematic materials, through to its transformation into its published forms. As a contextual counterpart to this, Chapter Two discusses the *Marching Song* in terms of its performance history and critical reception. Additionally, it also attempts to reconcile these with Grainger’s own conflicted stance on the work, his hopes for what it would represent, and his reaction to its perceived failure.

Chapter Three is a precursor to the analysis. It outlines and justifies a corpus for comparison with the *Marching Song* sketches, noting the formative processes and preliminary decisions necessary to prepare them for analysis. The chapter also serves as a reference point, featuring the linear representations of all the works and upon which all subsequent analysis is derived.

The remaining six chapters form the analytical body of the work, and examine musical texture from perspectives that combine horizontal and vertical elements in different ways. The first three of these are linked in their investigation through their blending of both textural dimensions. Chapter Four focuses on the concept of density, defined as the number of tones within the extremes of any given sonority. This ever-present aspect allows insight into the result of the interplay between polyphonic voices, and draws conclusions about how their handling affects Grainger’s compositional process.

Similarly, Chapter Five examines these constituent voices over the course of the work, both individually and through their contribution to the studied works as a whole, by quantifying compass and tessitura for each voice. Tessitura is particularly useful in
demonstrating and measuring the substantial degree of overlap, which quickly became inevitable as Grainger placed increased numbers of independent vocal parts within the same overall register. Further, the dramatic implications of these findings, taken to extremes in the *Marching Song* sketches, prompts a re-examination of the principles at play in other, earlier studies.

Chapter Six deals with the common, if often averted, phenomenon of voice crossing. The extremes of density and tessitura overlap observed in the previous chapters result in voice crossings of such magnitude that the development of a universal system is required to grasp their complexity. Voice crossing, perhaps the most characteristic element of Grainger’s choral music, and exemplified in the *Marching Song* sketches, is a means of expressing clear democratic tendencies, while the extent of melodic contour freedom is reflected in its measurement. Using this technique, the individual voices resist subservience or unification, and contribute to a homogeneous mass of sound where each voice is equal and distinct.

The horizontal component of polyphony is the main focus of Chapter Seven, utilizing a wide variety of methods to identify patterns in the consecutive movements of the polyphony. This includes studying the pitch class circulation, paired pitch classes and paired intervals, with the aim of understanding the internal construction of the selected works. Chapter Eight similarly applies these processes to the vertical perspective, and further, the pitch-class circulation technique is transferred into trichord analysis, drawing on the set theory of Allen Forte. For both Chapter Seven and Chapter Eight, by viewing voice leading and sonorities in terms of their internal patterns, the degree of chromaticism in the *Marching Song* sketches and its positioning on the tonal/atonal spectrum can be established relative to a wide range of other works.
The final analytical chapter, Chapter Nine takes the vertical dimension to its extreme. Here, vertical structure repetition is surveyed, reflecting how often exact intervallic structures repeat in a given work, or a body of works. This puts the assumption that compositional tendencies are reflected in particular chord voicings to the test, and aims to determine if certain combinations are indicative of Grainger’s process, as well as to what extent they may be perceived in the *Marching Song* sketches.

Together, these chapters aim to deliver a multi-pronged approach, drawing on a wide variety of uncommon analytical methods in response to the unique qualities of Grainger’s untamed polyphony. It aims to shed light on the commonalities and differences between the two *Marching Song* sketches, and also how these compare to his later published works. Another major point of interest is where the sketches fall in terms of his compositional development, particularly when compared to the *Free Music* pieces produced in the twilight of his innovative career. Overall, this study re-evaluates the implications and achievements of the original *Marching Song of Democracy* sketches, with respect to its importance as an innovative style of composition that would take Grainger several decades to surpass.
Chapter 1
Development of the *Marching Song of Democracy*

Like many works in Grainger’s catalogue, the process for composing the *Marching Song of Democracy* resulted in multiple versions and frequent tinkering. Yet coming from a notoriously bold and unashamed composer, it is among a small number of pieces that steps away from its innovative ambitions.\(^1\) Given its central importance to this study, the scattered condition of the formative fragments and sketches make it essential to create a chronologically inclusive view for use in later discussion and analysis. Apart from the chapter’s reference and introductory value, the primary research aim here is to examine how the sketches emerge from the fragments and relate, or fail to relate, to the finished product. In doing so it, the distinct nature of the sketches is outlined, warranting further examination in this project.

The first part of this chapter will cover the themes and motifs of the *Marching Song*, drawing on and expanding the thematic analysis of the piece undertaken by American conductor and composer Joseph Kreines. To reflect earlier stages of the compositional process, the chapter then undertakes a close examination of the many scattered fragments created by Grainger at the outset. In the chapter’s latter half, a more chronological approach is taken, outlining the sketches, published editions and revisions to provide a comprehensive background to the work. Additionally, it explores the influence of Théodore Gérod, a Frankfurt

\(^1\) The other notable example of this is the aleatoric *Random Round*, which Grainger later notated as set versions for mixed ensemble and piano ensemble, undermining its initial semi-improvised concept.
singing teacher who provided Grainger with critical technical advice immediately before he embarked on the sketches. Gérold’s teaching appears directly responsible for many of the idiosyncratic elements and vocal limitations evident in the score which tangibly undermines the narrative of mentorship by Karl Klimsch\(^2\) that Grainger was eager to establish.

All these elements are necessary to shed light on how the *Marching Song* was developed and untangle the complicated relationship between sources and finished product that have been quite overlooked in the scholarship to date, with particular emphasis on the sketches. This is the companion of Chapter Two, which provides a more contextual look at the *Marching Song* in its collective totality, focusing on its reception and performance history. Together, these two parallel streams of study — analytical and contextual — illuminate the turbulent inner and external processes involved in the development of the *Marching Song*.

---

Abbreviations

For ease of discussion throughout this dissertation the Marching Song sketches were given the following abbreviations:

**MS1:** Refers to the first two pages of the Marching Song sketches.³

**MS1A:** The opening eight bars of MS1 composed in May, 1901.

**MS1B:** The remaining bars composed in September, 1902.

**MS2:** Refers to six pages of sketches completed in June, 1901.⁴

**MSP:** Refers specifically to the first 1917 published edition of the score,⁵ but with the understanding that it is representative of the completed score, and is effectively interchangeable with any subsequent arrangements or editions for analytical purposes. This is due to the fact that the published versions are only considered in a structural or thematic sense rather than in terms of orchestration.

**Musical Scraps:** A manuscript book containing rough fragments used in the Marching Song sketches.⁶

The above sources are referenced here in lieu of repetitive referencing for typeset examples throughout this chapter. All copyright material of Grainger’s sketches and fragments throughout this dissertation have been reproduced by kind permission of the Estate of Percy Aldridge Grainger.

---

⁴ Ibid., 6-11.
1.1 Review and Expansion of Joseph Kreines’ Analysis

The analysis of the Marching Song provided by Joseph Kreines\textsuperscript{7} presents a thorough structural and thematic guide to the piece. It divides the work into six roughly equal sections, each drawing on a different blend of thematic material. He highlights the main themes, but also subdivides them, arguing that they are fundamentally “unified by intervallic and motivic cells”\textsuperscript{8} that may be inverted, augmented or otherwise varied to form the basis of other themes. This analysis has been visually summarized in Figure 1.1 followed by an expanded discussion of the main features of the identified motifs and themes. For consistency, the labels Kreines devises for the various components are employed here, outlined below in Figures 1.2 and 1.3.

Figure 1.1 shows that some thematic material is common to both sections (Theme 3 for instance), and the close motivic relationship between Themes 2 and 4 provides some continuity between the two halves. It is worth noting that the piece can also be grouped into two broader sections “A” and “B”, each dominated by a set of themes, Themes 1-2 and Themes 3-5 respectively. As becomes evident later in this chapter, this reflects the chronological divide between the 1901/1908 sketches (Section B), and the later 1915 sketch composed in America (Section A except for the opening eight bars).


\textsuperscript{8} Ibid., 214.
Figure 1.1: Representation of the *Marching Song* Structural Analysis
It is not the aim here to fundamentally challenge Kreines’ structural analysis, but rather to review it to create a more global view of the work and set up the following discussion of the fragment and sketch history. As Kreines was dealing only with the final wind band score, considering additional thematic material from the earlier sources creates a broader understanding of the work’s construction and specifically how the thematic materials were connected to the sketches.

**Figure 1.2 List of Motifs in the *Marching Song of Democracy***

Kreines identifies a collection of motifs in his annotation of thematic material listed here in Figure 1.2, implying that they are intrinsically linked. While some of these motivic cells are convincingly distinctive in certain contexts, particularly the angular Motif E, others at times need to be more cautiously treated as to whether they are significant thematic material or merely incidental, for instance the perfect fourth interval (Motif X), or stepwise passages (Motif D). In this respect, Kreines’ analysis is not always convincing, with the descending perfect fourth intervals in Theme 4A (see Figure 1.3) cited as an example of this motif at work, alongside the more prominent ascending versions in Theme 1A and Theme 3. This issue

---

particularly came to the fore when searching for evidence of the motivic fragments within the unique MS1B, often leading to the conclusion that small-scale motivic resemblance was mostly incidental and often inevitable. As a result, the two-note motifs were ignored unless situated within a clearer thematic context.

**Motivic Characteristics**

The technical traits of the *Marching Song of Democracy* motifs as found throughout the fragments, sketches and MSP are as follows:

**Motif A)** An ascending or descending interval series of a consecutive second and third.

**Motif B)** Three pitches a step apart, often in escape tone format. This motif is quite a common figuration and thus hard to identify, unless accompanied by the dotted rhythm (as shown in Figure 1.3 A/2).

**Motif C)** Major/minor triad structure that ensures an interval of a fifth (i.e. only in root position).

**Motif D)** Ascending or descending stepwise motion of various lengths. This scale-like motion is only convincing as a motivic idea when either repeated (MSP, b.85-90) or as part of a more complete theme such as 1C.

**Motif E)** Perfect fifth (or diminished) and stepwise motion in the opposite direction. This motif is readily identifiable and the core of Themes 2/4 and 4A. It also may appear in an inverted form in the fragments and sketches.

**Motif F)** Ascending large leaps spanning a seventh.
Motif X) A perfect fourth. Again a distinctive motif in certain contexts when used to accent a strong beat, but less convincing in others, such as when Kreines claims it is a part of Theme 4A.\textsuperscript{10}

Motif Y) A descending minor sixth, when paired with Motif X it makes the core of Theme 3, otherwise it does not often figure in Kreines’ analysis.

\textsuperscript{10} Ibid.
Figure 1.3: List of Themes in the *Marching Song of Democracy*\textsuperscript{11}

Theme 1A Variants

Theme 1B

Theme 1C

Theme 2

Theme 3

Theme 4

Theme 4A

Theme 5A

Theme 5B

\textsuperscript{11} Ibid.
Thematic Characteristics

The themes also benefit from similarly detailed description due to their varied appearance throughout the source material. From the outset, Theme 1A is particularly difficult to define in terms of its intervals, rather it is characterized by a dotted crotchet and quaver rhythm followed by a stream of equal, onbeat rhythmic values. Sometimes elongated with a tie (Theme 1A/1), it is occasionally preceded by the distinctive perfect fourth opening (Motif X, Theme 1A/3). As an opening theme it has a determined, march-like quality and an overall contour that is usually angular, involving leaps and frequent changes in direction, often overlapped or combined with other themes. Theme 1B, however, is “a more lyric flowing melody,” also making use of the characteristic Motif X and dotted crotchet/quaver. It can also exist in an abridged form and is most identifiable through its stepwise arch contour. The final example in this collection of themes, Theme 1C, features a descending line based upon Motif D, and is often articulated with staccato accents, providing a strong marching feel. It also makes use of a dotted crotchet rhythm to inflect upwards.

Theme 2 is closely related to Theme 4 in that both commence with the distinctive Motif E, although Theme 2 is the more lyrical version, sharing the arching contours of Theme 1B. On the other hand, Theme 4 is a more straightforward and jovial alternative, being distinct from the other themes from its lack of dotted rhythmical figures, and its descending sequence. Theme 4A is an augmented version of Motif E without an upbeat, but also incorporating Motifs B and X in the consequent phrase. While it makes its first appearance in the first half of the work,

\footnote{Ibid., 214.}
Theme 3 is a broad fanfare-style theme mainly reserved for the coda.\textsuperscript{13} It is less directly related to the other thematic material, consisting of wider intervals and longer note values, while sharing the dotted rhythm on the downbeats present in Theme 1A. These characteristics are reworked into the less frequently used Theme 5/5A, albeit with a more chromatic language and narrower range.

**Expansion of Thematic and Motivic Material**

A survey of the sketches and fragments suggests that additional motifs are also significant for a global *Marching Song* analysis. This involves particularly emphasizing rhythmical features, as opposed to Kreines’ focus on intervallic motifs, as the above thematic models were not yet crystalized in the fragments and sketches. As such, a number of distinctive ideas stand out across two or more of these sources that are relevant to the discussion, and are outlined below.

**Ascending Triplet Motif**

The Ascending Triplet Motif, including both stepwise and leap variants, concludes the opening of MSP (b.8) and its parallel passage as the ending of MS1A (b.6). Its status as a notable motif is warranted partly from its later recurrence in augmented form triumphantly accompanying the “epic-style”\textsuperscript{14} Theme 3 in MSP (b.93-94). Most importantly though, it is also one of few clear links between MS1B and this opening occurrence of the published score, as an idea carried out prominently at numerous points throughout the sketch (such as b.22-23). The above instances are noted in Example 1.1.

\textsuperscript{13} Ibid., 215.
\textsuperscript{14} Ibid., 214.
Another short yet characteristic motif not factored into Kreines’ analysis, termed here the “Dotted Motif,” is a dotted rhythm with a repeated semiquaver followed by even, usually stepwise quavers. It is frequently used in the second half of the published score and most prominently appears at b.122 in the tenors (Ex. 1.2, b.121-123). This idea appears tied to Theme 4A\textsuperscript{15} often following the distinctive Motif E, and thus the motif at first appears to be a variant. However, the heightened importance of this motif as evidenced by its strong presence in its own right, from as early as b.113 and in an augmented form (Ex. 1.2, b.137-138).

\textbf{Example 1.2: Dotted Motif in MSP}

The Dotted Motif’s prominence is further enhanced through examination of the \textit{Marching Song} sketches. Its saturated use in MS2 suggests it was intended to be

\textsuperscript{15} The section heavily featuring Theme 4A mainly occupies b.117-131 in MSP.
used initially as a countermelody to Theme 4 rather than a Theme 4A variant.

Example 1.3 shows the motif’s first appearance in MS2 as Theme 4 is also introduced, with the rhythmic motif repeated two bars later in the sopranos and altos. While this section was included in MSP, the heavy reduction in polyphony\textsuperscript{16} meant that this figuration was ultimately omitted. Therefore, the Dotted Motif’s distinctive, repeated profile initially saw it running throughout the entirety of Section 4 alongside both Theme 4 and 4A as an independent idea. Its classification as a motif in its own right is important as it allows it to be traced in terms of its development as a fragment in the following section.

\textbf{Example 1.3: Dotted Motif in MS2}

\begin{center}
\includegraphics[width=\textwidth]{figure1.3.png}
\end{center}

\textbf{Fifths Theme}

Finally, one other highly pertinent theme does not directly appear at all in the published version of the \textit{Marching Song}. Labelled here as the “Fifths Theme” due to its opening interval alternations,\textsuperscript{17} it occurs as the foundation for the ultimately disregarded first half of the MS2, also being a frequent presence in the fragments.

\textsuperscript{16} The texture uses offbeat accompanying chords.

\textsuperscript{17} This interval is a fourth in some variants.
Somewhat shanty-like in character, it is also squarer than most other themes with an onbeat crotchet/quaver scheme. This quality persists even when undergoing development through different modes and key signatures, a steadiness that Grainger often found necessary to counter with offbeat marching in MS2 (see Appendix). However, as Example 1.4 shows, the rhythms and phrasing are remarkably similar to Theme 4A, shown in the fragment analysis to be its likely derivative, even though the contours differ considerably.

**Example 1.4: “Fifths Theme”**

These three additional motivic and thematic ideas, while not included in Kreines’ analysis of the finished product, are nevertheless vital for a more thorough view of the work, particularly when considering the fragments and sketches.

**MS1B Material**

Despite being a relatively brief extract of music, MS1B has its own set of distinctive motifs that are also worth considering to the extent that they may be
regarded as thematic variants, or important MS1B themes in their own right. In terms of the former, b.11-12 of MS1B (Ex. 1.5A) features the distinctive motif replicating the centre of Theme 2 and appears in MSP from bars 39-40 using the same pitches and similar stepwise motion for its preceding notes. As discussed later in this chapter, Theme 2 does not appear to have been developed until 1915 and so the connection may be either coincidental or this passage may have served as partial inspiration. Similarly, in bar 17 of MS1B (Ex. 1.5B), a very prominent line doubled in all the tenor and contraltino parts declaims an inverted form of the x/y-motif core of Theme 3. Other potential relationships occur in less convincing contexts. For instance, the continual descending chromatic motion following steeper ascensions (Ex. 1.5C) mean motifs A, C, D and X are commonplace; however, they are not used as part of any prominent material resembling the wider fragments or published score.

Example 1.5: MS1B Motifs
In terms of MS1B’s unique character, a more idiosyncratic jagged descending line frequently appears, as shown in Example 1.5 D/E, vaguely resembling the sequences of Theme 4. Similarly, the texture is saturated in angular, lopsided arches bearing a similar contour to its crucial Motif E (Ex 1.5 F/G/H). Overall, while these moments in MS1B do appear to correlate to the motifs in MSP, they do not generally capture the same aural impressions. The similarities tend towards the less distinctive and more incidental motifs, suggestive of contour rather than explicit thematic material. Additionally, motifs that are more striking are usually lost within the dense polyphony and homogenous nature of the many-voiced choral medium. Therefore, upon revisiting the work in 1902 and creating MS1B, there is limited evidence that Grainger made any meaningful effort to draw on the motifs and thematic material already extant MS1A, MS2 or the fragments. Instead, a more impressionistic approach is suggested, where the general contours in a linear capacity were preserving but little else.

1.2 Fragment Taxonomy

This chapter now turns its discussion to the earliest extant material of the Marching Song: the fragments. This consists of notated fragments scattered throughout one of Grainger’s Youthful tone-work journals: a manuscript book entitled Musical Scraps, Percy Grainger. Only in two places, encompassing five pages of the Musical Scraps, does Grainger clearly indicate that the material belongs

---

19 Musical Scraps served as a source for a number of significant early works apart from the Marching Song, including Hill-Music (Hill Songs), Dedication, Charging Irishry, The Hunt is Up (The Jungle Book), The Song of Solomon, and The Ballad of the Bolivar.
to the *Marching Song*, as identified in Dreyfus’s listing of identified fragments.\(^{20}\)

However, when considering the unlabeled fragments, this figure doubles with the

*Marching Song* included on ten pages, making it the most frequent presence in the

sketchbook. The fragments generally only deal with a single thematic idea at a time,

either in the abstract or worked into extended passages. They are often sketched in

an abstract shorthand form, either in the form of linear themes or as a reduction on

the grand stave, only occasionally specifying intended voices or transpositions. Even

if unlabeled, almost all of the relevant material is meticulously dated by Grainger.

Together with the sketches, these fragments are critically distinct from the other

*Marching Song* material contained in the Grainger Museum archives through their

adherence to the original a cappella conception.

Identifying the nature of the material present in *Musical Scraps* serves two

purposes. Firstly, it provides an understanding of the compositional process

including how, and to what extent, the various themes were developed; the kinds of

experimentation undertaken in these passages show the types of challenges

Grainger was concerned with. Tying the fragments to the themes, and eventual

published versions, demonstrates an interesting time-lapse of Grainger’s

compositional process. Secondly, it reveals the heavy focus on the thematic

development of MS2 material implying the impromptu and undisciplined approach

to MS1.

\(^{20}\) Kay Dreyfus, *Percy Grainger Music Collection Part One: Music by Percy Aldridge Grainger*,
The *Marching Song* fragments fit into four categories.

1) Those that relate to both MSP and MS2. A very common type of fragment and usually pertaining to Theme 4/4A.

2) Fragments that are thematically related only to MS2. Although not included in the orchestrated drafts, it is a frequent type of fragment that usually involves the Fifths Theme, or atypical variants of Theme 4/4A.

3) Those that are thematically related only to MSP. These are rare occurrences given that these fragments mostly pertain to MS2, which in turn overlaps with MSP. Additional material for the remainder was only worked out in 1908/1915, when it had become an orchestrated concept.

4) Miscellaneous or unidentified fragments. Those that either do not apply directly to any version (disregarded or experimental) or show very rare references or attempts to continue with MS1A.

For brevity in this discussion a selective survey is undertaken of the *Marching Song* fragments. The full catalogue of fragments is represented in Table 1.1, with the pages and dates on which the various themes, motifs and other materials occur.
<table>
<thead>
<tr>
<th>Page No.</th>
<th>Date</th>
<th>Theme 4</th>
<th>Theme 4A</th>
<th>Motif D</th>
<th>Motif E</th>
<th>Dotted Motif</th>
<th>Fifths Theme</th>
<th>Conjoint Motion</th>
<th>MS1A Material</th>
<th>MS1B Material</th>
<th>Unidentified</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>11-15 March 1901</td>
<td>X (3)</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>13 March 1901</td>
<td></td>
<td></td>
<td></td>
<td>X (2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>May 1901</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>3-4 May 1901</td>
<td>X (6)*</td>
<td>X</td>
<td></td>
<td>X (6)*</td>
<td>X (2)</td>
<td>X (9)</td>
<td></td>
<td></td>
<td></td>
<td>X (2)</td>
</tr>
<tr>
<td>16</td>
<td>3-4 May 1901</td>
<td></td>
<td>X (6)</td>
<td></td>
<td></td>
<td>X (2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X (2)</td>
</tr>
<tr>
<td>18</td>
<td>27 April-3 May 1901</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X (2)</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>19</td>
<td>8 May 1901</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>24</td>
<td>7 July 1901</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>25</td>
<td>7 July 1901, August 1902</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>26</td>
<td>May-August 1, 1901</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

* = Same material
The most prominent observation that can be made is that Theme 4 and Theme 4A were the earliest and most heavily focused of materials, appearing on at least eight of the ten pages combined. For instance, the first *Marching Song* fragment dated 11 March, 1901, consists of three Theme 4 variants as shown in Example 1.6. They show Grainger experimenting with various rhythmical displacements and mixed meter of the same material. The third option in 4/4 with an upbeat was eventually selected; however, the harmonic accompaniment was also ultimately offset by a quaver. The fragments are perhaps the most contrapuntally conservative version of the setting with the theme always above the accompaniment, rather than threaded through the inner voices as it was eventually realised. Although all three are harmonized similarly as a series of sevenths around the circle of fifths, a slight change in the second option commences the theme with a secondary half-diminished chord, a feature that was included in both the MS2 and MSP. Also, both the fragments and MS2 contain an added sixth in the final chord, while this is omitted in the published score.

**Example 1.6: *Musical Scraps, p.3***

Given that both Themes 4 and 4A were worked out thoroughly in March 1901, subsequent fragments show a period of experimentation. Later in May, Grainger focused on polyphonic reworking of the opening Motif E from these...
themes, involving two-part canons (Ex. 1.7A) or combined with counter-melodic ideas (Ex 1.7B).

**Example 1.7: Musical Scraps, p.15**

At this time, other more distinct materials can be seen to develop, including the Dotted Motif, and the Fifths Theme. In terms of the Dotted Motif, observing the fragments confirms that it was indeed a motif developed independently of the other themes. It can be seen evolving into its final form, initially featuring the repetition (Ex. 1.8A/B), and later with the distinctive dotted quaver/semiquaver rhythm. (Ex. 1.9).

**Example 1.8: Musical Scraps, p.15**

**Example 1.9: Musical Scraps, p.18**

Conversely, Grainger developed the Fifths Theme following the development of Theme 4A, firstly with numerous unharmonized, linear passages on Page 12 (Ex. 1.10A/B). Here, the notes of Motif E were reordered from [1-5-4-1] to [1-4-1-5] and
maintaining a very similar rhythmic profile as noted earlier. On Page 18, the fully fledged theme evolves into its [1-5-1-5] form.

Example 1.10: *Musical Scraps*, p.12

Example 1.11: *Musical Scraps*, p.18

This relationship sheds light on the structure of MS2, which commences with a section featuring the Fifths Theme and later opens into a prototype Section 4, associated with Theme 4/4A. Therefore, Grainger was attempting to create a sense of thematic coherence and development that would be reflected in his need to create an earlier occurring theme based on similar material. This suggests that contrary to Kreines’ observation that Theme 4/4A was a “varied and expanded” strain of Theme 2, the reverse is more likely to be true. Of Kreines’ thematic materials, only the Section 4 themes appear in the fragments, with no suggestion of Theme 2. This is unsurprising, as Section 2, which strongly presents Theme 2, was only developed in the 1915 sketches. Instead, it is much more likely that Theme 2 was a late variant of Theme 4.

---

21 An ultimately abandoned alternate Section 3.
22 Kreines, 213.
23 Although Kreines suggests the theme was a component of the coda, composed in 1908, he is ostensibly referring to the later, upward-sweeping similarities between the two, which seems more a
A third general stage of fragment creation can be observed after Grainger had established Theme 4/4A as the foundation for the *Marching Song* and explored the above derivatives. This involved work on other unrelated passages that would ultimately share similarities with the sketches and published score. Of particular note are passages of extended Motif D development, and triads in conjunct motion. The latter Grainger describes as “a form of harmonic melodiousness”\(^{24}\) where chords move in parallel. Although these examples usually were not directly translated into the finished version, their qualities do suggest that in later years Grainger returned to the fragment material in his orchestral sketches.

While the scale-like Motif D is inherently indistinctive, its use as an extended ascending or descending pattern in the fragments serves more convincingly as a prototype for Theme 1C. As shown in Example 1.12, the motif in this context features the same long outwards pitch expansion, unrelenting crotchet rhythms and motion in thirds that would be later found in MSP (Ex. 1.13). This particular fragment was unlabeled and originates among the earliest sketches in March 1901. While the resemblance is not exact and harmonically distinct, the “hum” indication for vocal forces and similar chromatic marching character make it a likely candidate for being a *Marching Song* fragment. This fragment therefore appears to be a rare instance that would be developed in the later *Marching Song* sketches, and does not have an immediate parallel with MS2. While no thematic material using Motif D appears in the fragments, it was nevertheless an important motif composed alongside the more frequent Motif E.

---

\(^{24}\) Percy Grainger, “Hill Song No.1,” 173.
Triads or more complex chords in conjunct motion are another idiosyncratic feature often encountered in Grainger’s music, and he writes in the *Hill Song* program note that “one of the earliest instances is in ‘Eastern Intermezzo’ ... composed around 1898.”\(^{25}\) It was therefore established as a compositional technique before the 1901 work commenced on the *Marching Song*, and it can be seen as an important feature of the work, most notably in conjunction with motif D as noted by Kreines\(^ {26}\) (Ex. 1.14). Again, while not featured in MS2 or Section 4 of MSP, this was nevertheless anticipated in the fragments (Ex. 1.15), suggesting this passage was a precursor to Theme 1-C.

\(^{25}\) Ibid.

\(^{26}\) Kreines, 213.
Having created MS2 by 10 June, 1901, later fragments, especially those composed after moving to London, show Grainger more notably concerned with concluding and continuing MS1A. At its earliest stage, one fragment (Ex. 1.16A) labeled as “Perhaps a bit of style of vocal march” and dated 1 May 1901 (the same date provided in MS1A), is an abridged form of the final cadence of this section (Ex. 1.16B).
On July 7, another fragment appears, preceded by the note “Marching – S. Perhaps to follow idea of May 1.” It ostensibly refers to the previous fragment and the two are conjoined in Example 1.17. Although it is devoid of any later utilized material, this and several other similar passages show repeated attempts by Grainger to create MS1B, each proving unsatisfactory.

**Example 1.17: Musical Scraps, p.18/26**

![Example 1.17](image)

Seemingly frustrated with furthering MS1A, Grainger then put aside the work, informing Balfour Gardiner in a letter on 21 July, 1901 that he had “finished the Marching-song as far as I am intend[ing] to go with it just now.” However, upon his return in August/September 1902, he jotted down one additional fragment before commencing with MS1B. This series of four descending chromatic chords (Ex. 1.18A) appears to have been incorporated into MS1B (Ex. 1.18B) featuring the same highly chromatic material, ambiguous/inconsistent use of accidentals and tied first notes. This is the sole instance of a deliberately planned fragment for MS1B.

---

27 Percy Grainger to Balfour Gardiner, 21 July, 1901 in Farthest North of Humanness, ed. Kay Dreyfus, (London: Macmillan Press, 1985), 2. Additionally, there is one small 4A variant that appears to have been composed on 1 August, 1901.
Example 1.18: *Musical Scraps*, p.18/26

Given that no other pre-existing material was used in this section, it makes a radical departure from the carefully crafted and interrelated themes that would mark the rest of the sketches, and a possible contributing factor to Grainger’s eventual disregard of it. More importantly, it also suggests that it was composed spontaneously and freely, leading to the remarkable qualities observed in this dissertation’s later analysis.

Before closing this overview, it is also worth mentioning the other pages of *Musical Scraps* that do not contain *Marching Song* material. While p.22 is entirely dedicated to *Charging Irishry* sketches, it nevertheless shows many of the same compositional features that would characterize the *Marching Song* and also display the influence of Théodore Géronde, discussed later in this chapter. Grainger writes that “perhaps with accomp[animent] chords higher in Boy’s V[oices] - The Basses then accomp[any] themselves in the deep Bbs,”\(^{28}\) reflecting the same possibilities of vocal type organization that Grainger was exploring. Dated June 1901, the same time Grainger was working on the *Marching Song*, it prominently features extensive choral parts involving effects such as open and closed mouths, and slow glissandi, which also appear in the *Marching Song* sketches.

---

Similar statements are made throughout the score in more abstract ‘exercises’, such as on page 27 where Grainger gives “the important part to the Bar[itones] not always to the upper voice” (May 4, 1901). This shows that while many of the earlier fragments displayed the melodic content above a lower accompaniment, it was evidently notated with the understanding that these fragments were reductive formats that would, in practice, be shown to have a much greater degree of polyphonic weft. Consistent with Grainger’s practice, themes of the Marching Song are more typically threaded through texture in both sketch and published form. An additional two pages in the Musical Scraps addresses such part-writing concerns Grainger had when composing this material (discussed later in this chapter) and link to the Methods of Teaching and Other Things notebook created concurrently. All these sources point to a pervasive style of choral composition occupying Grainger at this point, unfortunately almost none of which developed intact from its original state to publication.

Examining the fragments provided significant insight into Grainger’s compositional process for the Marching Song of Democracy, most prominently how the Theme 4/4A was the central point from which much subsequent material was developed, both within the fragments with the creation of the Fifths Theme and, ultimately, in the scheme of the entire sketches, with the 1915 creation of the derivative Theme 2. While most of the MS2/MSP Section 4 material is accounted for in the fragments, moments of the other Marching Song sections are anticipated, including chords in conjunct motion and Motif D in particular. While there is no
evidence of a rough draft of MS1A, in Musical Scraps Grainger frequently tries to
develop it further, but it would not be until the 1915 advent of Theme 1B that he
would find a solution. MS1B, in contrast to the other sketches, is therefore unique in
its near total lack of planning, appearing substantially less theme-based except from
the perspective of approximate contour resemblances.

1.3 Sketch Material

The sketch material’s listing in the Percy Grainger Music Collection Part One is
problematic. Interspersed between sketches for Charging Irishry and a five cello
arrangement of Wagner’s Wach Auf from the Meistersinger, the Marching Song
manuscript consists of two main stretches of music. In the Percy Grainger Music
Collection catalogue, they are divided into two “versions,” yet this label is
misleading as both sketches contain material that was directly incorporated into the
finished work. Although they have no thematic material directly in common,
comparison to the final score shows that rather than being alternate versions, they
are merely intended as different sections of the score; the first section containing
the eventual opening, and the second becoming what Kreines’ analysis designates
Section 4. Furthermore, the description of Version A as consisting of one page of
music, “dated May 1, 1901 and September 12 and 16, 1902,” significantly
overlooks an additional torn page of connecting material dated September 19,
1902. A re-evaluation of these sketches is therefore warranted.

---

29 It is unknown if there is an extant source of additional fragments elsewhere. However, given its
brevity, it is quite possible MS1A was composed without reference to fragment material.
30 Dreyfus, Percy Grainger Music Collection Part One, 318.
31 Ibid., 318.
MS1 Material

Close examination of the two *Marching Song* sketches reveals some additional pertinent details and, despite the close dates of composition, confirms that they are two very different compositions in many respects. MS1 consists of twenty-three highly asymmetrical bars across the two separated pages. It is primarily distinct from MS2 due to its lack of whistlers and explicit stamping-feet notation, despite allusions to both in the first page’s title and performance directions. It is initially scored for a force of two boy soprano lines, boy alto, baritone, and three tenor and bass parts each; however, on the additional page, one of the tenor parts is relabeled as a “contralto.” This is ostensibly intended to mean a contraltino, a high tenor voice type, which is then explicitly called for in the second *Marching Song* sketch and, as it occupies a similar register, the previous high tenor line suggests that Grainger simply found the new title was a more apt description of the eventuating tessitura.

Mixed meter is another key distinction between the two sections, with the MS1 containing changes in almost every bar. Further, these shifts are notably coupled with an ambiguous sense of downbeat (Ex. 1.19), caused by the constant stream of quavers and continually overlapping, independent phrases of the polyphony. Finally, the extremely chromatic nature of the music itself, analyzed in-depth later in this dissertation, is highlighted through the absence of key signatures, unlike its MS2 counterpart.
Example 1.19: Mixed Meter and Ambiguous Downbeats in MS1

Although MS1 represents a continuous stream of music, it is necessary to view it as two connected subsections: the neatly written opening from b.1-8 (MS1A) and the less polished, shorthanded and correction-prone main body from b.8 to b. 23 (MS1B). MS1A features the opening Theme 1A, and is distinctive in its own right due to the high degree of similarity between it and the eventual published opening, with very little alteration in material beyond orchestration. As mentioned above, this short opening section was composed alongside, or slightly before, the bulk of the fragments, and is dated May 1, 1901.

MS1B, however, represents a marked departure from this style in many respects, and becomes vitally important to this study due to its remarkably complex polyphony based on democratic principles that approaches the qualities of the much later Free Music pieces. Unlike the other material, this sketch was notated between the 12-19 September, 1902, placing it significantly later than the bulk of the other material. This is a date never acknowledged by Grainger in his published score, but well before his official resumption of the sketch material in 1908. There is, however,
written evidence that he did in fact return to thinking about the *Marching Song* in the interim within a round letter Grainger composed “to Kith and Friends.”

Around 1902 or 1903 when I was mulling over my first sketches for the *Marching Song of Democracy*. I asked Cyril and Balfour if they would climb a rise of knoll a few 100 feet away & sing the theme that starts at bar 105 of the finished work. They kindly did so & it sounded so wild, fresh & pure to hear the ‘open-fifths’ ringing out between the trees (somewhat magic-ed by the slight far-off-ness)\(^3\)

While this is referring to Theme 4 as notated in the second section of the sketches, the 1902 date is consistent with Grainger’s return to the work around this time of continued “mulling”, leading to the creation of MS1B. While the other sketches in this manuscript are cleanly-notated good drafts, this section may be better described as an experimental ramble on Grainger’s part, ultimately bearing no substantial resemblance to any later version. Instead it shows the hallmarks of a more spontaneous compositional process, with the scribbled out errors, notational shorthand and cramped scoring (Ex. 1.20) similar to the MS2 draft score discussed below.

---

Example 1.20: MS1B Draft Score

MS2 Material

MS2 comprises sixty bars, and is readily identifiable by its heavy and continual usage of both the idiosyncratic whistling and stamping feet. Unlike MS1, it was first drafted out in another miscellaneous sketchbook Klavier Methodik Freitag, which contains the rough draft for the MS2 sketches. Although this source is technically undated, a secondary ink sketch after the Marching Song

34 Grainger, “Marching Song,” 1.
35 “What more lovely quality of sound is there than whistling? To me it seems the most intense of all sounds, the most coldly passionate. ... The whistling range added to that of voices ... forms a very extensive non-instrumental compass.” Grainger, Grainger on Music, 19-20.
37 Although this source was primarily used for essays and other sketches notated in pencil, Grainger flipped the book and wrote an early draft of MS2 in ink from the back and wherever free space appeared.
material is dated June 23, 1901, correlating to the likely timeline that it was composed before Grainger’s good draft version of 10 June, 1901.

Given its background in fragment and draft stages, it is unsurprising then to find MS2 more coherent and ordered, though still at times just as intricate and complex as MS1. While it contains some unusual instances of mixed meter, there are usually musical reasons behind them. Specifically, the curious example of metric displacement in b.8 appears to be intended to enable the marchers to effectively change between offbeat and onbeat footfalls (Ex. 1.20).

Example 1.21: MS2 b.6-10

Similarly a rather extreme \( \frac{19}{4} \) metre (Ex. 1.22) is employed as the texture expands to become increasingly polyphonic. However, it was found in the rough draft\(^\text{38}\) to have been conceived originally as a more mundane collection of \( \frac{4}{4} / \frac{2}{4} / \frac{4}{4} / \frac{4}{4} \). It appears to have been decided against in order to avoid misleadingly imposing an arbitrary metric scheme as the voices begin to diverge.

Apart from this anomaly, MS2 remains largely in common time with the occasional 6/4 or 3/4 metre, and with a predictable structural logic behind these choices. MS2 is clearly intended as a mid-piece section rather than as an alternate version in its own right. It commences and concludes abruptly, is the recipient of the vast majority of material developed in the fragments outlined later in this chapter, and its slightly later composition date on 10 June, 1901 places it after the already established MS1A. As noted above, it is significant in that almost half of MS2 became the eventual Section 4, with b.35-60 of the sketch corresponding closely to b.105 - 131 when orchestrated and simplified. As such, the sketch provides an alternate first half, developing original themes from fragments that were ultimately disregarded, but simultaneously preparing for the emergence of Theme 4, much in the same way as Theme 2 does in the finished product.

Perhaps the most unusual and what might be considered democratic aspect of MS2 is the division of voices and their elaborate inconsistency. Grainger
constantly merges and divides sections showing an impressive and ever-changing array of ensemble configurations. Numerous emergent soloists, a “few tenors,” half-strength baritones and whistlers redistributed into one, two, three and four parts are just some of the instances that demand constant readjustment of the forces. This disrupts the notion of a polyphony made up of single-identity threads, an issue that becomes essential to address in Chapter Six which focuses on voice crossings. In a hypothetical performance of the work conceived in this way, singers have no clear concept of a ‘part’ to adhere to, often merging with neighbouring sections and constantly re-configuring internal voice type divisions, creating twenty-three distinct vocal lines in total, and many more options for their distribution among singers. Despite this, the overall polyphonic density created is similar to the relatively consistent MS1, with around six distinct tones sounding at any given time as discussed in Chapter Four. The tenor/contralto discrepancy of the first section is dwarfed by those in the second, and Grainger’s cavalier attitude to the distribution process is most evident in the many shifts between pages, which is done without comment. There is inconsistency even within the page, particularly regarding solo voices, that are sometimes clearly redirected to rejoin specific lines, while at other times are left to decide for themselves when to recommencing singing. For instance, in Example 1.23, where the few tenors are instructed to rejoin the “remaining tenors when rested.”
One final aspect is important to mention, an interest in microtones and gliding lines that would become the most idiosyncratic element of the *Free Music* pieces. Evidence of this interest unites both MS1 and MS2, the fragments in *Musical Scraps* as well as the extensive manifesto *Methods of Teaching and Other Things*. In both sketch instances Grainger indicates that singers are to “slide all the time,” most prominently shown in Example 1.24 over a long descending line. Even more frequently, he notes that “the sign for this mode of performance (sl=slide) occurs with great frequency in my scores,” a statement that holds true for the *Marching Song* sketches (Ex. 1.25). Grainger thus capitalizes on his observation that the voice “has all possibilities of pitch, is not bound to certain notes only ... but can (at least theoretically) make twenty & more divisions to the half-tone, & can slide at will from note to note.” Additionally, the frequent glissandos, often expressly marked as slow glissandos throughout the fragments achieve much the same effect of undefined pitch.

---

Concurrently, Grainger can be seen to be experimenting with alternate means of notation, including options for chromatic staves (similar to those used in Chapter Five), and most significantly a prototype of the graphic notation enabling any degree of pitch to be achieved, listed as Point 37 in *Methods of Teaching* (Ex. 1.26) jotted down around the same time as MS1B. Further, under the “Marching Songs” section of the same source he notes:

The still-retained 5 stemlines will be useful in offering a background upon which to contrast a foreign mode of scale-making or pitch diving against that of the West. Some contrivance ... for taking down sounds straight into this notation will need to be found out.

While this was not really achieved until the *Free Music* pieces, the presented evidence nevertheless links the *Marching Song of Democracy* conception with the desire to break down the quantitative tyranny of conventional notation.

---

41 Grainger, “Marching Song,” 3.
42 Grainger, *Methods of Teaching and Other Things*, 32.
Examination of the *Marching Song* a cappella sketch material is critical for the later analytical chapters, and shows a great deal of difference in the composition processes and characters of the two sections. While both contain fascinating examples of complex polyphony, the refined MS2 supports a much larger array of voices through a more conventional rhythmic and thematic structure. It is richer in overt innovations than the MS1, boasting the marching and whistling elements as well as an intricate and ever-changing combination of vocal forces. However, MS1 more than compensates for its lack of these features, with the roughly drawn MS1B spontaneously weaving thematically-liberated strands of untamed polyphony. This stretch of music will be of utmost importance in the later chapters, which examine the extent to which Grainger was able to realize musical democracy and free music qualities.

---

44 Ibid., 25.
1.4 The Impact of Théodore Gérold

In May 1901, Percy Grainger approached Théodore Gérold (1866-1956), an influential musicologist, theologian, bass, and ‘teacher of singing’\textsuperscript{45} based in Frankfurt at the time, for lessons pertaining to choral composition. Overshadowed by the esteemed value of Karl Klimsch’s mentorship, as well as the pointed animosity with his formal composition teacher Ivan Knorr, this germane yet overlooked formative encounter occurred just before the critical junction of Grainger’s transition between Frankfurt and London, and the accompanying symbolic shift from student to professional life.

This encounter is of particular significance to this study, as many of the possibilities discussed in these lessons ostensibly relate specifically to Grainger’s ambitions for the *Marching Song of Democracy* in its original form. What he gleaned from the lessons with Gérold was written down in London on 29 May 1901, as Points 48 and 49 in *Methods of Teachings And Other Things*\textsuperscript{46} and so, in a wider sense, this provides rare explicit evidence of advice having a direct compositional impact on the young Grainger. Similarly, in *Musical Scraps* many hypothetical fragments of the *Marching Song* were worked out alongside an alternative series of these points (re-numbered as Points 46-51), written in the form of questions and answers. These were marked “With Gerold,”\textsuperscript{47} linking the two sources and the issues contained therein with the challenges he was facing when writing expansively for choir. The aim of this section is to understand the questions Grainger was seeking assistance

\textsuperscript{46} Percy Grainger, “Methods of Teaching and Other Things,” 10-16.
with, as well as the extent of the guidance he received in his sketches for the 

*Marching Song of Democracy.*

While much of Gérold’s lasting musicological influence stemmed from his later years at the University of Strasbourg, in his earlier professional life, he settled in Frankfurt in 1890\(^{48}\) to study with the renowned baritone Julius Stockhausen at his Stockhausen'sche Gesangschule, eventually becoming established as a singing teacher in his own right.\(^{49}\) Described as a scholar “with unusually wide interests,”\(^{50}\) his expansive output, from Schubert to the art of French singing in the 17\(^{th}\) century,\(^{51}\) would eventually also include the singing treatise *Kleine Sänger-fibel*, highlighting his authority on vocal technique. Gérold was present in Frankfurt for the entire duration of Grainger’s schooling, and it is unsurprising after his departure from Knorr, and subsequent increased interest in choral music, that the young Grainger would seek this kind of expertise, either of his own accord or encouraged by Klimsch. It is also unsurprising that there would be a potential weakness in the area of composition technique in Klimsch’s mentorship, not being based upon an “institutional German musical education.”\(^{52}\)

Yet with Grainger’s life-long interest in choral composition to the point of self-description as “more a choral composer than anything else”\(^{53}\) as well as the


\(^{49}\) “Herr Theodor Gerold, teacher of singing in Frankfort, [sic] ... was associated for many years with Stockhausen in his teaching work.” Albert Schweitzer, *J.S. Bach*, 408.

\(^{50}\) Hiley and Gribenski, “Gérold, Théodore.”

\(^{51}\) Ibid.


tangible fruits of the tuition discussed later in this chapter, it is curious that aside
from these two references Gérold is absent in Grainger’s typically extensive
documentation, drawing neither praise or disparagement. Given that the training he
received was of demonstrably great practical use at a time when he was composing
his most ambitious work for choir (albeit unsuccessfully), the highly technical and
hypothetical leaning of these lessons, effectively amounting to a list of facts, dos and
don’ts, may have had reduced importance in Grainger’s eyes compared to those
with an aesthetic focus. It is also worth noting that at the time of their encounter,
the 34-year-old Gérold was not yet a particularly well-established figure, it would be
a further two decades before his more important publications would begin to
emerge. Finally, while the exact number of lessons taken is unknown, evidence
suggests they occurred only during May 1901,\textsuperscript{54} therefore limiting any long-term
aesthetic development with Gérold. Regardless of Gérold’s absence in the Grainger
literature, it is still remarkably interesting to observe practical teachings at play
during the most experimental compositional attempt of Grainger’s youth.

Evidence suggests that five major outputs in Grainger’s choral writing stem
directly from the encounter with Gérold, and four of these are readily evident in the
\textit{Marching Song} sketches. The remaining output, relating to pronunciation
idiosyncrasies, does not yet apply here as syllabic content was excluded from the a
cappella sketches, and thus falls outside of this project’s scope. Regardless, the other
outputs deal with vocal compass, tessitura characteristics and vocal qualities, choral
balance and the relationships between voices. These are clearly reflected in
Grainger’s treatment of the choir, in some cases explicitly. As outlined below, the

\textsuperscript{54} Grainger, “Methods of Teaching and Other Things,” 12.
strong extent to which Grainger drew on these ideas implies they were the fundamental principles on which the more ambitious and liberated polyphonic elements would grow.

1) Compass

Considering the overwhelming entanglement of polyphonic lines and highly active melodic character of each thread in the *Marching Song* weft, the limits of vocal range (or compass) often serve as the only real demarcation between voice types. The first section of Point 49 in *Methods of Teaching* is an expansive list of the vocal types, including the less conventional boy soprano, alto and contraltino types used in the *Marching Song*. It is followed by a list of pitches defining each voice’s compass and various tessitura characteristics. Figure 1.4 illustrates the compass data outlined in *Methods of Teaching* for each relevant voice and compares this to the combined limits of MS1 and MS2. In this figure, falsetto is indicated by diamond noteheads and the range capabilities of similar voice types were fused together – for instance, the slightly different extremes of Tenor 1 and Tenor 2, as Grainger’s texture constantly merges and subdivides these voices in the sketches.

Figure 1.4: Compass comparison: *Methods of Teaching* (Described range) and MS1/MS2 (Sketch Range)
It is clear that the sketch ranges adhere strongly to those recommended by Gérold. Curiously, almost every part exceeds these set ranges by exactly one semitone at one or both extremes, although this is statistically a rare occurrence in the score. Considering the large number of voices involved in the sketches, this level of adherence indicates a deliberate desire on Grainger’s part to utilize the full range potential of each voice, while still attempting to respect the limitations imparted by Gérold. To achieve this would require continuous mindfulness from a horizontal perspective to ensure that all the vocal lines remained within their recommended compass.

2) Tessitura Categorization and Vocal Qualities

Another important idiosyncrasy that connects the lessons with the sketches is the section in the *Method of Teaching* pertaining to tessitura characteristics. Even when outlining ranges, Grainger delineates between four registers outlined in Point 48: Mittel, Brust, Kopf stimme (middle, chest and head voice) and Falsetto. For each choir section, the optimal and weaker “stimmen” are identified, providing subdivisions of the overall range. For instance, the boy soprano’s middle voice is labeled as “weak sometimes not at all,”\(^55\) while the chest and head voices are listed as “good” and “strong” respectively, encouraging its use up to the high E6.\(^56\) Tessitura is more closely examined in Chapter Five, however this is not the only aspect concerned here. The qualities that could be extracted from a vocalist were also important considerations imparted to Grainger. From the *Methods of Teaching*,

---

55 Grainger, “Methods of Teaching and Other Things,” 12.
56 Written as an E5 in Grainger’s terminology, with middle C being C3. All pitches in this study are described using the conventional terminology of middle C being C4.
“nasal” vocal qualities are stated to be ideally employed with higher pitches and open mouths in contrast to “throaty” qualities more suited to the lower pitch and closed positions. It can be seen from Grainger’s application in the Marching Song sketches that these have been interpreted as guidelines for timbre, with directions indicating the use of these vocal characteristics appearing frequently in MS2. As shown in Example 1.26, Grainger includes five directions exploring various permutations of open and closed mouth positions with nasal and throaty qualities. The first boy alto entry in particular, from Bar 5, is to be “very throaty” in its performance, which coincides with the lowest writing in the sketches for this part, reaching an F#3. This indicates a direct application of the advice “low down sounds best throaty,” yet some of the more accompaniment baritone and bass writing at this point is instructed to be “closed mouth” and similarly “not nasal” despite being generally higher in pitch than the preceding bars.

Example 1.26: MS2, b.1-11.59

58 Ibid.
Additionally, the ambitiously high registers listed in the lower men’s voices are accompanied by a strong interest in falsetto, epitomized with the musing and example (Ex. 1.27) in *Methods of Teaching*: “It would be possible to cultivate extremely high fals[etto] in low bass so that the following would be possible.”

Example 1.27: Bass Falsetto (*Methods of Teaching and Other Things*)

Grainger shows a practical deployment of this concept in the sketches where he specifies such employment in the falsetto register in the baritone part at as shown in Example 1.28.

Example 1.28: MS2, b.45.

3) Choral Balance

The remaining two relevant outputs discussed with Géroid move beyond purely technical considerations and more directly affect the *Marching Song’s*

---

60 Grainger, “Methods of Teaching and Other Things,” 14.
61 Ibid., 12.
democratic concepts of vocal independence and equality. Firstly, democratic elements surface in relation to the balance of ensemble. Grainger writes: “There are no notes of any voice stronger than any of any other voice[ice] in balanced distribution,” providing two examples (large and small) of how this may be aided by a balanced choir make-up. Summarized in Table 1.2, the large choir option bears a strong resemblance to the total combination employed in the sketches, although the actual forces required vary from page to page. Generally, these distributions appear to favour heavier bass and soprano sections; however, the actual inner lines are generally more numerous, both in number of singers and total number of parts.

Furthermore, the interchangeability of women and boy ensembles is made explicit here, providing some insight as to the absence of the former in the Marching Song and highlighting the fact that according to Gérold, their boy counterparts have similar overall ranges. While the actual numbers are not explicitly stated in the Marching Song sketches, Table 1.3 shows a similar adaptation of this pattern, with a large number and similar variety of inner voice parts. As is later discussed in Chapter Five and Chapter Six, the inevitable overlap resulting from such minor range differences of neighbouring parts encourages a texturalist approach. The homogenous use of the human voice and extensive voice crossing that will be observed in the sketches is enabled through Gérold’s many-voiced conception of the choir.

---

63 Grainger, “Methods of Teaching and Other Things,” 14.
64 Ibid., 12.
Table 1.2: ‘Balanced’ Large Choir Divisions\textsuperscript{65}

<table>
<thead>
<tr>
<th>Large Choir</th>
<th>Total No. of Parts/Singers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Men</strong></td>
<td></td>
</tr>
<tr>
<td>8 Deep Basses</td>
<td>2/16</td>
</tr>
<tr>
<td>8 Baritones</td>
<td>4/26</td>
</tr>
<tr>
<td>6 Tenors</td>
<td></td>
</tr>
<tr>
<td>6 Tenors</td>
<td></td>
</tr>
<tr>
<td>6 Contraltini</td>
<td></td>
</tr>
<tr>
<td><strong>Women</strong></td>
<td></td>
</tr>
<tr>
<td>8 Altos</td>
<td>2/16</td>
</tr>
<tr>
<td>8 Mezzo</td>
<td>3/24</td>
</tr>
<tr>
<td>8 Soprano</td>
<td></td>
</tr>
<tr>
<td>8 Soprano</td>
<td></td>
</tr>
<tr>
<td><strong>Boy</strong></td>
<td></td>
</tr>
<tr>
<td>10 Altos</td>
<td>2/20</td>
</tr>
<tr>
<td>10 Soprano</td>
<td>3/30</td>
</tr>
<tr>
<td>10 Soprano</td>
<td></td>
</tr>
</tbody>
</table>

Table 1.3: Choir Divisions in the *Marching Song of Democracy*

<table>
<thead>
<tr>
<th>Marching Song (Maximum Vocal Forces - excluding whistlers)</th>
<th>Total No. of Parts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Men</strong></td>
<td></td>
</tr>
<tr>
<td>3 Bass</td>
<td>3</td>
</tr>
<tr>
<td>2 Baritone       3 Tenors        1 Contralto</td>
<td>6</td>
</tr>
<tr>
<td><strong>Boy</strong></td>
<td></td>
</tr>
<tr>
<td>3 Alto          1 Alto Solo</td>
<td>4</td>
</tr>
<tr>
<td>3 Soprano       3 Soprano Solo</td>
<td>6</td>
</tr>
</tbody>
</table>

4) Relation of Voices

While many of Gérold’s teachings discussed so far amount to technical and timbral considerations rather than aesthetic ones, the final germane aspect is perhaps the most in line with Grainger’s free music ambitions. It takes the form of a series of statements regarding the relationship of voices, and appears as a paraphrase of the questions worked through “with Gerold” as the alternate Points 46-51 in the *Musical Scraps*.\textsuperscript{66} Under the heading ‘Relation of Voices’ Grainger notes the basic precept: “a high v[oice] (or voices) can go lower than accomp[anying] lower

\textsuperscript{65} Ibid., 14.
\textsuperscript{66} Grainger, “Musical Scraps,” 28-29.
voices and still sound melodic.”⁶⁷ This is then systematically explored under various scenarios, such as with solo voice against choir, and expresses reservations with regard to the inverse approach (a low voice falling beneath higher voices), which he notes “will not sound melodic if not much stronger.”⁶⁸ Multiple examples to illustrate Grainger’s questions are included in the *Musical Scraps* (Example 1.29) from which Grainger copies his own example into the *Methods of Teaching*. The main point of interest is that Gérold encouraged Grainger in his systematic approach to interweaving melodic lines through more accompanying textures within a homogenous choral texture, a foreshadow of the complicated weft of Grainger’s musical fabric that would later develop as a result.

**Example 1.29: Examples from *Musical Scraps* p.28**

![Example 1.29](image)

The lessons with Gérold strongly correlate with Grainger’s detailed technical knowledge of the abilities and attributes of the chorus and would appear to have had a significant impact on his choral composition. This applied both in the general sense, and in the more particular sense of addressing the polyphonic challenges he had faced with his *Marching Song* ambitions. In regards to the latter, Gérold’s advice provided a solid foundation of absolutes and strengths for each voice type against

---

⁶⁷ Grainger, “Methods of Teaching and Other Things,” 15.
⁶⁸ Ibid., 14.
which Grainger envisioned an untamed polyphonic web. Further, through his association with Gérold, the potential for polyphonic entanglement was established, with large, many-voiced choirs and melodic content distributed through all voices being coupled with the persistent concern for balance and accompaniment support. This objective is highly synchronous with Klimsch’s own advice: “if you have no theme or melody in your head, don’t compose at all ... Just the pith of music, all the time.”

1.5 Later Sketches and Publication History

All *Marching Song* sketches created after 1902 show the fundamental change from an a cappella work, to work involving instrumentation. During his second Australian tour with Ada Crossley in 1908, and despite the six-year absence, Grainger continued work on the sketches that he left abruptly in MS2. This “rough idea of beginning of new sketch” was “to follow upon 2nd Frankfort bit” and commenced while on the train from Adelaide to Stawell on December 13, 1908. Although not stated outright, Grainger hints at a new orchestration from the second page of this sketch with annotations in the score such as “men or brass?” indicating a fundamental divergence from chorus-only origin. This sketch comprises the final two sections of the work, featuring Themes 5 and 3 respectively. The main body of the sketch, entitled *Sketch for End of Marching Song*, is not as polished a draft as MS2 in that it contains numerous mistakes, alternate suggestions and revisions. Most

---

70 Percy Grainger, “Marching Song Sketch,” MG15/4-5:2, Grainger Museum, University of Melbourne, 7.
71 Ibid., 1.
72 Ibid., 2. See Example 1.28.
significantly, there is also a noticeable shift for the first time towards a vertically-orientated texture rather than complex polyphony of the 1901/02 sketches as shown in Example 1.30.

Example 1.30: *Marching Song Sketch*, b. 33-39

As an aside, given the state of composition prior to 1908, it is worth questioning at this point the *Marching Song*’s inclusion as one of the chorus works Dreyfus lists as being “performed at a ‘jamboree’ … on 3 July 1907.” The extremely incomplete state of the *Marching Song*, and its status as a very difficult a cappella version, makes Grainger’s enthusiastically positive report of the “2 (fairly short) rehearsals” unlikely. As Table 1.2 below suggests, given the ambiguity surrounding the official title of the *Marching Song*, the work in question was most probably the unrelated and relatively conventional *Marching Tune*, which also featured chorus and had been completed in 1905.

The final piece of the work would again be delayed until 1915, by which time Grainger had settled in New York. This sketch commences with a piano reduction of

---

73 Grainger, “Marching Song Sketch,” 2.
75 Percy Grainger to Karen Holten, 5 July, 1907 in *Farthest North of Humanness*, 117.
MS1A in red ink and continues with freshly composed material in place of MS2. Like the 1908 draft, the grand stave reduction form is generally used and the draft contains many pencil annotations and self-corrections. However, apart from a few unclear bars, it contains at least the embryonic form of all the Part A material (Sections 1-3) up to Section 4, at which point what Grainger refers to as the “oldest part of Marching Tune begins.” This refers and links to MS2 starting from Theme 4’s appearance at bar 35. As will be discussed later, given that this music was only composed in 1915 and contains Themes 1B, 1C, 2 and 3, it is unsurprising that these are mostly absent, even as preliminary ideas, from the fragments. After this time, these sketches were orchestrated, revised and prepared until the publication by G. Schirmer in 1917 and, although subject to later arrangements and corrected editions, were effectively complete from a compositional perspective. Therefore, the Marching Song was completed in an unusual cyclic fashion, as a work that was started in the middle, concluded, and then wrapped around and ‘begun’ until it linked up to its first codified material. This had interesting consequences on its structure and thematic material, with Theme 3, the basis of the coda, only briefly allowed to emerge in the central section and Theme 2 technically a development of Theme 4.

Similarly, by observing these various stages of development, it is evident that the Marching Song’s conceptual evolution, from its origins to published form, was incremental. Although designating material for orchestral instruments, the 1908

---

76 Percy Grainger, “A Song of Democracy,” MG15/4-5:4-6, Grainger Museum, University of Melbourne.
77 Ibid., 7. This is evidence that Grainger used the two titles (Marching Song/Tune) somewhat interchangeably.
coda sketch retains both whistlers and stamping feet.\textsuperscript{78} Later still, the 1915 draft omits these more unique features, but includes the question: “Can it be given out of doors, to the rhythm of trampling feet?”\textsuperscript{79} This transition is partially explained by the published program note stating “a realization of the need for instrumental color ... led me to score it for concert hall,”\textsuperscript{80} and reflects Grainger’s justification for an orchestral presence. Yet it does not shed light on the subsequent and gradual removal of the aforementioned idiosyncratic and colouristic features of the original. Perhaps questions of balance, such as the blending of whistling with brass and percussion, and the lack of marching space (or the immobility of the string section) in the concert hall, made such practical demands unmet. More importantly, the program note does not provide any direct explanation for the more abrupt shift from extreme many-voiced polyphony to a reduced, thematic-orientated texture that seems considerably simplified by comparison.\textsuperscript{81}

It was in this first Schirmer edition that the \textit{Marching Song} would receive its first performance in October, 1917. Yet its orchestration was not yet quite satisfactory to Grainger, who had the luxury of submitting it to “a variety of experiments”\textsuperscript{82} in a series of orchestral workshops during his visit to Frankfurt in April 1923. As a result, the \textit{Marching Song} underwent an additional 1925 publication by Universal Edition in Europe at the behest of Frederick Delius.\textsuperscript{83} Similarly, around this time in the US it was reprinted by Schirmer as a corrected edition. This revised version, which does not appear to affect the choral parts, would be drawn upon for

\begin{itemize}
\item \textsuperscript{78} Grainger, “Marching Song Sketch,” 4.
\item \textsuperscript{79} Grainger, “A Song of Democracy,” 1.
\item \textsuperscript{80} Grainger, \textit{Marching Song of Democracy}, 3.
\item \textsuperscript{81} Although still polyphonic in its own right.
\item \textsuperscript{82} Bird, 182.
\end{itemize}
subsequent performances. Typical of Grainger’s music, it would be reconceived as a reduced version in 1930, scored for “mixed chorus and a chamber ensemble of brass, strings, two pianos, organ (or harmonium), and optional expanded percussion.” Although this version was retitled *Australian Marching Song*, as became evident in research for the next chapter, in performances of this version Grainger retained the original *Marching Song* title, essentially treating it as an elastically scored alternative when resources were limited.

Finally, the *Marching Song* was more dramatically re-orchestrated into a work for wind band in 1948. Kreines misattributes the reason for its creation as “a result of some successful performances of several of his works by the Goldman Band,” however, as discussed in the next chapter, this is more likely at the request of Wayne University Band conductor, Graham Overgard. In creating this alternate orchestration, Grainger omits voices entirely, causing him to remark that it sounded “more tone-clash-ful on the band.” Ultimately, this proved to be the more successful and frequently performed version, if for no other reason than the reduction in logistical requirements, needing only a single ensemble for which Grainger had already developed an established and lasting reputation. Yet the concept of vocal involvement was not entirely removed, with the band edition noting that although “quite complete in itself ... it may be used together with the original version for mixed chorus, organ, and orchestra in various combinations.”

85 Additionally, performances with flexible use of pianos and ensemble size occasionally occurred, presumably for logistical or practical reasons.
86 Kreines, 214.
87 Bird, 225.
This has led, in recent years, to further arrangements such as by Colonel Michael J. Colburn, who restores the vocal parts to the wind band edition.

It is evident that the *Marching Song of Democracy* was by no means exempt from the constant tinkering and elastic scoring common to his ensemble works. These adjustments were designed to make the work more accessible, performable, and tempt smaller or more specialized forces to approach it. As the following chapter suggests, the later editions of the *Marching Song* did have a greater measure of success, but for the most part would still remain hopelessly tied to Grainger’s own appearances as a conductor during his lifetime. Today, there are four performable versions of the *Marching Song of Democracy*: chorus with orchestra; wind band; and chorus with wind band; and chorus and mixed ensemble.

**Conclusions**

It is evident from the initial fragments of the work that, apart from the opening few bars, Grainger started the piece halfway through, working fragments into thematic material that would become the foundation for Section 4 and developing motifs that would inspire later themes. His subsequent compositional process was cyclical, working from the middle to the end in 1908, and then again from the beginning to the middle. This creates a unique perspective on the evolution of themes from a chronological standpoint, challenging Kreines’ assumption of the derivative relationship in order of appearance. Most significantly, it was observed that the MS1B sketches of 1902 were mostly unrelated to the fragments and established MS2, and appear to be a remarkably free, democratic experiment in dense polyphonic writing.
Despite being a relatively unknown figure in the long, eclectic list of Grainger’s associates, Théodore Gérold appears as unique in that his influence upon the young Grainger manifested in remarkably tangible ways, allowing a clear connection to be drawn between his teachings and their translation into music. It also disrupts the narrative of the amateur Klimsch as Grainger’s “only composition teacher” and prompts the question: Could there be other significant compositional qualities in his music affected by overlooked associations? While following such a path is outside the scope of this dissertation, the involvement of Gérold nevertheless begins to distance the young Grainger from his established image as one who stoically resented the authority of more recognised musicians – most notoriously Knorr and Busoni – in favour of his Frankfurt peers and amateur outsiders. Grainger’s close contemporary Cyril Scott would later laud Grainger’s technique as being able to draw “effects from a chorus which have remained latent heretofore, and the choral writers that will come after his day will owe him a debt in the field of technique.” Such ability in turn therefore owes a degree of recognition to Théodore Gérold’s assistance at this critical stage of Grainger’s development.

From this global survey of the Marching Song, it is shown that it followed a gradual decrease in its ambition, with Grainger making a continual stream of concessions throughout his life. The inclusion of orchestra prevented the full prominence and aural effect of a homogeneous mass of independent human voices, which was a critical element of its unaccompanied chorus form and deprived the work of its key innovations such as marching and whistling. The reduction of

---

89 Ibid., 177.
90 Foreman, “Grainger and His Contemporaries,” 176.
orchestration and eventual reworking into a piece for wind band did have the benefit of encouraging additional performances, but also brought further adverse aesthetic effects, most prominently in encouraging its perception today as a work for wind band. This discussion of the complicated development history of the *Marching Song* will serve as a reference for the coming chapters and provides initial justification for further analytical exploration. Table 1.4 summarizes the various stages of the *Marching Song* that this chapter has outlined.

### Table 1.4: Chronological Development of the *Marching Song of Democracy*

<table>
<thead>
<tr>
<th>Year</th>
<th>Title</th>
<th>Reference</th>
<th>Orchestration</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>1901</td>
<td>Fragments in &quot;Musical Scraps&quot;</td>
<td>MGS/102-6-10</td>
<td>Chorus</td>
<td></td>
</tr>
<tr>
<td>1901</td>
<td>MS2 (Rough Copy) in &quot;Klavier Methodik Freitag 9-10&quot;</td>
<td>MGS/104-2</td>
<td>Chorus</td>
<td></td>
</tr>
<tr>
<td>1901-02</td>
<td>Marching-Song</td>
<td>MGS15/4-5-1</td>
<td>Chorus</td>
<td>For men's &amp; boy's voices &amp; whistles</td>
</tr>
<tr>
<td>1901</td>
<td>MS1A</td>
<td>MGS15/4-5-1</td>
<td>Chorus</td>
<td></td>
</tr>
<tr>
<td>1901</td>
<td>MS2</td>
<td>MGS15/4-5-1</td>
<td>Chorus</td>
<td></td>
</tr>
<tr>
<td>1902</td>
<td>MS18 (Rough Copy)</td>
<td>MGS15/4-5-1</td>
<td>Chorus</td>
<td></td>
</tr>
<tr>
<td>1908</td>
<td>Marching Song Sketch/Sketch for end of Marching Song</td>
<td>MGS15/4-5-2-3,11</td>
<td>Chorus and Orchestra</td>
<td>Draft Score Yule Gift to Mother, 1908</td>
</tr>
<tr>
<td>1915</td>
<td>A Song of Democracy</td>
<td>MGS15/4-5-4-6</td>
<td>Chorus and Orchestra</td>
<td>Draft Score Birthday Gift to Mother 1915</td>
</tr>
<tr>
<td>1916-17</td>
<td>Marching Song of Democracy</td>
<td>MGS1/51-3</td>
<td>Chorus and Orchestra, Organ</td>
<td>Published by Schirmer Edition</td>
</tr>
<tr>
<td>1925</td>
<td>Marching Song of Democracy</td>
<td>MGS1/51-2</td>
<td>Chorus and Orchestra, Organ</td>
<td>Published by Universal Edition</td>
</tr>
<tr>
<td>1924-25</td>
<td>Marching Song of Democracy (Corrected U.S. Edition)</td>
<td>MGS1/51-4</td>
<td>Chorus and Orchestra, Organ</td>
<td>Published by Schirmer Edition</td>
</tr>
<tr>
<td>1930</td>
<td>Australian Marching Song *</td>
<td>N/A</td>
<td>Chorus, Chamber Ensemble, Piano, Optional Percussion</td>
<td>Unpublished (since published by Bardic Edition)</td>
</tr>
<tr>
<td>1948</td>
<td>Marching Song of Democracy</td>
<td>MGS3/57-2</td>
<td>Wind Band</td>
<td>Published by Schirmer Edition</td>
</tr>
</tbody>
</table>
Chapter 2

The Marching Song of Democracy: Performance, Reception and Attitudes

In a 1955 questionnaire, Grainger places the Marching Song of Democracy first in a list of his nine most important works,¹ also including the Free Music and both Hill-Songs,² but pointedly omitting many other major original works, including The Warriors, the In a Nutshell suite and The Power of Rome and the Christian Heart. Grainger’s later responses in this questionnaire justify the inclusion of the Marching Song when he states:

My musical creed (to which I do not consistently live up) is ‘musical democracy,’ my definition of ‘democracy’ being “a chance for all to shine in a starry whole.” I would like each voice, at all times throughout my music to enjoy equal importance & prominence.³

Yet in addition to the complicated development outlined in the previous chapter, the Marching Song endured a conflicted public life. Major divides occur between critics; Grainger’s efforts for its promotion and withdrawal; and particularly the treatment of the work in Australia compared to the United States of America.

Understanding the esteemed position of the Marching Song in Grainger’s catalogue, in light of its historical reality is the task of this chapter. This divides into three main areas: 1) discussing the performance history, 2) critical reactions, and 3) Grainger’s own attitudes towards the work. The aim is to show that the apparent conflicts are underscored by Grainger’s high aspirations for the Marching Song’s resonance with the Australian public, and his sensitivity at its perceived failure to do so. These actions and reactions are collated

¹ Grainger, Grainger on Music, 374.
² Significantly, all but three of the works on this list were commenced in 1901 or before.
³ Grainger, Grainger on Music, 375.
to elucidate the overall position of the work, and the chapter concludes with reflections on its present status.

2.1 Performances

This section commences with a comprehensive list of known *Marching Song* performances during Grainger’s lifetime. Additionally, it contains references to suggested or planned performances in as much detail as practicable to provide a more accurate depiction of Grainger’s advocacy of the *Marching Song* than its actual performance history suggests. Instances highlighted in bold denote realised performances. Aspects of note include the event or festival in which the work was featured (if applicable), the orchestras and choirs involved, the conductor (usually Grainger), and the orchestration used, if evident or applicable. The details were sourced from an extensive survey of advertisements and reviews in contemporary newspapers, as well as Grainger’s diaries, writings, collected programs and bibliographic materials. Apart from the Grainger Museum and the National Archives of Australia, major databases consulted for this purpose included *Trove*, *The British Newspaper Archive*, *Newspaper Archive*, and the National Library of New Zealand. Following the list of performances, a current discography catalogue lists the commercially available recordings, highlighting similar features. The objective, in this instance, is to highlight the limited number of recent recordings and the strong tendency for these to involve wind band orchestration.

---

5 https://www.britishnewspaperarchive.co.uk.
List of Performances and Planned/Suggested Performances of the *Marching Song of Democracy* during Grainger's Lifetime

<table>
<thead>
<tr>
<th>Performance</th>
<th>Date</th>
<th>Choir</th>
<th>Orchestra</th>
<th>Conductor</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: Worcester Music Festival, Massachusetts</td>
<td>1 October, 1917</td>
<td>Philharmonic Choral Society</td>
<td>Festival Orchestra</td>
<td>Dr Arthur Mees</td>
<td>Chorus, Orchestra and Organ</td>
</tr>
<tr>
<td>2: Evidence of Planned Performance</td>
<td>Early December, 1917</td>
<td>Chicago Philharmonic Choral Society</td>
<td>N/A</td>
<td>N/A</td>
<td>Chorus, Orchestra and Organ</td>
</tr>
<tr>
<td>3: Bridgeport, Connecticut</td>
<td>28 April, 1924</td>
<td>Bridgeport Oratorio Society</td>
<td>Players of the New York Philharmonic</td>
<td>Percy Grainger (Frank Kasschau co-conducting the program)</td>
<td>Chorus, Orchestra and Organ</td>
</tr>
<tr>
<td>4: Carnegie Hall, New York</td>
<td>30 April, 1926</td>
<td>Bridgeport Oratorio Society</td>
<td>Players of the New York Philharmonic</td>
<td>Percy Grainger (Frank Kasschau co-conducting the program)</td>
<td>Chorus, Orchestra and Organ</td>
</tr>
<tr>
<td>5: Evidence of suggested performances</td>
<td>1924-25</td>
<td>Detroit, Minneapolis, St Louis and New York State Symphony Orchestras</td>
<td>N/A</td>
<td>N/A</td>
<td>Chorus, Orchestra and Organ</td>
</tr>
<tr>
<td>6: Philharmonic Auditorium, Los Angeles</td>
<td>30 April, 1926</td>
<td>Los Angeles Oratorio Society</td>
<td>Unknown – possibly recruited players</td>
<td>Percy Grainger</td>
<td>Chorus, Orchestra and Organ</td>
</tr>
<tr>
<td>7: Exhibition Building, Adelaide</td>
<td>16/18 September, 1926</td>
<td>Adelaide Bach Society/Adelaide Glee Club</td>
<td>South Australian Orchestra</td>
<td>Percy Grainger</td>
<td>Chorus, Orchestra and Organ</td>
</tr>
<tr>
<td>8: Melbourne Auditorium, Melbourne</td>
<td>30 October, 1926</td>
<td>Choral Association of Victoria</td>
<td>Melbourne University Symphony Orchestra</td>
<td>Percy Grainger</td>
<td>Chorus, Orchestra and Organ</td>
</tr>
</tbody>
</table>

---

8 *Oakland Tribune*, 11 November, 1917.
9 “He is to play many of his own works, one of the chief being his Marching Song of Democracy.” “Australian Genius, Percy Grainger Leaves: Americans to hear him,” *News*, 23 August, 1924. No evidence could be found for any sort of choral involvement or correlating sources, suggesting a journalistic error, or wishful thinking on Grainger’s part.
10 These appear to have mainly been concerto engagements, including the Grieg A minor concerto and Saint-Saens’ G minor Concerto, although in Detroit Grainger did conduct ‘Shepherds Hey” and “Colonial Song.” *Detroit Free Press*, November 16, 1924.
11 “They were to have given the Marching Song of Democracy, I believe. But, so I heard, the work was too much like hard work for the time at their disposal. I believe the rehearsals will be long and long remembered by every one who was there. Having gone through the score – I don’t wonder. Part, if I remember, had to be whistled and hummed by men, women and boys. Or am I wrong? Was it that war song with a dance of careless warriors – ah, now, what was the name?” *Magpie’s Chatter*, *Observer*, 10 August, 1929. Given that the demanding *The Warriors* managed to feature on the program, this was likely a choral issue.
12 “The choir [was] formed from our best local societies” “Grainger Festival,” *The Age*, 1 November, 1926.
9: Sydney Advertised Performance\textsuperscript{13} (Abandoned)\textsuperscript{15}
Date: 1926
Choir: Royal Philharmonic Society
Orchestra: Sydney Conservatorium Orchestra
Conductor: Percy Grainger (likely)
Format: Chorus, Orchestra and Organ

10: Hill Auditorium, Ann Arbor, Michigan.
35\textsuperscript{th} Annual May Festival
Date: 18 May, 1928
Choir: The University Choral Union, High School Chorus and Michigan Glee Club
Orchestra: Chicago Symphony Orchestra
Conductor: Percy Grainger
Format: Chorus, Orchestra and Organ

11: Philharmonic Auditorium, Los Angeles
Date: 5 November, 1930
Choir: Smallman a cappella Choir
Orchestra: N/A (Assembled musicians)
Conductor: John Smallman
Format: Chorus of 36 singers, small orchestra, pianos and organ\textsuperscript{15}

12: Albert Hall London
Advertised Performance
Date: November 1930
Choir: Philharmonic Choir
Orchestra: London Symphony Orchestra
Conductor: Percy Grainger
Format: Chorus, Orchestra and Organ

13: White Plains\textsuperscript{16}
Date: 1931 or Earlier

\textsuperscript{13} “Percy Grainger’s Season,” The Sydney Morning Herald, 3 July, 1926.
\textsuperscript{14} Grainger “came to Australia at a very unfavourable time, clashing practically everywhere with Backhaus, whose wonderful success entirely overshadowed him. The Sydney season had to be curtailed … and a return season consisting of two appearances … had to be abandoned for similar reasons.” Sydney Mail, 24 November, 1926.
\textsuperscript{15} The first performance of the \textit{Australian Marching Song} version.
\textsuperscript{16} Percy Grainger to Hubert J. Foss, 15 August, 1931, in \textit{The All-Round Man: Selected Letters of Percy Grainger}, 1914-1961, eds. Malcolm Gillies and David Pear, (Oxford: Clarendon Press, 1994), 109. The White Plains, Chicago and Kansas were apparent performances Grainger alludes to, but with little other evidence. Like the 1931 Columbia University concert and later school and camp concerts, these performances may have been less formal affairs, often with the reduced orchestration.

14: Chicago\textsuperscript{17}
Date: 1931 or Earlier

15: Columbia University, New York
Date: 22 April, 1931
Choir: Phi Mu Alpha Sinfonia Fraternity
Orchestra: Phi Mu Alpha Sinfonia Fraternity
Conductor: Percy Grainger

16: University of Kansas, Kansas\textsuperscript{18}
Date: 6 May, 1931
Format: Chorus, Orchestra, and Massed Pianos

17: Suggested Performance
Date: Post-1934
Choir: Austral Choir (Brisbane)
Orchestra: N/A
Conductor: Percy Grainger
Format: Chorus, Orchestra and Organ

18: College of Emporia Auditorium, 18\textsuperscript{th}
Annual Spring Music Festival, Kansas
Date: 6 April, 1932
Choir: The Vesper a cappella Choir
Orchestra: College of Emporia Symphony Orchestra KANSAS
Conductor: Percy Grainger
Format: Chorus, Orchestra, Organ, Pianos

19: Town Hall, Adelaide
Date: 6 April 1935\textsuperscript{19}
Choir: Adelaide Bach Society
Orchestra: South Australian Orchestra
Conductor: Percy Grainger
Format: Eight voices and chamber orchestra

\textsuperscript{17} Ibid.
\textsuperscript{18} Ibid.
\textsuperscript{19} A repeat Adelaide concert on April 13\textsuperscript{th} was additionally planned but was abandoned for scheduling reasons. (Percy Grainger to Walter Conder, 22 February, 1935, National Archives of Australia.)
20: Christchurch, New Zealand
Date: 31 October, 1935
Choir: Christchurch Harmonic Society
Orchestra: Chamber Orchestra
Conductor: Percy Grainger
Format: Chorus and Chamber Orchestra

21: Town Hall, Wellington, New Zealand
Date: 23 November, 1935
Choir: Christchurch Harmonic Society
Orchestra: Chamber Orchestra
Conductor: Percy Grainger
(Victor Peters co-conducting the program)
Format: Chorus and Chamber Orchestra

22: London
Date: 5 November, 1936
Choir: The BBC Chorus
Orchestra: The BBC Orchestra
Conductor: Percy Grainger/Leslie Woodgate
Format: Chorus and Orchestra

23: Central High School, Detroit
Date: 2 June 1938
Conductor: Percy Grainger

24. Columbia, Missouri
Date: 5 February, 1940
Conductor: Percy Grainger

25. Columbia, Missouri
Date: 6 February, 1940.
Conductor: Percy Grainger

25: East Central Music Festival Suggested Performance
Date: 23 February, 1940
Orchestra: Festival Chorus and Band
Conductor: Marlo McCall
Format: Chorus and Orchestra

26. John Adams High School, South Bend, Indiana
Date: 12 January, 1941
Conductor: Percy Grainger

27. Gustavus Adolphus College, St Peter, Minnesota
Date: 28 February, 1941
Conductor: Percy Grainger

28: Central High School Annual Music Festival, Detroit, Michigan
Date: 5 June, 1942
Choir: Choric Speaking Choir, Boys and Girls Glee Clubs
Orchestra: Central High School Orchestra
Conductor: Percy Grainger
Format: Chorus, Orchestra

29. Muskegon, Michigan
Date: 26 March, 1944
Conductor: Percy Grainger

30. Interlochen, Michigan
Date: 18 August, 1944
Conductor: Percy Grainger

31: Gala Concert, Tallahassee, Florida
Date: 11 May, 1945
Choir: The Florida State College Glee Club
Orchestra: The Florida State College for Women Symphony Orchestra
Conductor: Percy Grainger
Format: Chorus, Orchestra and Organ

32. Lawrence, Kansas
Date: 26 March, 1948
Band: Mid-Western Music Camp Band
Conductor: Percy Grainger
Format: Wind Band

33: 1948 Broadcast Performance
Date: September 1948
Band: Central Band of the R. A. F.
Conductor: unknown
Format: Wind Band

34: Annual Spring Concert, Scottish Rite Cathedral, Detroit, Michigan
Date: March, 1949
Band: Wayne University Band
Conductor: Graham Overgard
Format: Wind Band

35: WNYC American Music Festival, Carnegie Hall
Date: 13 February, 1950
Band: United States Army Band of Washington D.C.
Conductor: Percy Grainger
Format: Wind Band
36. Canterbury College, Danville, Indiana
Date: 12 March, 1950
Conductor: Percy Grainger

37. Washington DC
Date: 29 March, 1950
Band: US Army Band and Chorus
Conductor: Percy Grainger
Format: Wind Band and Chorus

38. Miami Beach Municipal Auditorium, Miami
Date: 2 May, 1950
Conductor: Percy Grainger

39. Spring Music Festival, Miami Beach Municipal Auditorium, Miami
Date: 19 March, 1951
Choir: University of Miami Chorale, Miami Senior High School Chorus, Miami Edison High School Chorus
Ensembles: University of Miami Symphony Orchestra and Symphonic Band
Conductor: Percy Grainger
Format: Chorus, Orchestra/Band (including Organ)

40. High School Auditorium, Waukegan, Illinois
Date: 6 May, 1951
Conductor: Percy Grainger

41. Central High School, Columbus, Ohio
Date: 6 February, 1952
Conductor: Percy Grainger

42. Central High School, Columbus, Ohio
Date: 7 February, 1952
Conductor: Percy Grainger

43: Tempe, Arizona
Date: 6 May, 1953
Band: Arizona State College Symphonic Band
Conductor: Percy Grainger
Format: Wind Band

44. North School Auditorium, Phoenix, Arizona
Date: 7 May, 1953
Conductor: Percy Grainger

45: KU Outdoor Theatre, University of Kansas Summer Camp
Date: 26 July, 1953
Band: Students
Conductor: Percy Grainger
Format: Wind Band

46: Guggenheim Memorial Concert, Central Park, New York
Date: 29 July, 1956
Band: Goldman Band
Conductor: Percy Grainger
Format: Wind Band

47: Waco Hall, Baylor University School of Music, Texas
Date: 18 February, 1958
Band: Baylor University Orchestra and Golden Wave Band
Conductor: Percy Grainger
Format: Orchestra and Wind Band

48. Detroit Institute of Arts, Detroit
Date: 19 March, 1959
Conductor: Percy Grainger
Commercially Available Recordings as at June, 2017

Royal Northern College of Music Wind Orchestra
Year Released: 1997
Album: Grainger: Works for Wind Orchestra, Vol. 2
Label: Chandos
Conductor: Timothy Reynish
Format: Wind Band

The University of Georgia Wind Ensemble
Year Released: 2006
Album: American Influences
Label: Summit Records
Conductor: John Culvahouse
Format: Wind Band

The President's Own United States Marine Band
Year Released: 2007
Album: Marine Band Showcase Vol.2
Label: Altissimo!
Conductor Col. John R. Bourgeois
Format: Wind Band

Choral Arts Society of Washington/The President's Own United States Marine Band
Year Released: 2011
Album: The Music Lover's Grainger
Label: Altissimo!
Conductor: Col. Michael J. Colburn
Format: Chorus and Wind Band

The University of Houston Wind Ensemble
Year Released: 2011
Album: The Music of Percy Grainger, Vol. 3
Label: Mark Records
Conductor: Eddie Green
Format: Wind Band

Singapore Philharmonic Winds
Year Released: 2012
Album: 2011 WASBE Chiayi City, Taiwan: The Philharmonic Winds of Singapore
Label: Mark Records
Conductor: Leonard Tan
Format: Wind Band
Format: Wind Band

Melbourne Symphony Orchestra
Year Released: 2012
Album: Grainger: Works for Large Chorus and Orchestra
Label: Chandos
Conductor: Sir Andrew Davis
Format: Chorus and Orchestra
These two lists serve as a testament to the work’s active service, both as a concert item in Grainger’s conducting career, and its popularity as a wind band arrangement up to the present day. From a glance, they demonstrate that the *Marching Song* enjoyed regular outings in concerts from 1924 to 1959, generally with only one to two year absences, and was a work destined to follow Grainger through America, Australia and the UK, mainly with himself as conductor. Considering its status as an original and relatively large-scale work that did not use any folk-song elements, it rivalled *The Warriors* in performance frequency, ultimately receiving five airings between the similar completion and revision dates (1917-26) compared to the latter’s four.\(^\text{20}\)

Only two performances in Los Angeles (1930) and Detroit (1949) were undertaken in his absence, due to the efforts of John Smallman and Graham Overgard respectively. Smallman was a musician that Grainger “praise[d] warmly,”\(^\text{21}\) being the conductor of the Los Angeles Oratorio Society during the 1926 Los Angeles performance. He also founded his Smallman A Cappella Choir in 1924 and, with this group, went on to mount a performance of the *Marching Song* with organ, small orchestra and piano\(^\text{22}\) lauded as a “splendidly successful effort.”\(^\text{23}\) Overgard similarly achieved acclaim programming it in wind band orchestration in the Wayne University Band spring concert in Detroit in 1949.\(^\text{24}\)

Following Grainger’s death, this setting for wind band would rapidly come to eclipse the original scoring in performance frequency, as the available commercial recording catalogue testifies. Even so, the relative neglect of the *Marching Song* compared to his more

---


\(^{22}\) This was evidently the *Australian Marching Tune* - the reduced chamber form of the piece. However, as with all subsequent performances of this version, it was advertised and reviewed as the *Marching Song of Democracy*.


popular pieces caused Timothy Reynish to remark that “it is a tragedy that, fifty years after his death, four major works for wind are still rarely played or recorded: the two *Hill-Songs, Marching Song of Democracy*, and *The Power of Rome and the Christian Heart*, arguably with *Posy* his greatest contributions to the repertoire.”\(^{25}\) Having catalogued the performance history of the *Marching Song*, the remainder of this chapter’s discussion fleshes out its reception and how this shaped Grainger’s relationship with the work.

### 2.2 Public Reception to the *Marching Song*

During Grainger’s lifetime, performances of the *Marching Song of Democracy* were met with mixed but generally positive reviews, and even in all-Grainger concerts they tended to invite more discussion than the other works performed. What little discussion of its reception exists in the established biographical texts has mainly been selected to indicate a glowing reception to the work. For instance, John Bird characterises the first performance of the *Marching Song* in 1917 as “an immediate and emphatic success”\(^{26}\) and the later 1926 Los Angeles performance with “performers, audience and critics ... all sympathetic.”\(^{27}\) Similarly Slattery notes that Los Angeles audiences warmly recognised “the return to an intrinsically vocal attitude.”\(^{28}\) These selective accounts overlook the fact that the *Marching Song* actually tended to polarise critics to a great degree, who would either bestow glowing praise on the work, or were provoked into indignation and stridently take issue with its democratic precepts. This divide calls for a greater depth of examination.

In terms of its positive reception, reviewers generally found the epic scope, bold orchestration, and dramatic impact of the music most commendable, finding its innovations

\(^{26}\) Bird, 161.
\(^{27}\) Ibid., 192.
\(^{28}\) Slattery, 118.
unique and novel but comprehensible. Negative attention tended to be aimed at the perceived childishness of the syllabic text, and the more serious accusations of the work’s failure to acquit its aesthetic themes. It is interesting to note that the actual quality of the performance was generally a low concern for most critics, signifying that despite its difficulty the work was usually able to be performed successfully enough to allow it to be considered on its impressions and aesthetic merits. This is somewhat at odds with Grainger’s self-deprecating remarks regarding his own abilities as a conductor. In-depth engagement with the *Marching Song* beyond the superficialities of spectacle or wordless choir was less common. Even then, the accessibility of Grainger’s score preface and programme note to the *Marching Song* served as a foothold for much of the critical evaluation, and many reviews parrot his intentions and extra-musical themes. However, the impressions of critics, particularly from the early and Australian performances, are fascinating windows into the reception of a work finely balanced between the meaningful and the accessible. As became evident when compiling the extensive survey of the reception, it is rewarding to consider the reception in two streams: Australian and non-Australian commentary, bearing in mind the later discussion of Grainger’s conflicted attitude regarding the work’s appearance in Australia.

**American Reception**

The first three performances took place in America, firstly premiered in 1917, and twice a week apart in 1924. Perhaps the most vocal critic of the *Marching Song* was Henry Edward Krehbiel, who took to the pages of the *New-York Tribune* to sermonize his issues.

---

with it on two separate occasions within five months of its 1917 Worcester premiere\(^{30}\) (7 October, 1917\(^{31}\) and 17 February, 1918\(^{32}\)). Initially, Krehbiel was critical of both linguistic and orchestrated elements, stating that “It is the most remarkable case of thundering in the index that has ever come under our notice. There are no words to this choral piece – only nonsense syllables ... bolstered up by pompous noises from an orchestra with an extraordinary quota of din-making instruments.”\(^{33}\) Tempering this somewhat, he conceded the music was “ingenious, clever, [and] masterly in construction”\(^{34}\) but ultimately condemned it as “mere sound and fury, signifying nothing,”\(^{35}\) seemingly incredulous that Grainger could reduce democracy to “merely an emotion which can find expression in senseless sound.”\(^{36}\) Krehbiel then takes this further in his later article, with an admonishing response to a pro-wordless music essay by musicologist Edward Dent.\(^{37}\) By this point, it appears the lack of coherent text in the *Marching Song* was his greatest issue by far. He subsequently railed against Grainger’s use of wordless choir, emphasising that although “it seems to have required several hundred lines taken from Walt Whitman’s yawps to elucidate its sentiments, [but it] has for its vocal basis nothing but meaningless vocables.”\(^{38}\) He draws amusing extrapolations to other composers, evoking a world where Schubert and Schumann were “robbed of the poetry which inspired them,”\(^{39}\) and going so far as to ask: “Would the lovers of Hugo Wolf’s songs find the beauty in them which they find now if


\(^{33}\) Krehbiel, “New Music at the Worcester Festival,” 1917.

\(^{34}\) Ibid.

\(^{35}\) Ibid.

\(^{36}\) Ibid.


\(^{39}\) Ibid.
instead of the words to which they are set they were asked to sing “pom-pom” or “diddle-diddle” or “fa-la-la”? Such sentiments that reflect the perceived misalignment of Grainger’s lofty objectives and the “happy-go-lucky” character of the music itself would later be echoed in Oscar Thompson’s less-than-positive assessment of the later 18 May, 1928 performance in Ann Arbor, Michigan finding the music guilty of “stunt-writing” and also remarking that “the world would have been quite as safe for a marching democracy if intelligible words had been given.” As discussed below, this innovative aspect was also a favoured target of Australian critics.

Despite these occasionally unfavourable reviews, Bird and Slattery are nevertheless fairly accurate in that American audiences were generally warmly receptive towards the Marching Song. These reviews typically praised the work as an important and impressive composition, while also acknowledging Grainger’s status as an innovator. Countering the opinion of Krehbiel at the 1917 premiere, the Atlanta Constitution wrote how “this splendid pianist is a composer who delights in wandering from the beaten path and rambling along unfamiliar ways” noting that “the rugged beauty of the work, as interpreted by Dr Mees, made its instant appeal to the audience.” The main attraction to the audience appeared to be the work’s indefatigable energy and jubilant marching character transmitted by great instrumental and vocal forces. In an article subtitled “Marching Song of Democracy” Wins Audience With Vigor of Movement, Charlotte Tarsney mainly focuses on these elements, admiring how the piece “moves with a rhythmic swing and forceful urge, that is insistent

---

40 Ibid. Interestingly, “pom” is usually the only syllable from the Marching Song accurately replicated in such reviews. The remainder are normally more crude mock-ups as suggested here.
41 Grainger, Marching Song of Democracy, 1.
42 Oscar Thompson, “Variety Spices Fine Festival at Ann Arbor,” Pittsburgh Post-Gazette, 19 May, 1928. He continues in this vein to state that “one at least can be thankful that there is instrumentation instead of a barrage of whistling.”
43 Ibid.
44 “Mercury or Sammy,” The Atlanta Constitution, 21 October, 1917.
45 Ibid.
and compelling."\textsuperscript{46} Tarsney goes on to further emphasize the dramatic impact with “a climax that fairly catches the breath.”\textsuperscript{47} A more balanced but still positive view of this first performance by Frederick Donaghey observed that “the song had its effect in the Philharmonic’s earnest performance”\textsuperscript{48} but also that it “would have been better if choristers and orchestra had been in alliance for at least one more rehearsal.”\textsuperscript{49} However, these positive articles tend to only examine the surface qualities of the music. Given the work’s extremely limited performance outings in the absence of Grainger’s physical presence, its acclaimed impact in Grainger literature seems somewhat overstated, and its inclusion in programmes for its own merits was limited without the triumvirate of composer, conductor and masterpiece in place. This was something Grainger would come to view as an obstacle to the proliferation of his important works, expressing to conductor Bernard Heinze doubt over his own abilities as a conductor: “I do have the gift of fame: audiences want to go to hear or see me & all sorts of misguided conductors … let me try my hand on their forces. But always with the same result: mutual disappointment, ineffectuality, disgust.”\textsuperscript{50}

An interesting supplement to the positive American reaction was the perception of the \textit{Marching Song} as a piece for and about America, or as one article stated, “the thought of Americans marching to work.”\textsuperscript{51} Such a view is unsurprising, given that the \textit{Marching Song} heavily references Whitman and \textit{Leaves of Grass} in its programme note, not to mention the inspiration of the George Washington statue. Furthermore, Grainger’s 1917 enlistment in the US army, and the often pointed-out fact that Grainger became a

\begin{footnotes}
\footnote{47} Ibid.
\footnote{49} Ibid.
\footnote{50} Percy Grainger to Bernard Heinze, 3 December, 1917, \textit{The All-Round Man}, 218.
\footnote{51} “Choir will Sing with Orchestra,” \textit{The Los Angeles Times}, 26 October, 1930.
\end{footnotes}
naturalised American in 1918, further compounded this interpretation. The coincidence of the *Marching Song’s* first publication and premiere amid World War 1 also fanned its approval as a patriotic contribution to the war effort. Even in Australia this assumption was made: in a 1917 article lamenting the poor state of Australian patriotic songs entitled “Song Writers Doing their bit in the war,” Melbourne author Francis John remotely praises the *Marching Song* as being part of the “great output of patriotic songs” in America that “recognise[s] how the American people are enthusiastically in this struggle.” He notes how composers in America such as Grainger were “endeavouring to do their bit in stimulating and consolidating ... the high resolve of the great bulk of the [American] people.” Given the circumstances, the perception that the piece was an intrinsically American work or product of the war effort is understandable, even if such a view overlooks the fact that it was commenced sixteen years earlier, ironically in Frankfurt, Germany.

**Australian Reception**

When Grainger revealed his intentions to become an American citizen to British music critic Robin Legge in 1917, he was careful to disclaim:

> In wishing to become an American I do not love Australia less, its incomparable scenery, its glorious ultra-democraticness, its myriad nature appeals to me. It is because I am such an ultra-democratic, ultra Colonial Australian, I think, that I find in America such intense satisfaction, such a realisation of my inborn ideals.

With these ideals closely associated with both Australia and the *Marching Song of Democracy*, it is not difficult to imagine Grainger’s keenness towards the work’s anticipated

---

53 Ibid.
success. The generically positive praise observed in America was also frequently present in Australian newspapers, marvelling at the “amazing combinations of instruments and of voices, strange rhythms, astounding harmonies, and a general bombardment of the musical faculties.” Relatively few Australian reviews attempted to positively engage with the work on a more meaningful level. The Queenbeyan Age provided one minor example, however, and enthused that audiences must have “realised instinctively that there was something more than music, a poem, an epic, a great conception” going on to align Whitman with Grainger in their disdain for the “old forms of former poets.” Overall, while a significant number of Australian reviews of the chorus-orchestra concerts and the Marching Song were undeniably glowing, their lack of engagement with the raison d’être behind the music made the astute negative criticism less opposed.

Like the writings of Krehbiel, the Australian reception contained similarly unsympathetic voices, with even downright mocking instances on occasion. Lengthy articles, while often praising his pianistic abilities, would deride his eccentricity as a composer and musical thinker without hesitation. As with the American performances, the innovative aspect of nonsense syllables was a favourite target for Australian critics. Starkly opposed to The Queenbeyan Age’s appraisal of the 1926 Melbourne performance, an alternative dismissive perspective appeared in the Sydney Mail. It firstly proclaimed Grainger’s lack of success on his Australian visit, highlighting his need to cancel performances (including a

55 “Music,” The Australasian, 6 November, 1926.
56 “A Remarkable Australian,” Queenbeyan Age, 9 November, 1926.
57 “As an exponent of pianism – yes, and a fine one; as a critic of symphonists he need hardly be accepted very seriously.” “Percy Grainger: Pianist and Critic,” Sunday Sun, 28 October, 1934.
58 An anonymous writer recalled a 1935 Melbourne incident when after a rehearsal of the apparent concerto for musical glasses (no doubt the central section of Tribute to Foster), Bernard Heinze and Grainger praised one another as the world’s greatest conductor/composer respectively. “The orchestra” commented a well-known critic, “reserved its opinion in both cases.” “Percy, the Percussive Pianist” ca. 1938, National Archives of Australia.
planned Sydney *Marching Song* performance) due to being “entirely overshadowed” by the simultaneous appearance of renowned pianist Wilhelm Backhaus. Finally, it rounded on Grainger’s recent orchestral effort:

He produced a very strange impression owing to the eccentricity in scoring. In one work ... the chorus’s part was merely reduced to sing in the syllables “la-la” from beginning to end... many of his compositions savour of striving for unusual effects, not thoroughly for the sake of art alone.60

However, the main point of distinction between American and Australian criticism was that the latter country was also the source for much more substantial and thoughtful criticism aimed both at Grainger’s innovative efforts and to the *Marching Song* specifically. Australian composer and pianist, Hooper Brewster Jones, ventured such aesthetic judgements in the *Adelaide Advertiser* following Grainger’s 1935 concert of Nordic music, aiming well beyond the relatively superficial syllabic content. The thorough and balanced review systematically detailed the entire concert, being both positive and critical at times in both performative and aesthetic respects. Running throughout, however, is a scepticism towards Grainger’s brand of “frankly unscientific” idealism, with Jones at one point suggesting the *Australian Up-Country Song* failed to “catch the wistfulness of the outback.”62 In this vein, he wrote the following about the *Marching Song*:

It is experimental, inasmuch as it attempts to portray the very simple and ingenuous spirit of Australian athleticism. By its very complexity, however, it gives more of a suggestion of mental gymnastics, and neither vocally nor instrumentally does it make a direct appeal.63

---

59 *Sydney Mail*, 24 November, 1926.
60 Ibid.
62 Ibid.
63 Ibid.
This is the kind of criticism one finds levelled at American modernist composer Charles Ives’ ideas of transcendental inclusivity and progress of humanity, where he hopes “the future product of some coal-miner’s soul in the forty-first century” would eclipse Beethoven’s artistic efforts.\footnote{Charles Ives, \textit{Essays Before a Sonata}, (New York: The Knickerbocker Press, 1920), 106.} But as the booklet accompanying the Continuum Ensemble’s recording of his music states: “unfortunately, his uncompromising search for an honest expression of a nation’s soul produced music that most people refused to perform.”\footnote{Charles Ives, \textit{A Continuum Portrait: Charles Ives}, vol. 3, Continuum, Cheryl Seltzer and Joel Sachs, Naxos 8.559194, 2005, compact disc booklet, 2.} In parallel, Jones’s accusation of unappealing complexity jars considerably against Grainger’s intentions, not only for the piece but also directly against some of his closely-held musical ideals, as he outlines in a letter to D.C. Parker: “As a democratic Australian, also as a lover of the natural and the universal, I long to see everyone somewhat of a musician, not a world divided between musically abnormally undeveloped amateurs and over-developed professional musical prigs.”\footnote{Grainger to Parker, 28 August, 1916, 10.} Likewise, Grainger may be charged with an ironic elitism when depicting a “forward-striding host of comradely affectionate athletic humanity,”\footnote{Grainger, \textit{Marching Song of Democracy}, 1.} and ostensibly a humiliating prospect when one of his most important pieces failed to herald in a new musical enlightenment in his home country. Jones’s criticism raises the question, does the \textit{Marching Song} actually succeed in being “heroic but not martial,” “passionate but not dramatic,” and “athletic but not competitive”\footnote{Ibid.} or does it lose sight of its extra musical objectives? As discussed below, more recent Australian reactions to the \textit{Marching Song} suggest the latter, failing spectacularly to resonate with audiences today. Ives nevertheless offers a measure of consolation in the \textit{Essays Before a Sonata}, arguing that “the greater the distance his music falls away, the more reason that some greater man shall bring his nearer...
those higher spheres.”

Still, some critics held out hope for the future success of philosophical resonance. An author under the presumable pseudonym “A. Major” makes such interesting points in their article Afterthoughts About Grainger, reflecting on his 1934/35 Lecture broadcasts:

“Grainger’s main mission ... has been to open the minds of his hearers to the fact that in the house of music are many mansions. Places have to be prepared for us in all of them before we can comfortably enter.”

In striking parallel to Ives’s analogy above, they go on to write:

“It is just possible that a hundred years from now a Schoenberg composition that sounds to most of us to-day like a cat rummaging for a mouse in the coalscuttle will be whistled by the butcher’s boy and afford him and his hearers most exquisite delight.”

By far the most intense engagement with the Marching Song’s philosophical agenda was an anonymous 1926 Melbourne review in The Age. Declaiming that Grainger’s ideas were “youthful and revolutionary” avoiding “sober reflection” and “sweet reasonableness,” it pre-empts Meller’s criticism that the work is “simply childish ... with no sturdier substance.”

The review argues that the work represented:

The less attractive side of democratic tendency, impulsive action unsteadied by experience, is dominant. Political aspiration, critical observation, the undoubted popular uplift of altruism appear to be covered by sheer enthusiasm. The nonsense syllables set for the chorus aid this impression of irresponsibility ... The strife of tongues, the free play of militant forces, a contentious contrapuntal freedom and an apparent struggle for an unknown goal are rather terrifying, but not altogether lovely.

---

69 Ives, Essays Before a Sonata, 124.
71 Ibid.
72 “Grainger Festival,” The Age, 1 November, 1926.
73 Ibid.
74 Mellers, Percy Grainger, 16.
75 “Grainger Festival,” The Age, 1 November, 1926.
The deliberation and ultimate rejection of the *Marching Song* and other ambitious works in these articles were rarely, if ever, properly countered in Australian public discourse. As discussed below in Grainger’s interactions with the music, such writings were cited as the major factor in his extreme reluctance to reintroduce such works to the Australian public in his later life. Notably, Grainger’s advocacy of the *Marching Song* remained heathy in America and England, suggesting that the occasional unflattering American review was less discouraging than their carefully considered Australian counterparts. There is therefore an intricate web of connections evident between Grainger’s “musical creed,” its representation in the *Marching Song*, his conflicted Australian identity and his sensitivity towards the reaction of the Australian public.

### 2.3 Grainger’s Attitude Towards the *Marching Song*

Having examined public reactions to the *Marching Song*, this chapter now turns towards Grainger’s own attitudes and reactions towards it. His strong interest in the work is evident from several perspectives: his own comments about the work, his frequent inclusion of the work in major concerts throughout his life and constant push for additional airings. The initial reactions of Grainger towards performances of the work were generally those of satisfaction tinged with self-consciousness. The first major remarks of this nature stem from his hearty praise of Dr. Arthur Mees’ efforts with the first 1917 performance, commenting after the 1924 concerts that “I shall never hope to hear ... my *Marching Song of Democracy* as perfectly, satisfyingly done as he did [it].”\(^76\) In this essay, he went on to say that despite now being “in a position to judge” his own fulfilment, he perceived it as being somewhat at odds with the reactions of others:

\(^76\) Percy Grainger, “To My Fellow-Composers” in *Grainger on Music*, 158.
It sounds as I wanted it to ... I do not think that the audience cares much for this work, or that other musicians prize it very highly – not even “Graingerites.” But I like it, and naturally care more for my opinion than the whole world’s.  

As discussed above, this discounts much of the positive American reaction that survives through reviews, and this belief (if honest) did nothing to stop Grainger or his promoters touting the *Marching Song* across the globe as one of his most important, characteristic and occasionally even popular works. The lingering expression of doubt remained, however, throughout his career as is evident in his 1950-52 article *About Delius* where he described its status as one of his “most important and least saleable works” – the rationale for its sympathetic second publication with Universal Edition in 1925.

Yet before these are even factored, on a more personal level he would closely associate the Whitman element of the work with his mother, Rose. It is important to note that every stage of the sketches from 1908 was presented as a yule or birthday gift to her, and the finished work would ultimately bear the dedication: “For my darling mother united with her in loving adoration of Walt Whitman.” The tribute nature of the work intensified after her suicide on 30 April, 1922 and at least two major performances were intentionally staged by Grainger to coincide with the anniversary of her death in 1924 and 1926.

Although this is quite independent from other aspects contributing to the *Marching Song’s*

---

77 Ibid., 159.
78 “Beatless Music’ is Grainger Specialty,” *Palm Beach Post*, 27 February, 1925.
79 “He sought very largely to express athletic instincts and actions in his music, and for this reason, his
“Marching Song of Democracy” was one of his most characteristic works” “Racial Expression: Views of Mr
80 “Grainger Original Orchestrations,” *The Advertiser*, 10 September, 1926. Also, *The Ithaca Journal* places the
*Marching Song* alongside Molly on the Shore and Mock Morris in popularity. “Percy Grainger Plays Here on
82 Ibid., 366.
84 “Many knew that the New York concert fell on my beloved mother’s death day, and that I planned the whole
thing as a kind of consecration.” Percy Grainger, “To My Fellow-Composers” in *Grainger on Music*, 158.
esteemed place in Grainger’s catalogue, it is difficult to overestimate the importance of Rose Grainger to her son, and it reflects on his later adamant attempts to mount multiple performances in the Aldridge family hometown of Adelaide.\textsuperscript{85}

**Enthusiasm for Performances**

As the performance list indicates, the *Marching Song of Democracy* featured with great regularity in Grainger’s conducting schedule. This was a symptom of a conscientious and largely successful effort on his part to “push the work”\textsuperscript{86} which necessitated a great deal of behind-the-scenes advocacy. This attitude is greatly captured in a 1931 letter to British composer and publisher Hubert J. Foss stating that “It is a regret to me that my larger and most typical choral works (such as *Marching Song of Democracy* …) have never (to my knowledge) been heard in Great Britain.”\textsuperscript{87} The bulk of the letter is then dedicated to espousing its successful performance history, conditionally offering to waive the royalties, reassuring Foss of its practicality and newly-developed chamber orchestration, as well as espousing the work’s importance above the rest of his choral output:

> The *Marching Song of Democracy* is the most representative and effective of my larger choral works, (I value it as an expression of a typically Australian democratic athletic sentiment otherwise perhaps not voiced in music) … A few years ago it seemed a stiff work to the average American choir, but that is so no longer – and to English choirs … it would offer no difficulties.\textsuperscript{88}

Despite such efforts, Foss did not take the bait and the UK premiere of the work would take a further five years, and Grainger’s physical presence as conductor, before it would be performed and broadcast in 1936 with the BBC Orchestra. In 1935, Grainger

\textsuperscript{85} See No.7 and No. 19 in the *List of Performances*.
\textsuperscript{86} Grainger to Foss, 15 August, 1931, *The All-Round Man*, 109.
\textsuperscript{87} Ibid., 108.
\textsuperscript{88} Ibid., 109.
would more successfully make similar pleas and concessions to encourage New Zealand performances offering to order and lend rather “than that they should omit an important item from a program because they cannot afford to buy it ... In particular, I do not want Father & Daughter or Marching Song of Democracy omitted if possible, as they are especially effective and representative. (But The Hunter in his Career may be substituted for Father & Daughter if absolutely necessary.)”89 These efforts would result in two further performances of the Marching Song in its more practical chamber orchestration during his 1935 New Zealand visit.

These are not the only instances of Grainger attempting to encourage performances of the Marching Song beyond the realised performances, clearly evident from the performance listings where the Marching Song was advertised, planned or even in some cases rehearsed, but did not make it to actual performance. Even after the 1926/1935 Australian performances that caused Grainger great reluctance to have Marching Song further performed in Australia (discussed later), he still suggested its inclusion to conductor Harlo McCall for the East Central Music Festival on 23 February, 1940, according to Philip Correll.” Although this was rejected, with concerns about the “difficult vocal programme” and likely “lack of preparation from the local singers”90 no doubt being significant factors, this nevertheless shows the desire for more regular performances on Grainger’s part. His enthusiasm for Marching Song performances remained consistently strong over the years, leading him to insist to the Wayne University Band’s conductor Graham Overgard “If yr groups want to do something of mine that is grand, festive & massive, this is the work –

89 Percy Grainger to E.C. Hands, 4 May, 1935, The All-Round Man, 133.
above any other of mine!”\textsuperscript{91} This ultimately led him to score it for wind band to accommodate Overgard’s preference for this orchestration.\textsuperscript{92}

Regardless of the mixed degree of success involved in these efforts, the promotional actions of Grainger are another more practical symbol of the high regard in which he held the work. It mounts evidence that challenges Kreines’ claim that while the \textit{Marching Song} “had considerable success in the decade following its first performance ... the gradual eclipse of Grainger’s professional career as pianist/composer resulted in virtually total neglect of this and other larger-scale works.”\textsuperscript{93} Firstly, this appears to be an exaggeration, both in time and lack of attention, as the \textit{Marching Song} maintained regular performances over the four decades after its 1917 premiere. However, there is some truth to the claim, in that the work was never performed by a major national orchestra past 1936, with Grainger instead preferring college-level ensembles. Yet the evidence does not suggest that Grainger’s enthusiasm had dwindled for the work; contrarily, he was actively searching for considerably more opportunities for performance than it received. Reflecting in August 1953, Grainger’s attitude towards this perceived indifference was that “If one’s compositions do not ... (make a hit), if they are not \textit{liked}, I don’t suppose there is much one can do. But whether it is better to accept defeat – as Cyril has – or to fight on, as I have, I don’t know.”\textsuperscript{94}


\textsuperscript{92} As opposed to Kreines’ assumption that it was the success of the Goldman Band that prompted the new version, Graham Overgard wanted a version for band for a concert in May 1948 concert, however it was not ready to be performed until March 1949.

\textsuperscript{93} Kreines, 214.

\textsuperscript{94} Grainger, \textit{Self-Portrait of Percy Grainger}, 231.
Australian Sensitivity

Parallel to its criticism, Grainger’s attitude towards the Marching Song in Australia is very different, showing just how sensitive and complex an issue its success was for Grainger. Supporting the work’s position as an important piece, of the two major orchestral programmes Grainger managed to present on his tours, only the Marching Song was present on both. The Warriors and various folk song settings also featured in 1926, and Love Verses from the Song of Solomon, Tribute to Foster and Colonial Song were among the more substantial works presented in 1935. Indeed, as shown in the performance list above, a further three Australian Marching Song performances had to be abandoned for various reasons including difficulties in rehearsal and schedule clashes. Two of these cancellations occurred in 1926, yet Grainger was insistent that a 1935 Australian performance of this repertoire would take place. Grainger had talked about reintroducing the Marching Song to Australian audiences well before the 1935 visit was finalised, as evidenced in The Brisbane Courier\textsuperscript{95} where he lists it first among the choruses that he would like to see performed on his eventual return. It again appears even closer to his visit in an early 1934 article quoting his correspondence with E. R. B. Jordan, in among works that “he hopes to do ... with the Austral Choir”\textsuperscript{96} indicating a desire for an ultimately unrealised Brisbane performance. In 1935 Grainger referred to it in writing to the Australian Broadcasting Commission’s general manager Walter Conder saying: “I should be very sorry to leave Australia without giving those important programmes in Adelaide ... I should be sorry to do so much less in 1935 than in 1926, especially as the response to this type of concert was so fine”\textsuperscript{97} implying at least a moderate degree of satisfaction with his 1926 performances.

\textsuperscript{95} “Australian Composer Plans to Revisit His Native Land,” The Brisbane Courier, 18 February, 1933.


\textsuperscript{97} Grainger to Conder, 22 February, 1935.
In his later years, this recollection of a fine response had soured somewhat and his attempts to promote his original music in Australia became severely and bitterly curtailed. The 1947 letter to Heinze expresses this sentiment clearly:

If I were foolish enough to try & put my music, musical opinions & feelings before the Australian musical public in any form, it would simply leave a very bad taste in the Australian musical mouth & heighten my own distress & sense of artistic guilt.  

The *Marching Song of Democracy* was foremost among the works Grainger was most sensitive about. Tellingly, it alone was omitted from a 1949 list of works that Grainger had offered to supply to the ABC, a list that nevertheless included the ambitious *The Warriors*, *Hillsong I* and the *In a Nutshell* suite. More explicitly, in correspondence with conductor Bernard Heinze and again with William James, the Australian Broadcasting Commission’s director of music, Grainger had withdrawn this will to “present his own ‘more ambitious pieces’,” citing that “When I have had my more ambitious pieces given in Australia in the past (*Marching Song of Democracy*, *The Warriors*, etc.) I had a feeling that there was no natural public response to it ... I saw no use in beating a dead horse.”

Curiously, in this same letter as a post script, the wind band version of the *Marching Song* cheerfully appears as a suggestion of repertoire that Grainger was happy to conduct in association with the ABC. This suggests that the wind band version, while successful, became somewhat devalued as an important, ambitious work in Grainger’s eyes. Devoid of the spectacle of a “humanitarian democracy” best communicated through “nature

---

99 William James to Percy Grainger 22 February, 1949, National Archives of Australia.
101 Percy Grainger to William James, 28 September, 1951, National Archives of Australia.
102 Ibid.
endowed” voices,104 and the characteristic wordlessness no longer present to illustrate an “immersion in a general central emotional mood,”105 the Marching Song had become totally removed from its earliest conception as a work only for voices. This suggests that it was specifically the democratic symbolism behind the chorus involvement in the Marching Song that was of most importance to Grainger. In any case, the possibility of wind band performances proved to be unlikely when James replied: “Unfortunately we have no really first class Military Band in this country. We did have a first class band of this type (A.B.C Military Band), but this unit has only recently been disbanded.”106 In a final twist, towards the very end of his life Grainger would again “feel elated at the thought of doing once more ... my chief works in Australia,”107 predicted in his earlier letters when he stated that a more positive reception might “take place in Australia in the future” when “the time is ripe.”108 Yet as Nelson notes, the deterioration of Grainger’s health would continue to prevent this from becoming actualised.109

Additionally, the 1934-35 visit had also featured Grainger’s lecture series for the ABC, summarising his unusual thoughts and aesthetics about music and including examples of his Free Music experiments in January. Despite being also subject to suspicion and ridicule by some critics,110 it did not prevent Grainger from looking back fondly at the experience in the correspondence with James with a “lively feeling of thankfulness”111 for these broadcasts. This is interesting as it suggests that the lecture series, presenting his

104 Mellers, 17.
105 Grainger, Marching Song of Democracy, 2.
106 William James to Percy Grainger, 9 October, 1951, National Archives of Australia.
107 Percy Grainger to William James, 4 August, 1957, National Archives of Australia.
108 Percy Grainger to William James, 28th September 1951, National Archives of Australia.
110 “Percy Grainger Pianist and Critic”, Sunday Sun, 28 October, 1934, National Archives of Australia.
111 Percy Grainger to William James, 28 September, 1951, National Archives of Australia.
controversial opinions on music, was more impervious to harsh critical response than that aimed at his compositions.

Grainger’s conflicted attitude in light of the mixed Australian critical reactions to the *Marching Song*, allows the conclusion to be drawn that perhaps the Australian musical public had not heralded this ambitious music as prophetic to an extent that he found sincere. Rather than causing a profound shift in Australia’s musical culture and resonating deeply with audiences as an intended “natural response,” the *Marching Song* was simply enjoyed as a spectacle at the time, an impression that can certainly be gleaned through the reviews. Additionally, the failure of these works to have a life of their own in Australia, the newest of “Anglo-Saxon” nations,\(^\text{112}\) may also be viewed as the frustrating result of his popularity, with a lack of serious respect shown towards the work’s accompanying ideals. The idea that the celebrity phenomenon of Grainger as an arranger, performer and conductor risked overshadowing his meaningful content has been frequently articulated.

Brian Morton elucidates this sentiment:

> Percy Grainger was much obsessed with posterity. It itched at him that his reputation was made and sustained as a performer of other people’s work, that his most distinctive innovations were either ignored or co-opted without acknowledgement, and that he should be remembered best for his least demanding efforts.\(^\text{113}\)

Perhaps the lack of resonance reopened the old wounds Grainger had expressed when composing the *Marching Song* on his 1908 tour, noting how his “bit by bit growing dislike of Australian humanity ... would make it harder for me to finish *Marching Songs* with all the early enthusiasm.”\(^\text{114}\) Even more dynamically in a letter to Karen Holten, he fretted the

---


concern that “Australians always overlook me & always would ... To Hell with them, I say ... I’m thinking of giving up Australia for ever, curse them.”\textsuperscript{115} The \textit{Marching Song}’s direct involvement in these moments of doubt, combined with its stated application to Australia,\textsuperscript{116} makes it a remarkably strong candidate as a work that made him feel particularly vulnerable in regards to its reception: Australian critics were actively expressing doubt about its precepts and objectives, and advocates approached it mainly from a superficial musical perspective. This likely exacerbated his uncharacteristically self-conscious reluctance to have future performances of the \textit{Marching Song} planned in Australia, while at the same time actively encouraging its performance as one of his most significant works in America.

\textbf{2.4 Scholarly and Contemporary Perspectives}

Additional perspectives on the \textit{Marching Song of Democracy} are also worth examination, particularly those regarding the work since Grainger’s death. This includes considerations from an analytical perspective and also the recent response to the high-profile performance and recording of a number of Grainger’s rarely performed works for chorus and orchestra released by Chandos in 2012. Wilfred Mellers’ harsh evaluation aside, academics and analysts have typically held the \textit{Marching Song} in extremely high regard. From an early compositional perspective, it was heralded by Grainger’s biographer D.C. Parker as “the modern and Australian version of the \textit{Gloria} of a Mass,”\textsuperscript{117} showing “an understanding of the capabilities of the chorus ... the scoring is not that of a man who

\textsuperscript{115} Percy Grainger to Karen Holten, 12 December, 1908 in \textit{Farthest North of Humanness}, ed. Kay Dreyfus, 250.
\textsuperscript{116} Grainger, \textit{Marching Song of Democracy}, 1.
\textsuperscript{117} D.C. Parker, \textit{Percy Aldridge Grainger: A Study}, (New York: G. Schirmer, 1918), 24-25.
conceives his work in terms of the piano and transplants it to the orchestral sphere.”

It is classified by Bird as a “ramble” despite its strong thematic unity described in Chapter One, but also “one of his most remarkable works.” Even in its wind band version, this is a sentiment echoed by Reynish and Kreines; the latter proclaims it “one of Grainger’s greatest achievements [that] certainly deserves to be ranked with the finest compositions for wind band.”

The practicality afforded by an ever-increasing association with the wind band version would ultimately draw it away from the original orchestration. The most obvious symptom of this was the fact that, until 2012, no commercially available recording of the version for chorus and orchestra was available. Only recently, a significant undertaking of rare Grainger works by the Melbourne Symphony Orchestra conducted by Sir Andrew Davis, managed to include *Marching Song* alongside several other premiere recordings. Some of these were live performances from Grainger concerts held at Hamer Hall from 30 August – 1 September, 2012, including the *Marching Song*, and the remainder recorded in the same space shortly thereafter. Unfortunately, Grainger’s fears regarding its Australian acceptance were once again validated, with both the performance and music itself being widely criticised in the media. The concert was unusual in that it garnered dual austere reviews stemming from both the live concert and later from the recorded release, that tended to attack the music and performance respectively.

The live performances were heavily overshadowed by the inclusion of Australian pianist Piers Lane performing the Grieg A minor Concerto, and consequently the Grainger component of the program failed to make a significant impression. This led to Clive

---

118 Ibid. 17.
119 Bird, 144.
120 Ibid., 58.
121 Kreines, 215.
O’Connell remarking that “the MSO and its chorus presented a mixed bag from Grieg’s Australian composer-cobber, Percy Grainger,”¹²² and that compared to the *Tribute to Foster*, “the *Marching Song of Democracy* revealed the frailty of Grainger’s good intentions.”¹²³ More explicitly, Suzanne Yanko similarly praised Lane’s Grieg interpretation and proclaimed the *Marching Song* was an attempt at “a vigorous, patriotic march ... but it didn’t measure up to most of the anthems heard at the Olympics.”¹²⁴ More critically, she remarked of the composer:

Percy Grainger will always be a strange and controversial figure and, while much of his music for piano masks that truth, his choral works as presented in this concert will do nothing to change that. The most his critics might have to say is that, as a composer, he had hidden depths. Frankly I would prefer that they had stayed hidden.¹²⁵

As a recording, edited and compiled alongside his additional works for similar mediums, the *Marching Song* does not fare better, even among Grainger enthusiasts, although these shifted the focus away from the music and towards the performers. “Well known Graingerite”¹²⁶ Vincent Plush remarks in the Grainger Museum’s *Hoard House Newsletter*: “In *Marching Song of Democracy*, Grainger created one of his most baffling and unruly works. This new performance makes a strong argument, either for its celebration or suppression, or both.”¹²⁷ Plush further warns that in the context of the album, “the ear tires of his supercharged harmonies and convoluted melodies.”¹²⁸ Peter J. Rabinowitz, a frequent

---

¹²³ Ibid.
¹²⁵ Ibid.
¹²⁷ Ibid.
¹²⁸ Ibid.
reviewer of Grainger recordings, places the blame for this squarely on those involved rather than Grainger’s composition itself.

Andrew Davis’s new version is no match in sheer exuberance for its predecessors ... part of the problem is Davis’s string-saturated interpretation, which tends to sacrifice sparkle for glow, glint for gleam ... For the most part, though, these are rather pudgy performances, not always helped by the less-than-secure and often blanched-out chorus, which mumbles its words and sometimes fudges ensemble.\textsuperscript{129}

These recent reviews point to the failure of Grainger’s original and ambitious music to be taken seriously by both public and performers in Australia. More energized recordings of the \textit{Marching Song} are readily available from overseas ensembles, including for the equivalent chorus and wind band. In light of this fact, the present catalogue of recordings is a parallel microcosm of its historical reaction – rarely attempted and underwhelmingly received in Australia, but more successfully and frequently engaged elsewhere. In spite of the 2012 attempt by the Melbourne Symphony Orchestra, perhaps hope for future Australian acceptance of the \textit{Marching Song} lies in arrangements returning the chorus to the more popular wind band version, allowing it to regain traction in a form that allows the democratic and Whitman-inspired objectives to become more prominent through the voices.

\textbf{Conclusions}

Reflecting on its place among Grainger’s other works, examination of the critical reception across numerous \textit{Marching Song} performances reveals that the piece succeeded outside of Australia at being accessible on both a musical and aesthetic level, while

\textsuperscript{129} Peter J. Rabinowitz, review of \textit{Grainger: Works for Large Chorus and Orchestra}, Melbourne Symphony Orchestra, conducted by Sir Andrew Davis, Chandos 5121, \textit{Fanfare}, (September/October 2013): 328.
maintaining its status as a major ambitious work. The single self-contained movement was
typically longer than the trifling folk miniatures Grainger had been popularly associated
with, but not so long as to risk overwhelming the audience with “supercharged
harmonies.” It managed to be at once ambitious yet inclusive in a fashion, innovative but
not alienating, and even despite its technical difficulties not virtuosic for its own sake.
Furthermore, even with its ambitious orchestration, the *Marching Song* was easily able to
be supplemented with other similar repertoire in concert, often coupled with Delius’s *Song
of the High Hills*. It was one of the few original larger Grainger works for chorus and
orchestra that might (and did) effectively conclude a concert of smaller and less
significant or folksong-derived works. This is an important practical consideration that
separates it from the unique combinations of other major twentieth century works such as
*The Warriors*, Antheil’s *Ballet Mechanique* or Ives’ 4th Symphony.

Therefore, in the scheme of Grainger’s output, the *Marching Song of Democracy* is
an original philosophically and musically important work. It consists of a finely tuned blend
of musical characteristics that positions it midway between his appealing folk settings and
his more challenging Free Music/Hill-Song ideas, aiming to communicate a vision of musical
democracy to as wide an audience as possible. In the original choral conception, it is
doubtful whether this could be maintained, as the restricted orchestration, a cappella
difficulty, extreme intricacy of vocal writing and more literal realisation of democratic
objectives would no doubt have a severe impact on its ability to be performed and received
in the same positive manner. The act of orchestrating the *Marching Song* can be viewed as a

---

131 Also including *Tribute to Foster, The Bride’s Tragedy* and *Thanksgiving Song*. 
compromise on Grainger’s part, whether coincidental or calculated, to help achieve the prominence it did.

As this chapter has observed, the *Marching Song of Democracy* occupies a unique position in Grainger’s repertoire. Of his early works, it was originally intended to be the most ambitious of his compositional projects, but deflected into a more conventional format to make it more palatable to audiences – a very rare concession on his part. Ultimately the *Marching Song* became a work associated with Grainger the conductor, programmed on the occasion of his presence in large-scale concerts, and most frequently at his urging. The work’s reception history is complex and demonstrates its general acceptance by the US public where it enjoyed a frequent performance history throughout much of his adult life. More significantly, it was evidently the work Grainger was most sensitive about presenting to Australia, his concerns stemming from his doubts in its early years of composition and later heightened through numerous reviews, which ranged from dismissive to profoundly challenging. In view of recent reactions to Australian performances, Grainger’s statement – “I do not think the time is ripe for presenting them yet”\(^{132}\) – still holds for its status today.

---

\(^{132}\) Percy Grainger to William James, 28 September, 1951, National Archives of Australia.
Chapter 3
Assembling a Comparative Corpus

Undertaking an extensive analysis to highlight the exceptional nature of the Marching Song sketches firstly required gathering a body of works for meaningful comparison of their characteristics. This chapter identifies the selected works and outlines the selection process, background and characteristics of each major work involved in this dissertation (although the Marching Song sketches were mainly discussed previously). Further, it provides an initial glimpse into the polyphonic textures through the intervallic representations of each work, serving as an important foundation, which the subsequent analysis aims to illuminate. Overall, the quantity of works is relatively small compared to a conventional computational musicology, typically numbering in the thousands. However, the processes and results may serve in this light as a series of pilot studies, warranting further investigation that draws on a much broader and objective array of works.

The musical range of these pieces covers a diverse spectrum across multiple musical elements: tonal to atonal, and from early 17th century music to the graphic notation of Grainger’s 1935-37 Free Music pieces. Yet as empirical musicologist David Huron observed: “not all polyphonic repertoires provide a suitable oeuvre from which to extract sample works for analysis”¹ due to instrumental idiosyncrasies. For this reason, apart from the Free Music pieces, selections were confined to the homogenous mediums of choral and keyboard music, where the voices were “in principle, relatively free to traverse a substantial

pitch range.”

Further, the choice of works for this study varied slightly for each analysis depending on their suitability.

For the most part, the pieces were united by their polyphonic textures, enabling them to be analysed in terms of their polyphonic weft, postulated by Grainger to be “the determining factor of [a composer’s] work.” Grainger composed the majority of studied works, and most of these are scored for unaccompanied chorus. Other works, not necessarily by Grainger, were included for more specialised purposes. This was either to test for Grainger’s early imitative qualities, or to provide representations with both conventional and extreme outliers in order to create a broader frame of reference and allow a more accurate positioning of the sketches. Specific works, such as *The Gipsy’s Wedding Day,* were occasionally brought into the discussion when critically relevant but were not able to be involved in the general study due to the limitations of scope. Generally, the main corpus of this study consisted of Grainger’s choral/polyphonic music, selected due to their overt polyphonic complexity, such as extensive use of voice crossings and dense choral textures. The selected pieces fall into four main categories; Grainger’s early piano repertoire, his early compositions, his later (post-*Marching Song* sketches) choral compositions, and additional outlying works. The analysis aimed to uncover internal relationships within each of these groups, as well as between them.

In this chapter, each piece was graphed as intervallic representations, the result of preparing the data for analysis. For this process, each note in every studied work was converted to an integer based on the distance in semitones from an arbitrary tone; in this case A3 (A below middle C) was selected as the centre note (A3=0) and the voices were then

---

2 Ibid.
3 Grainger to Parker, 28 August, 1916, 11.
4 A relatively tame choral work.
compiled. To avoid affecting the data with notes of uneven duration, whenever one or more voices changed in pitch a new “event” was considered to have occurred. This effectively ignored the rhythmic durations in a piece instead marking all alterations in horizontal and vertical structure. Additionally, the intervals were grouped in what David Temperley terms a stream structure – “a grouping of the notes of a polyphonic texture into melodic lines.” The converted notes formed the raw data for this study and readily allowed the calculation of horizontal and vertical intervals between events, as well as allowing further manipulation as required. The two short, simplified examples below (Ex. 3.1 and 3.2) illustrate this process.

**Example 3.1: MS1, b.1-3**

![Musical Staff and Notes Diagram](image)

---


Example 3.2: Converted data for MS1, b.1-3

<table>
<thead>
<tr>
<th>Event No.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baritone</td>
<td>-7</td>
<td>-7</td>
<td>-7</td>
<td>-5</td>
<td>-2</td>
<td>-2</td>
<td>0</td>
<td>3</td>
<td>5</td>
<td>-2</td>
<td>-2</td>
<td>-5</td>
<td>-3</td>
<td>-7</td>
<td></td>
</tr>
<tr>
<td>Bass 2</td>
<td>X</td>
<td>-14</td>
<td>-9</td>
<td>-9</td>
<td>-10</td>
<td>-12</td>
<td>-14</td>
<td>-9</td>
<td>-10</td>
<td>-12</td>
<td>-12</td>
<td>-7</td>
<td>-10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For the intervallic representation, these values were strung together according to their vocal lines and colour-coded, generally with black for the lowest voice, and then with a red-to-blue spectrum for ascending voices. The lines represent the horizontal intervallic pathways for each voice and the vertical intervallic relationships between them.

3.1 Grainger’s Early Piano Repertoire

While the chief goal in the analysis was to consider the advanced qualities of the *Marching Song* in relation to Grainger’s future developments, a secondary thread was added to also consider its relationship to those in his past. What Pear and Gillies term the “long decrescendo of his life”\(^7\) is implicitly balanced by an initial szforzando - an extremely rapid transition from the remarkably conservative nature of his early compositions in Frankfurt to the discovery of his mature compositional voice. Grainger himself identified 1898-99 as the years where his “first mature orchestral compositions and chamber works”\(^8\) emerged, and between 1898 and 1901 Grainger commenced numerous works besides the *Marching Song* that he would eventually rank among his most valued compositions,\(^9\) including the *Hill-Songs*, *Kipling ‘Jungle Book’ Cycle*, and *English Dance*. With such a plethora of important works emerging around these years, by focusing on Grainger’s most ambitious

---
project within that same period, this investigation was ideally placed to measure his compositional development through the lens of polyphonic texture.

It is useful at this point to briefly survey the mediums Grainger was composing for in his student years. To this end, Table 3.1 categorises the pieces he composed between 1896 and 1902, according to *The New Percy Grainger Companion*.\(^\text{10}\) It indicates that the trajectory for Grainger’s preferred medium began with works for piano before 1898, broadened to include songs, chorus and ensemble pieces, and then shifted strongly and predominantly towards works for chorus between 1900-02. Indeed, broadening the scope slightly, almost half (43.3%) of all works Grainger started before 1905 involved choir. It is also noteworthy that the flurry of compositional activity between 1898 and 1901 was followed by a marked decline in quantity of compositions, presumably corresponding with his move to England and his embarking on a demanding career as a pianist. Therefore, in tracing Grainger’s compositional development, it is logical to commence with his music for keyboard and then turn towards his emerging output for choir.

**Table 3.1: Types of Works Composed by Grainger (1896-1902)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Keyboard/(s)</th>
<th>Voice/Piano</th>
<th>Unaccompanied Chorus</th>
<th>Accompanied Chorus</th>
<th>Ensemble/Orchestra</th>
<th>Total Works</th>
</tr>
</thead>
<tbody>
<tr>
<td>1896</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>1897</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>1898</td>
<td>6</td>
<td>5</td>
<td>5</td>
<td>1</td>
<td>7</td>
<td>24</td>
</tr>
<tr>
<td>1899</td>
<td>-</td>
<td>8</td>
<td>-</td>
<td>3</td>
<td>7</td>
<td>18</td>
</tr>
<tr>
<td>1900</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>1901</td>
<td>-</td>
<td>3</td>
<td>-</td>
<td>2</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>1902</td>
<td>-</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>10</td>
</tr>
</tbody>
</table>

Pianistic Precedent Hypothesis

The secondary hypothesis in this dissertation states that during Grainger’s early training in Frankfurt, his piano compositions closely mirrored the miniatures of other Romantic composers. The suggestion of such an imitative phase stemmed firstly from the authors own experience performing Grainger’s early piano works and the striking impression they made from an aural, stylistic and tactile aspect, strongly calling to mind pieces of Brahms and Schumann. Further research showed the author was not alone in this perception, which has been extensively noted by performers and musicologists alike. The impressions of derivation originate even from the years of composition, with Cyril Scott noting Grainger’s early “Handelian tendencies”11 – a view that Bird reinforces with his valuation of the early piano works as “very derivative and written in a sort of Bach/Handel/Mozart/Haydn pastiche.”12 Even Grainger would come to obliquely indicate the derivative tendencies of his “then Handel-like style of composition”13 when recalling the early Frankfurt years. However, their association with the Romantic miniature tradition is identified by Mellers, who states that Grainger’s four Klavierstücke (1898) “are in style a long way after the slighter piano pieces of Schumann and Brahms,”14 reinforced from a practical perspective when Thwaites remarks how the Rondo for two pianos (1897) “is clearly a Brahmsian effort.”15 It is important to note that Grainger never returned to work on these pieces, nor organised to have them published during his lifetime; ostensibly a result of not being ranked among his mature compositions. Several of these pieces have since been published and recently recorded but being obscure and tame pieces in an

11 Bird, 35.
12 Ibid., 33.
13 Ibid., 115.
14 Mellers, 11.
eclectic and dynamic composer’s output they rarely draw academic attention apart from the above observations, suggesting this quality is a major contributor to their frequent dismissal.

There is clearly a consensus, both explicit and tacit, that his early piano works represent Grainger at his most conventionally imitative, and therefore at his least idiosyncratic. It is precisely this unexceptional nature that is significant to this study. Given the importance of formative musical development, it was postulated that Grainger’s formal pianistic training in both Melbourne and Frankfurt had a dominating influence on his early compositional output. This led to two verifiable components: firstly, to confirm that his Frankfurt piano music was indeed conservative, in the sense that it can be situated well within musical boundaries exhibited by this repertoire; and secondly, that specific works from his piano repertoire could be demonstrated as having a similar textural profile. This provides the foundation upon which the transitional and mature works may be compared.

**Compositions of Repertoire Composers**

The first stage in identifying imitative characteristics was to establish a pianistic precedent: a small collection of romantic piano miniatures present during Grainger’s student years. This corpus necessitated the boundaries that the works were able to be either directly associated with him as a student pianist, or that he was likely to have been exposed to before or during his Frankfurt studies. As a further condition, where possible the selected composers would be those whose music resonated with him. More practically, there was an analytical need for the pieces to be polyphonic in nature, or at least able to be roughly separated into linear strands, to allow the various analytical systems to reflect and delineate the contrapuntal elements of the piece. The other major consideration was to
prioritise prominent composers who contributed to the polyphonic style and texture of piano music during the late 19th century. With these considerations in mind, the works chosen were:

*Träumerei*, from *Kinderszenen, Op.15, No.7* by Robert Schumann (1838)

*Prelude No.17: Twenty-Four Preludes, Op.28* by Frederic Chopin (1839)

*Andantino Serioso, No.4* from *Albumblätter Op.28* by Edvard Grieg (1878)

*Intermezzo No.2* from *Klavierstücke Op.119* by Johannes Brahms (1893)

It is not surprising to find a correlation between the pieces Grainger was performing as a young pianist and the salon-music medium and aesthetic observed in his own early works.\(^\text{16}\) In this vein, all of the chosen works were effectively miniatures that formed part of a wider collection. Two additional unifying features of the chosen composers is their significant and consistent piano output and that they, like the young Grainger, were united by admiration of J.S. Bach, a stylistic influence that prominently emerged in their music.\(^\text{17}\)

Before elaborating on these works individually, it is important to outline the intervallic representation process, as applicable to keyboard repertoire. Although these pieces were chosen in part due to the presence of polyphonic voices, there were often occasions when the texture became less clearly defined. This necessitated a consistent method to be in place regarding the translation of harmonically-focused keyboard writing into a linear format. The objective here was to choose a solution that provided the most logical and clearest interpretation of the music, with its validity confirmed at the later

\(^{16}\) Mellers, 11.

\(^{17}\) Reflected in tributes including Schumann’s *Six Fugues on B.A.C.H. Op.60*, and Brahms’s left-hand transcription of the Bach D Minor *Chaconne*. 
graphing stage. On occasion, several different interpretations were equally valid (or equally ambiguous); however, most data conformed to the established model below.

The first adaption necessary was a matter of naming protocol. While it was simple in choral scores to refer to the voices after their name in the score (such as Altos or 1st Lows), keyboard textures have no clearly defined labels for their lines. While they generally conformed to inner and outer voices, with the latter correlating to bass and soprano roles, these labels were deemed too inaccurate. Instead, for the keyboard works, the voice typically positioned lowest was labelled Voice 1, with subsequent voices incrementally higher.

While choral music often features the vocal forces temporarily dividing, it is always clear which lines were to split. In contrast, a characteristic of the studied keyboard writing was the temporary and linearly ambiguous voices appearing and disappearing, with no obligation on the composer’s part to relate new voices to established lines. This served to fill out the harmony, as marked with red arrows in bars three and four of Example 3.3, and it often proved difficult to ascertain to which voice these emergent lines belonged. In these instances, the systematic approach treated these as temporary divisions, and they were connected to the most appropriate established voice, selected either by the indicated stem directions or in more ambiguous cases, proximity.
Conversely, when divisions were clear but remained for extended periods, the question arose whether to classify them as a single line or as two independent voices that occasionally merged. For the purposes of this study, a simple 50% rule was applied, so that a line divided for the majority of the events was treated as two separate voices. However, throughout this study, divided lines were either well over or under this figure.

From the selected works, it was necessary to take into account the musical structure of the works, ignoring near-identical recapitulations to avoid unnecessary data duplication, and also omitting any substantial sections that disrupted the polyphonic texture of the music. This was particularly the case in the central Andantino grazioso section of the Brahms Intermezzo, which featured a less compatible arpeggio texture in the bass (Ex. 3.4).

Example 3.4: Brahms, Intermezzo, b.36-39

Example 3.3: Grieg, Andantino Serioso, b.1-4

As a result, the sample sizes were 122 events for the Grieg Andantino, 173 events for the Schumann Träumerei, 205 events for the Chopin Prelude, and 310 events for the Brahms Intermezzo. Although the wide spread of these event numbers was dependent partly on how long the music samples were in terms of bar numbers, the most influential factor was the internal rhythmic divisions, with the semiquaver-based Brahms Intermezzo constantly featuring sixteen events in a bar, while the sparse Grieg Andantino Serioso often only ranged between three and six.

**Schumann: Träumerei, Kinderscenen, Op.15, No.7 (1838)**

Schumann’s Träumerei was an easy choice, as it was a work well known to Grainger from his childhood piano training under Louis Pabst. He presented it at one of his earliest public appearances in Melbourne’s Masonic Hall in 1894, “given with an artistic sympathy not usually associated with such tender years.”²⁰ It marked the beginning of Grainger’s long association with Schumann’s works, with the Symphonic Etudes later becoming a stalwart feature of his recitals and recordings, beginning with his final Frankfurt student recital in December 1900.²¹ Although it is a repetitive miniature in terms of phrasing, Träumerei embodied Schumann’s presence in Grainger’s early repertoire and its sparse polyphonic strands were an excellent sample for this study.

---

²⁰ *The Argus*, 11 September, 1894.
²¹ “A Young Australian Pianist”, *The West Australian*, 19 January, 1901.
The piece contains four main lines with moderately frequent and regular divisions between all voices, excepting the highest (Voice 4). It exhibits clear relationships between neighbouring voices, preferring similar motion to parallel motion. As such, the general contour of the work is echoed in each individual strand, following the peaks (event 40) and troughs (event 90) faithfully. The repetitive thematic content and structure of the work can be clearly observed, with the six related phrases [A A’ B B’ A’’] creating a ternary form, with the theme (Ex. 3.5) defining the contour as a steep ascension followed by a more gradual jagged descent.

Example 3.5: *Träumerei* theme, b.1-4

---

The widest distances occur most often between outer voices and inner parts; the former also contain the widest tessitura, leaving the inner voices within a more limited range. The piece features rare instances of voice crossing but, interestingly, is limited in its merging of the main voices usually only for very brief sections, preserving the distinct contours of the lines. Finally, there is considerably less static motion in Voice 4 than in the lower voices, only noticeably present at the peak of the phrase.

Chopin: Prelude No.17, Twenty-Four Preludes, Op.28 (1839)

The Prelude in Ab Major, No.17, Op.28, together with Grieg’s Norwegian Bridal Procession, was also suggested to the young Grainger by Pabst between 1893-94,\(^{23}\) causing the twelve year old to state: “I saw his artistic taste was not reliable, if he could approve also of this Prelude,”\(^{24}\) causing Pabst to “loose caste”\(^{25}\) in Grainger’s eyes. However, Grainger later noted in his copy of the score that the prelude was “fingered and adapted for my small hands by Pabst, & marked P at end by him, showing he had taught it to me”\(^{26}\) and indicated that, despite his initial opinion, it became part of a growing permanent repertoire that would eventually be recorded by him on two occasions in 1918 and 1926. There is little doubt of the importance of Chopin in Grainger’s piano repertoire, as was ostensibly the case with a large swathe of touring pianists of the age. Like Schumann, Chopin pervaded both concerts and recordings, both in large and small forms, including the Sonatas, Scherzos,

\(^{23}\) Percy Grainger, quoted in Phil Clifford, Percy Grainger Music Collection Part Two: Grainger’s Collection of Music by Other Composers, (Melbourne: University of Melbourne, 1983), 36.

\(^{24}\) Ibid.

\(^{25}\) Ibid.

\(^{26}\) Ibid.
Etudes, and the Polonaise Op.53. Prelude No.17, as one of the first and longest maintained Chopin works in his output is also a strong candidate for miniature influence.

**Figure 3.2: Intervallic Representation of Prelude No.17**

As is evident in Figure 3.2, Prelude No.17 is a vertically orientated piece, with its harmonically driven texture, as shown in Example 3.6. As a result, all the inner voices regularly feature prolonged periods of static, clear relationships of similar and parallel motion between neighbouring voices exist and, like the Schumann, the contour of each voice is reminiscent of the whole, with the exception of the leaping bass line.

---

The structure is also highly evident with an [A A B C] form, and the closing section shows Chopin using a notably less active texture to serve as a contrasting coda. There is continual presence of most voices, with the inner voices providing evenly spaced triadic or seventh harmonies throughout. The resultant space in this vertically conceived music between the lines creates extremely limited merging, and total avoidance of voice crossing. While the outer voices oscillate with some freedom, generally the inner voices smoothly shift around an extremely limited range.

**Grieg: Andantino Serioso, Albumblätter Op.28, No.4 (1878)**

The inclusion of a work by Edvard Grieg demanded a more challenging selection process, as no firm evidence of Grainger’s serious study of Grieg was found either in Melbourne or in the early-to-mid stages of his Frankfurt years. The clearest indicator of this was Pabst’s disparaged suggestion of learning the *Norwegian Bridal Procession* mentioned above, a work that would remain tellingly absent from Grainger’s music collection, unlike the Chopin Prelude. While in Frankfurt, Grainger’s opinion of Grieg changed after a more gradual period of exposure by Cyril Scott (*Ballade Op.24*) in 1897 and Herman Sandby (Norwegian Folk Songs, Op. 66) in 1899, which altered his opinion sufficiently to include

---

Grieg among Bach, Brahms and Wagner “in the firmament of [his] compositional stars.”

This would later develop further with Grainger’s later and well-documented association with Grieg, and subsequent authoritative interpretations of his Piano Concerto in A minor, op.16. Despite his dislike, there is ample evidence in his own recollections to suggest Grainger’s immersion and familiarity with the piano works of Grieg prior to 1897:

I heard a great deal of Grieg, played by my mother and by our dear friend R. Hamilton Russell … Indeed my mother played more Grieg than any other music around the years 1888-1895.

Examining the music collections of Rose Grainger and Robert Hamilton Russell, the Albumblätter Op.28 appears in both, with Rose’s copy pertaining to the ‘Mother’s Grieg books/Killalah. Etc. before Germany’ category. From a polyphonic perspective, Andantino Serioso, No.4 of the Albumblätter is the most suitable for analysis and serves as a calculated representative of a Grieg miniature that Grainger may have been familiar with. Conversely, the work’s absence from the list of Grieg compositions, which Grainger was “specifically concerned to promote in his essays and lectures,” indicates it was a piece from the pre-admiration years when Grieg did not yet resonate with him.

---

29 Bird, 115.
31 Bird, 115.
While repetition of transposed thematic material is occasionally evident (such as at events 40-59 and 60-79), the most noticeable structural attribute of this piece is its expansion from a narrow high register to a lower and broader range, with the lowest voice dividing into conventional octaves. The upper voice appears less static than the others, suggesting its melodic role, while the bass contains the abrupt leaps that are similar in characteristic to the Chopin. Similar motions between the close inner voices are frequent, and conversely the outer voices appear more isolated. Voice crossing does not occur and merging of voices is almost always momentary, but significantly it unifies up to four of the central voices at a time.


Brahms does not appear to feature as a composer Grainger studied during his Melbourne years, with scores of the late piano works Fantasias op. 116 and Klavierstücke
op. 119 (printed in 1897) only recently composed and acquired while in Frankfurt. However, copies of both these works and also the Intermezzi op. 117 (all published c. 1892-1893) all appear in the collection of Robert Hamilton Russell\textsuperscript{34} – a collection dominated by Bach, Brahms, Grieg, Chopin and Schumann, and remarkably similar to Grainger’s own preference in piano music, although it is evident that some of these scores were gifts from Grainger at a later date. The choice of influential works for this study was narrowed in light of Grainger’s graduating recital at Frankfurt, where he performed Brahms’ Intermezzo Op.116, No.6, Intermezzo Op. 117, No.1 and Intermezzo Op. 119, No.2. Of these works, the Op.119 No.2 was most suitable for analysis, and the respective publication dates of the Op. 119 copies makes it a viable candidate for a piece Grainger may have been familiar with while in Melbourne – possibly performed by Russell. Regardless of the inconclusiveness of this date, it is reasonable to assume a significant degree of auditory familiarity with the late piano works of Brahms before and during the Frankfurt years.

\textsuperscript{34} Clifford, Grainger’s Collection of Music by Other Composers, 298.
Several aspects make the Intermezzo No.2 distinctive compared to the earlier piano works already discussed, including the two related outer sections bookending a highly active trio. Additionally, the upper voice is highly fragmented and omitted from a large proportion of the work, and at times the overall range of the work expands (event 72) and contracts (event 153), breaking from the other pieces in their related contours. Other elements are more common; the inner voices have clear parallel and similar relationships, restricted tessituras, and are generally placed higher than the lowest voices. Like the Grieg, the lowest two voices are often parallel and generally more static than the others. Predictably, voice crossing does not occur and any merging is momentary.

The familiarity and long-lasting impact of these composers to Grainger is evident in the fact that all feature strongly and consistently throughout his commercial recordings. Taking for example the Complete 78-rpm Solo Recordings (1908-1945) of Percy Grainger.\(^{35}\)

\(^{35}\) Percy Grainger: The Complete 78-rpm Solo Recordings.
reveals the predominance of the four composers in his repertoire: Schumann, Chopin, Brahms and Grieg. Together they account for over a third (34%) of the 79 works presented, with the remainder belonging to Grainger and other composers.\textsuperscript{36} However, from a timing perspective the penchant Grainger had for recording the large-scale works of just these four composers translates into approximately 189 minutes of the 390 minutes shared between the five discs - almost half (48%) the total recording timing. From this it may be inferred that, combined, these romantic composers had a deep and long-lasting pianistic impact on Grainger’s practice, stretching consistently from his earliest training to the peak of his performance and recording days as a world-class pianist.

In a nutshell, it is almost beyond doubt that the young Grainger was familiar with the music of these four composers before leaving Melbourne for Frankfurt, and certainly had experience playing the selected Schumann and Chopin works. Later, throughout his studies in Frankfurt from 1895-1900, Grainger definitely played numerous works by most of these composers, due to his focus on the “standard piano literature.”\textsuperscript{37} Reflecting on these choices as a whole, by the time of Grainger’s graduating Hochschule recital on 6 December, 1900, his repertoire contained multiple works by Schumann, Chopin and Brahms, and he was about to further explore his admiration for Grieg. As the youngest and only active composer during these years, Grieg dominated the repertoire of Grainger’s closest musical mentors (his mother and Hamilton Russell) and had earned the advocacy of Grainger’s peers. For the purposes of this study, all the works discussed above are held as being representative of a piano miniature tradition that formed the backdrop of Grainger’s

\textsuperscript{36} Furthermore, if the scope here is widened to include composers from what might be termed the ‘standard’ canon (Schumann, Chopin, Brahms, Grieg, Debussy, Tchaikovsky, Handel, and Liszt), it is evident that over half (54.4%) of Grainger’s recorded repertoire was indeed dedicated to mainstream composers.

\textsuperscript{37} Slattery, 14.
fledgling piano development, and a potential basis of textural inspiration for his Frankfurt compositional efforts.

3.2 Early Compositions of Percy Grainger

Having established a foundation of works by pertinent composers, the next category to be discussed includes youthful pieces Grainger composed or commenced while still in Frankfurt, most significantly the two Marching Song sketches. Two additional works were sourced: Andante Con Moto (1897), representing the imitative miniature style of Grainger’s early compositions, and the more substantial At Twilight, mostly sketched for unaccompanied chorus in 1900. They were selected with the aim of tracing a pathway from the conservative polyphony of Grainger’s piano repertoire to the highly innovative sketches.

Grainger: Andante Con Moto (1897)

Grainger’s early compositional efforts were destined to be piano works, due to his overwhelming predilection for the medium. Potential candidates for this study included Peace, Saxon Twi-Play, the four Klavierstücke, Rondo for two pianos, and Andante Con Moto. Certain pieces were unsuitable for intervalllic analysis, due to either the high degree of filigree and use of relatively extreme tessituras (for instance the Klavierstücke) or conversely a lack of polyphonic movement (Peace). From the limited pool, Andante Con Moto was ultimately selected due to its compositional date marking it as the first piece for solo piano that Grainger wrote while in Frankfurt and the year before the flurry of compositional activity in 1898 – the attributed year that he produced his first mature
works.\textsuperscript{38} It was also well suited to the analysis, featuring moderate registers and clear chorale-like part-writing that balanced vertical and horizontal dimensions. This readily enabled its comparison not only to Grainger’s subsequent choral works, but also the keyboard miniatures of other composers.

**Figure 3.5: Intervallic Representation of Andante Con Moto**

Many characteristics evident in *Andante Con Moto* (Figure 3.5) have clear precedents in the previous works already discussed. Following the observed conventions, Voice 1 is significantly spaced apart from the upper voices, and is more static, employing a pedal point at times. Further, it is occasionally doubled at the octave, while also containing the widest intervallic leaps. An [A B A’] structure is clearly evident marked in the central section by greater inner voice activity involving parallel thirds and restricted tessituras compared to the outer parts. The voices share the same generalised contour, rarely merge

\textsuperscript{38} Percy Grainger, “Compositional Life of Percy Aldridge Grainger,” xx.
or diverge, and never cross. These qualities are shared to a significant extent with the pieces in early piano repertoire corpus outlined above.

**Grainger: At Twilight (1900)**

Seeking evidence of a transition in Grainger’s rapid development, the selection process aimed for a piece that was somewhere between the conventional piano writing and the extreme polyphonic characteristics of the *Marching Song* sketches. As discussed earlier, the student piano works (even those from 1898) were still highly imitative in nature. Orchestral, chamber or voice and piano pieces were generally unsuitable for analysis due to the instrumental idiosyncrasies. Therefore, unaccompanied choir – the same homogenous medium as the *Marching Song* – was deemed the most appropriate, particularly when involving a large number of vocal lines. As Table 3.1 above showed, nine choral works were commenced between 1898 and 1900, however several of these were folk music settings (*Mo Nighean Dubh*), for men’s chorus only (*Lukannon*) or too simplistic or brief to be statistically useful (*Tiger-Tiger*). Satisfying all requirements, *At Twilight* was a convincing choice as a substantial and original choral work that was ideally positioned to potentially demonstrate a shift towards the polyphonically ambitious. Although it was composed in two stages during 1900 and 1908, over half of the work was “sketched Oct (or before) 1900, in Frankfurt,” creating the two outer sections and crystallising many of its textural aspects. A critical difference between it and the *Marching Song* is the lyric content, causing its classification as a text setting rather than for wordless choir. This created limitations on the work, both to “ensure easy intelligibility” such as setting words “in the region of the voice

---

where they are easiest to pronounce,“41 but also from a structural perspective with Grainger remarking: “once my text is decided upon I give myself blindly to its dictations.”42

Figure 3.6: Intervalic Representation of At Twilight

As is readily evident in Figure 3.6, many significant changes divide At Twilight from the piano works observed previously. The foremost symptom is the sharp increase in polyphonic complexity, with the first substantial instances of voice crossing, and frequent merging and diverging between different voice types. This is taken to the extreme in the tenor solo, which is mainly a composite line of the other voices, alternating its unison with every voice but the Lows. A significant increase in voice independence can also be observed; although there are temporarily similar relationships, the vocal contours of each line tend to meander, and their increased proximity causes the aforementioned clashes, forming a precursor to the free polyphony that Grainger would aim for in his later music. Additionally,

41 Ibid.
42 Ibid.
the inner voices occupy much wider tessituras and drift regularly between the extremes, giving the impression of superimposed melodic lines rather than subservient accompaniment. However, some factors do still connect *At Twilight* to the piano works. The Lows, for instance, have the same long stretches of static motion, and double on occasion, creating a similar effect to left hand octaves. They are also noticeably separated from the upper voices and undertake wide and abrupt leaps as conventionally expected. Also, despite the increase in complexity, Grainger does still maintain a general vocal hierarchy for lengthy durations in the work, such as at the opening, where the normal low to high order is maintained with sizeable gaps between the voices. This particular blend of characteristics makes *At Twilight* an excellent representation of a transitional work through which aspects of Grainger’s rapid compositional development and *Marching Song* ambitions may be observed and anticipated.

**Grainger: Marching Song of Democracy Sketches**

The central focus of this dissertation, the *Marching Song of Democracy* sketches represent Grainger at his most polyphonically ambitious. Although discussed in detail in the previous chapters, the intervallic representations of both sketches are included here for reference and the sheer polyphonic complexity can be readily observed in both sketches. Due to the large size of MS2, it has been spread over two graphs.
Figure 3.7: Intervallic Representation of MS1 (1901-2)

Figure 3.8: Intervallic Representation of MS2 (1901), Events 1-230
Quantified in the later analysis, the complexity of these graphs approaches similar levels to randomly generated music, only limited by its adherence to Western notation.

Aside from the conservative opening of MS2, the voice crossing observations made in *At Twilight* are eclipsed here, with near-total independence, and lines frequently following their own paths with no regard for its neighbours. As would become analytically problematic, the high levels of merging and diverging are complicated by the removal and reintroduction of vocal lines on a regular basis, creating an ever-changing blend of voice types and a severely blurred sense of vocal hierarchy.

This is further enhanced as both sketches share a much greater number of voices and multiple instances of the same voice types. That said, MS1 is the freer of the two, with no discernible patterns or repetitions, while MS2 gradually develops into its complicated texture from a sparse regulated opening, and accompaniment figures (events 1-97) not becoming significantly polyphonic until the pedal point in the High men’s part shifts at event
Even after this point, thematic repetition is still evident despite its complexity as witnessed in the canon entries of the bass lines (events 286-342). The extremely linear style of composition in these sketches, particularly in a homogenous ensemble such as a large chorus, was unmatched in any other Grainger work. From these initial observations they show evidence of democratic and free music principles. The musical outcome in these sketches is determined by the overall result of various competing constituents, achieving Grainger’s musical creed of each voice “enjoy[ing] equal importance and prominence.”

Grainger knew such a texture would be technically demanding on vocalists. To resolve this, he immediately followed his thoughts on “Marching Songs” in Methods of Teaching and Other Things, with a section detailing his ideas for a “Pitch Guide” instrument.

I have in mind a little mechanical affair for use throughout choruses for prompting hard entries and preventing sinking or raising ... It will consist of a hollow, hole bored tube with a syringe-like airbag at one end, which ... will get out of the tube the 12 [half]-tones of the chromatic scale. The sound omitted to be so faint as not to be hearable at any farness ... This little pocket-sized contrivance should open up altogether new possibilities of interval-succeessions, key changes and so forth, and ensure always-to-be-relied-upon trueness of intonation.

Such a device was conceived as an attempt at overcoming the demands of the intensive choral singing planned in the Marching Song sketches. It was a method that would ostensibly allow individuals to retain their melodic independence within textures featuring solo lines and increased divisions resulting in proportionately fewer singers per section. The pitch guide was ultimately unrealised and Grainger would never write vocal music as polyphonically complex again, instead turning to instruments and machines to realise his compositional goals. Although these traits can be somewhat observed in his later published

---

43 Ibid., 375.
44 Grainger, Methods of Teaching and Other Things, 59-60.
choral music, which are still remarkably complex in their own right, it would not be until his Free Music pieces some three decades later that similar levels of independence would be achieved.

3.3 Later Compositions of Percy Grainger

A third category of studied Grainger works was that of published choral pieces composed after 1902, mostly for unaccompanied chorus. They were selected in order to measure whether polyphonic characteristics of the Marching Song sketches could be traced as an undercurrent in his later choral music, even if to a lesser extent. This group of pieces would stretch along a larger timeline of his career, aiming to indicate whether the sketches represented an isolated pinnacle of complexity, or whether he would reintroduce critical elements throughout his career and in the lead up to the Free Music pieces. This is complicated by the fact that Grainger was a composer of contrasts, at times perfectly willing to compose in conventional four-part harmony in works such as The Gipsy’s Wedding Day (1906) as shown in Figure 3.9. Because of the large and varied catalogue of works for unaccompanied chorus, it was necessary to restrict the study to more complex examples. Ultimately, the works selected for this purpose were Irish Tune and Australian Up-Country Song, largely due to their unaccompanied, wordless settings.
In terms of Grainger’s mature choral music, the unaccompanied chorus setting of the well-known *Irish Tune from County Derry* is perhaps the most iconic. It was also an excellent choice for analysis as it features dense textures containing numerous voice types. This results in frequent voice crossings, which in turn fosters the individualistic linear approach observed in the sketches. Importantly, like the *Marching Song of Democracy* it does not draw on a text, instead relying on wordless syllables. Grainger hoped this would allow the music to carry “its own special message to the soul – a message that is weakened if words (with their inevitably concrete thoughts, so different from the vague, cosmic suggestions of absolute music) are set to music.”

Therefore although the *Irish Tune* is based on an

---

established melody and its implicit tonality, the wordlessness of the music allowed the many voices to be composed free from the burden of text clarity.

**Figure 3.10: Intervallic Representation of *Irish Tune from County Derry***

The *Irish Tune* focuses most of its textural complexity and ambiguity on its inner voices, with the outer voices clearly defined for the most part. The tessituras appear closely matched and the contours are independent, unified by their mutual observance of the four main phrases of the music. Consistent with *At Twilight* and *The Gipsy’s Wedding Day*, the bass line is set sufficiently below the other voices so that while it appears to have a similar contour profile, it does not cross other voices with the same regularity.

**Grainger: *Australian Up-Country Song* (1928)**

*Australian Up-Country Song* was highly deserving of a place in this study for numerous reasons. Firstly, like the *Irish Tune* it is unaccompanied and texturally dense,
featuring extensive voice crossing and multiple voice types that are prone to division.

Further, it also shares the use of wordless syllables. It is an example of a relatively late and original Grainger work for chorus, and more importantly it is derived from the same “Up-Country Song” employed in *Colonial Song* and *The Gum-Sucker’s March* associated with “feelings aroused by thoughts of the scenery and people of [his] native land.”

Therefore, as well as the wordless element, it also possessed a kinship with the *Marching Song of Democracy*, both with its important aesthetic position in Grainger’s output, and its connections to the Australian people.

**Figure 3.11: Intervalllic Representation of Australian Up-Country Song**

The piece is divided evenly into two distinct textures, the entangled opening indicative of unstructured polyphony, followed abruptly by a chorale that maintains wide spaces between the threads. In the first half, there is very little evidence of relationships

---

between voices, although the dense homogenous texture consists of amalgamated threads caused by the continual merging of the voice types, making the tracking of any given vocal line challenging from an aural perspective. Otherwise the voices freely interweave, for instance the Many Highs tenor line is lower than the 2nd Lows for the first third of the section, and eventually match the higher divisi Women Lows line at event 49. In the second half this transition from a natural weft to a structured chorale texture coincides with the entry of the *Up-Country Tune* in the Women Highs. Accordingly, the activity of all the voices becomes more static, with the melodic 2nd Lows switching into a typical widely leaping bass line and the inner voices becoming restricted in their range limits. The piece as a whole gradually expands from a narrow band of approximately ten semitones to more than forty by the climax, but is also marked by a roughly maintained density. In other words, as the expansion continues, additional voices split off to fill in the widening gaps as evident from event 83, thereby ensuring that the dense texture is unaffected by the total range.

_Australian Up-Country Song_ represents the published extremes Grainger was able to take his wordless unaccompanied music for chorus from a polyphonic standpoint.

A secondary research question useful in justifying additional chorus music was developed, suggesting that Grainger would employ particularly complicated textural shifts as a climactic effect. To confirm this, it was necessary to select extracts from otherwise conventional choral works, usually a bridging section accompanied by a simultaneous adoption of wordless singing, enabling this freer form of counterpoint. The climaxes of *Brigg Fair* and _The Merry Wedding_ were selected for this purpose.
**Grainger: *Brigg Fair* Extract (1911)**

*Brigg Fair* is, for the most part, a fairly conventional unaccompanied chorus setting, with a tenor soloist supported by a humming chorale. However, the fourth verse allocates the text to the suddenly active chorus and then develops into a fortissimo eighteen bar wordless section, before returning to its original homophonic and pianissimo texture as shown in Figure 3.12.

**Figure 3.12: Intervalllic Representation of *Brigg Fair* (Verse Four)**

![Figure 3.12: Intervalllic Representation of *Brigg Fair* (Verse Four)](image)

Although it is the smallest excerpt studied, this particular section potentially contains the same significant characteristics of much more experimental works. In strong contrast to its surrounding verses, the inner voices of Verse Four break down into superimposed, independent contours, particularly when the solo tenor joins the chorus. Like the solo in *At Twilight*, this is a composite solo line, mainly following the Women Lows but also joining the Highs and Middles men’s voices. The conventional vocal hierarchy can be observed at both
ends of this extract but breaks down in the centre, framing the free polyphony as a means of heightened musical expression directly enabled through the absence of words. This creates a hybrid instance of Grainger “practising both forms of vocality – the worded and the wordless.”47

Grainger: The Merry Wedding Extract (1915)

The Merry Wedding is unique among the chosen extracts as it is accompanied, set for chorus and orchestra, and retains the use of a text throughout. Although the refrains of the Faeroe Island bridal dance are polyphonically uneventful, the verses deviate significantly from Grainger’s text-setting objective of “the same word being sung simultaneously in all parts.”48 Although coherency of the text suffers as a result, this allows the same remarkable freedom of setting as with the wordless pieces. Growing more complex throughout the piece, the fifth and final verse selected for this study (b.268-328) erupts in a complex array of exposed soloist activity later reinforced by the main chorus, and the subservient role of the orchestra affords the vocal parts a similar level of subtlety and complexity as the unaccompanied works.

48 Grainger, Grainger on Music, 19.
As can be readily seen in Figure 3.13, the clashing soloist lines promote aspects more in common with the *Marching Song* sketches than the other Grainger works. Most notably, the frequent interjections and exits of various vocal lines disrupt any sense of a consistent ensemble, presenting the numerous voices with nearly equal prominence. The melodic nature of all voice parts is further enhanced by the extremely wide tessituras of all vocal parts, which overlap between even the highest and lowest voices. Overall, this verse presents another clear example of unrestrained polyphony being used to great climactic effect.

### 3.4 Additional Outlying Works

Several additional works were included in this study for the purpose of reference as outliers. Although they could not always be factored into the analysis due to their specific nature, they served as examples of extreme chromaticism, atonality and most importantly
as Grainger’s realisations of “free music.” This category consisted of Grainger’s two Free Music pieces (No. 1 and No. 2), Max Reger’s Fugue, from Neun Stücke für die Orgel, Op.129, No.2 and Arnold Schoenberg’s Klavierstücke Op.11, No.1, with the latter two works were drawn from Dmitri Tymoczko’s corpus outlined in A Geometry of Music. Additionally, at times it was necessary to create “randomised pieces” that were similarly polyphonic, while not works as such, they were realistically contoured and adhered to the vocal limitations observed in the Marching Song sketches. The data gleaned from such samples were particularly useful in comparing Grainger’s extreme part-writing to that of the nonsensical, asking whether the sketches were equivalent to music that had been composed at random. Throughout the analysis, drawing on these outlying works meaningfully positioned the Marching Song sketches by indicating whether the latter approached, matched, or exceeded the various qualities the former represented.

Grainger: Free Music No.1 and No.2 (1934-5)

The two Free Music pieces are also included in this study where possible, being what Grainger termed the “only music of mine to which I attach importance,” and the realisation of music that aimed to achieve “the irregularity, the formlessness and the unforeknowableness of nature.” As the pilot studies became more refined and detected radical characteristics within the Marching Song sketches, it became essential to determine what extent to which they could also be found in his later experiments. However, being graphically notated as pitch and dynamic lines on graph paper presented an interesting

---

50 Ibid., 375.
51 Ibid.
challenge both in terms of intervallic quantification of the music and analytical comparison between the conventionally notated works.

Before analysis was possible, several technical questions needed to be addressed. The first question – how the graphical linear score, with its continuous and ambiguous lines, could be translated into meaningful data. Effectively, there were no rounded values either horizontally (time) or vertically (pitch). This made direct application of the previous system, which focused on changes of interval to signify new events, technically impossible. The horizontal measurements therefore needed to be determined by an arbitrary and constant increment that provided an accurate representation of the score without needlessly providing an infinite array of data points. As both Free Music scores were written on grid squares, Grainger grouped ten of these squares into ‘bars’ labelled at the top of the score. For the time/distance component, a practical division was determined to be every five squares, turning the 142 ‘bar’ Free Music No.2 into 284 data points, a comparable sample size to the other studied works and able to capture most significant motions.\footnote{It does prove to be less accurate for the rapid oscillations in two voices of bars 65-67 but otherwise was able to track the generally much slower contours effectively.}

A corresponding issue was raised by the microtonal implications of the vertical score aspect, dividing the semitone into a continuous pitch spectrum. Quantifying this from the surviving black and white score replicas with perfect accuracy was unfeasible, particularly when the ink used for some voices was almost a quarter tone thick in places. To this end, the most workable approximation presented itself again via the grid, as every two squares vertically represented a semitone. Therefore, at every half-bar horizontal increment, the pitch could be rounded to the nearest gridline, indicating a quarter tone and allowing the octave to be divided into 24 points.
While this combined method allowed for the creation of vertical and horizontal data, it contained inherent flaws that made direct comparison between the Free Music pieces and other works challenging. Most critically, the choice of an arbitrary time increment biased the data towards slower and static lines, normally condensed by observing more significant changes in the vertical structure, while rare periods of high activity were not always reflected in perfect detail. Secondly, the doubling of the number of measured pitch classes often made the utilized analytical systems redundant. This either required the pieces to be further approximated into semitones to process the data, or observed comparatively rather than precisely calculated if quarter tones were retained. These contingencies are context-dependent and discussed in later chapters as they occur.

The black and white replications of the Free Music scores presented, at times, another challenge – the voicing. Initially created in colour, the only remaining indication of this is the various grey shades of most voices with one of the lower voices being a dotted line. The four voices of Free Music No.1 were easy to follow regardless of this indicator loss, and for the first section of Free Music No.2 this was not an issue either, as the six voices were clearly paired off. However, in the second section when voices enter and later merge at similar pitches, being able to determine if the analysis correctly attributed them was less certain, and had great implications for the freedom of contour and voice crossing analysis. Specifically, Voices B and D were the most indeterminate, being ambiguous in their close shading and also appearing swapped to the greatest extent; the other voices follow a pattern that sees them roughly within a register. However, it was determined for this study that it was against the free music principles to assume Grainger was making register confinements deliberately and so the most apparent interpretation, that of register exchange, was used.
Examination of the *Free Music* pieces called for testing how well Grainger’s aesthetics translated into practice, asking whether the voices were functionally independent from arbitrary, archaic structure. By quantifying the exhibited behaviours and how they relate to the overall concept, it would be possible to conclude how this was similarly achieved (or not) in the *Marching Song* sketches.

**Grainger: *Free Music No.1***

*Free Music No.1* is by far the simpler of the two works with only four voices, is short, and almost half the piece in one- and two-part textures, which provides limited vertical data and voice crossing. Occupying a much higher register than the other studied works, three of the voices feature limited intervallic ranges, with the late-entering fourth and lowest voice containing faster ascending and descending motions in a repetitive manner. Despite its simplicity, the meandering lines are liberated from structural patterns, and effectively achieve a textural goal Grainger set when he posed the question: “should not the outlines of musical voices, in their normal condition, resemble the outlines of mountain ranges, each independent & individualistic in itself, but together forming block effects of majesty & complexity?” The mountain range appearance of *Free Music No.1* is readily apparent.

---

Grainger: *Free Music No.2*

Although a much longer and more complicated example, in contrast to *No.1, Free Music No.2* is a much more organised conception. While it commences in a similar fashion, the approximate pairing of the six voices into parallel motions creates a co-dependence that is unexpected in a “free music” work. Similarly, the overall form of the work is quite organised in a visual sense, with Grainger shaping the music by means of expansion and contraction to create structures of sound. Regardless of these characteristics, the close proximity, overlap and greater number of voices makes the texture more like the *Marching Song* sketches. Due to this, *Free Music No.2* is often examined more regularly in the subsequent analysis.
Reger: Stücke No.2: Fugue, Neun Stücke für die Orgel, Op.129

The second piece in Reger’s Neun Stücke für die Orgel, Op.129 (1913) is a highly chromatic fugue. Analysed in Tymoczko’s Geometry of Music, it was used by the author as a post-Wagnerian example that showed “relatively little difference” in its level of chromaticism when compared to “the fully atonal music of Schoenberg.” This makes for an exceptional instance of complicated polyphony that could be used to make meaningful comparisons when measuring chromaticism and pitch class circulation, and serves to contextualise Grainger’s 1901-02 ambitions within twentieth-century music traditions. It quickly proved to be a highly significant work of comparison, being at times similarly radical and at other times startlingly conservative compared to the sketches. It can best be

---

55 Ibid.
described as a civilised form of extreme chromaticism compared to Grainger’s untamed variety, adhering to ordered behaviours, such as the strict aversion to voice crossing, while simultaneously lying on the cusp of atonality with its near equal inclusion of all twelve tones.

**Figure 3.15: Intervallic Representation of Fugue, Op.129**

**Schoenberg: Klavierstücke No.1 from Drei Klavierstücke, Op.11**

The Klavierstücke, Op.11, No.1 (1909) was also an important work in Tymoczko’s *Geometry of Music*, as well as a well-known standard of twentieth century keyboard repertoire. Klavierstücke No.1 was included in this study to position the *Marching Song* sketches in light of Tymoczko’s findings, with particular reference to the fundamental tonal/atonal divide he explores between the Klavierstücke and the Reger Fugue. An atonal work, it is fundamentally organised in ways that separate it from the other studied works.
Most significantly, it is fundamentally not a polyphonic work and could not be meaningfully graphed in a similar linear fashion. This fact prevented its inclusion in much of the horizontally-focused analysis, and instead it featured primarily when vertical sonorities were being considered.

**Summary**

The works described in this chapter formed the core of the material drawn upon for this study. The selection, while necessarily omitting many other valid works, was carried out after much deliberation around the main objectives of the research, centred on the perceived exceptional nature of the *Marching Song* sketches. Tracing the rapid development of Grainger’s compositions in the lead up to the sketches was critical to determine the extent to which these were already evident in his writing, and secondarily to confirm the significant impression his piano repertoire made on his composing abilities.

Grainger’s later works allow evaluation of the *Marching Song* sketches’ impact on his later choral music, as it was important to understand how and when similar polyphonic qualities could be observed, whether to an increased extent later in his long career, or as part of a climactic musical effect. This is taken to its extreme in examining the relationship between the *Free Music* experiments and the *Marching Song*, which links the frustrated compositional objectives of the young Grainger with his most experienced, if limited, efforts. Finally, the inclusion of twentieth-century keyboard repertoire linked to Dmitri Tymoczko’s comparative study serves to connect the sketches to a wider analytical discourse.Outlined and graphed here, in subsequent chapters the discussed works are subject to a variety of more specialised analytical methods, aiming to better understand the implications of the *Marching Song* sketches in the context of Grainger’s output.
Chapter 4

Polyphonic Density

The sheer quantity and eclecticism of the required vocal parts is one of the most distinctive traits of Grainger’s chorus music. He rarely employs a conventional SATB chorus, and throughout his oeuvre one may encounter less common categories, such as baritones, contraltinos, and whistlers, in addition to frequent subdivisions of existing parts, sometimes with deliberate lopsidedness, for instance the “few highs” vs “many highs” divide of the tenor section in Australian Up-Country Song. Additionally, Grainger draws on unison chorus (Afterword), single-gendered chorus (Danny Deever), and even double chorus (Father and Daughter) leaving surprisingly few works explicitly for identical forces.¹ The complexity that often ensues from the ever-changing variations on the idea of “many-voicedness” nevertheless reaches its zenith in the Marching Song of Democracy sketches, with MS2 containing twenty-three independent vocal and whistling lines. The first stage of exploring how Grainger’s compositional process is affected by, and accommodates, this complexity required examining the resultant polyphonic density.

The subject of polyphonic density is effectively an aspect of texture, and almost as problematic to define. The Oxford Companion to Music describes density as “an informal measure of polyphonic complexity, chord content, or general sound”² and is astute in acknowledging its applicability to 20th century works;³ it is not uncommon to find authors using this generalised term in relation to the complex micropolyphony of Ligeti⁴ or the

¹ Although this is not to say that a choral ensemble cannot redistribute themselves in concert as required.
³ Ibid.
texturalist processes of Xenakis. Canadian theorist Wallace Berry provides a more quantifiable description that is largely adopted by this chapter: “the number of concurrent events (the thickness of the fabric) as well as the degree of ‘compression’ of events within a given intervalllic space.” This implies that to study density places a focus on the vertical dimension of texture. A sparse textural moment may have relatively few voices and large intervals between them, whereas a denser texture will compress numerous voices within a smaller space.

Calculating polyphonic density from the data already obtained in Chapter Three was a straightforward process, and ultimately can yield both qualitative and quantitative data. A work’s density can be viewed over time as a process or as a series of observable behaviours, as well as an overall statistical view. As such, interpretation of data from both perspectives is the objective of this chapter. It is structured in four main sections, beginning with an examination of the challenges presented by exploring density, and outlining the methodology used to approach it in the analysis. Following this, three analytical procedures were used; firstly, a series of linear representations of density and its factors (compass and interval numbers) were analysed from an observational perspective. This data was then further processed into a condensed state using the innovative Chernoff face method, and also represented as partial boxplots, allowing for a more quantified comparison between the various works. All main works outlined in Chapter Three were able to be considered due to the nature of density as an essential musical element.

---

4.1 Methodology for Calculating Density

There is considerable precedent in analysing density in music. Berry and E. Michael Harrington for instance have both developed related yet abstract systematic processes. While Harrington’s system is considerably more complex than Berry’s, aiming to “differentiate between degrees of consonance or dissonance” among other things, its nuances seemed somewhat overspecialized when attempting to make comparisons across thousands of different events, when a large number of these were in the same medium by the same composer. As a result, Berry’s more generalized concept of considering density lent itself more readily to the approach developed for the present study.

In terms of application to a music-based enquiry, the study of Eric Whitacre’s choral music undertaken by Andrew Larson provides a practical model, as it clearly aimed to quantify the “fluctuation typical of Whitacre’s music.” When dealing with textural density, Larson’s process simply considers the number of tones as the primary marker for density, something Harrington would likely disapprove of, “as aspects of register, compression, and chordal quality are not taken into account.” Berry, on the other hand, still acknowledges this as one of two important strands of density, which he terms the “density-number.” The other strand, “density-compression” is the final half of his definition: that density should also be perceived as the concentration of voices within a given space. For example, a four-part chorus singing notes contained within a perfect fifth will sound considerably denser than the same ensemble spread over two or three octaves. While Larson’s scope is relatively limited, applying his methods of interpreting the data and trends across numerous pieces

8 Harrington, 1.
9 Larson, 26.
10 Harrington, 1.
11 Berry, 185.
12 Ibid.
13 Ibid.
can be easily applied to the process outlined below, and proves equally useful in comparing a wide range of different music genres (specifically keyboard, choral and graphic notation). Therefore, Berry’s concepts and Larson’s large-scale deployment of a system formed this chapter’s foundation. Three aspects were derived from the source data and plotted for each of the pieces used in this study.

**Total Compass:** The distance from the highest to the lowest pitches in any given sonority, expressed in semitones. As an intervalllic distance devoid of specific register, the total compass is quite idiosyncratic to each piece of music and by itself is not necessarily useful unless a piece is particularly dependent on range-altering procedures; for instance, the gradual and dramatic expansion identified below in MS2 as a key structural element.

**Number of Tones/Intervals:** The number of distinct, non-unison tones in any given sonority, disregarding their actual pitch classes. Similar to Larson’s approach it is essential that the method ignore unisons as they do not affect the vertical sonority. The number of intervals between adjacent tones was found by subtracting one from the number of valid (non-unison) tones, as is evident in Figure 4.1, and thus the two parameters are closely linked. In the graphs of Figure 4.2, the number of tones are represented in order to differentiate between textures of zero and one tones (both containing no intervals). However, the number of intervals is used for calculating the density. Larson postulates that “graphs of Romantic and twentieth-century compositions would certainly show the tendency of varying the number of tones

---

14 “Tones” in this chapter are synonymous with “Notes” rather than referring to the two semitone interval.  
15 Larson, 13.
present more frequently than in earlier music."\textsuperscript{16} With such repertoire being the focus of this study, examining tone numbers provides interesting commentary in its own right.

\textbf{Density:} The ratio of semitones per interval, representing what Berry terms “density-compression.”\textsuperscript{17} It is a more accurate indication of density than merely counting tone numbers, as it takes the compass into account. For instance, while the density of two voices is equal to the distance between them, the inclusion of a third voice will halve this value as shown in Figure 4.1. It is calculated by the formula:

\[
\text{Density} = \frac{\text{Total Compass (Semitones)}}{\text{No. of Intervals}}
\]

As it represents an average number of semitones between intervals, it is important to note that \textit{smaller} values in this line indicate a \textit{denser} texture, with more tones inside a smaller range. As it is a ratio, not only does it describe specific and general density characteristics of the work in question, but also allows for comparison between other pieces. An idiosyncrasy emerged in the graphical representations, in that a single melodic line or moment of silence was regarded as having a density of zero, with no interval available for comparison. Yet as Larson notes: “zero is not technically a tonal density”\textsuperscript{18} and the value was excluded in subsequent calculations.

\textsuperscript{16} Larson, 25.
\textsuperscript{17} Berry, 188.
\textsuperscript{18} Larson, 14.
Each of these lines may be compared as averages or surveyed for notable features, such as isolated peaks or repetition. Similarly, observed relationships between the variables can also be informative. For instance, a work may exhibit a proportional relationship between its total range and the number of tones; adding more voices as the range expands outwards and thereby keeping the overall density constant. Likewise, if the number of tones remains constant, density will be entirely dictated by the overall compass of the piece. The plots featuring density and its factors are presented as Figures 4.2, A to P.
Figure 4.2A: Schumann Träumerei

Figure 4.2B: Chopin Prelude No.17
Figure 4.2C: Grieg Andantino Serioso

Figure 4.2D: Brahms Intermezzo Op.119, No.2
Figure 4.2E: Grainger *Andante Con Moto*

Figure 4.2F: Grainger *At Twilight*
Figure 4.2G: Grainger MS1

Figure 4.2H: Grainger MS2
Figure 4.2I: Grainger *Brigg Fair*

![Graph of Grainger *Brigg Fair*]

Figure 4.2J: Grainger *Irish Tune*

![Graph of Grainger *Irish Tune*]
Figure 4.2K: Grainger *The Merry Wedding*

Figure 4.2L: Grainger *Australian Up-Country Song*
Figure 4.2M: Grainger *Free Music No.1*

Figure 4.2N: Grainger *Free Music No.2*
Figure 4.2O: Reger Fugue, Op.129, No.2

Figure 4.2P: Schoenberg Klavierstücke, Op.11 No.1
4.2 Density Analysis

Great variety is readily evident in Figure 4.2, with each graph containing a unique profile, echoing the representations of Chapter Three. The four works from Grainger’s keyboard repertoire, shown in Figures 4.2 A to D, each appear quite distinct despite their superficial commonalities of being short, romantic works and sharing slightly higher ranges at the final cadences. However, deeper similarities may be observed on closer inspection, as these works all have similar characteristics, including plateaus of tone numbers, resulting in densities that follow the contour of the range, and ranges that reflect important structures within the music. The Brahms Intermezzo and Grieg Andantino Serioso both have visible ternary forms that contain contrast in each measured density aspect, most notably the central sections of constant voice numbers and restricted ranges. Other idiosyncratic observations can be deduced, for instance total compass is clearly an important structural factor in Träumerei, with a descending compass pattern and demarcated by moments of considerable sparseness which serve to divide each of the six phrases. The Chopin Prelude’s constant chord progressions make it something of an outlier from the other samples, with the examined aspects not linked with any structural features, although phrase repetition is evident at times. Unlike the other works, frequent six-voice chord texture ensures the density and voice numbers remain quite high as a matter of course, causing a resemblance to the Marching Song sketches statistically, while graphically remaining distinct. This echoes an important observation from Larson’s study: “though each graph has its own individual contour, [they] reveal the importance of textural variation.”

Comparing these features to Grainger’s early compositional efforts indicates a significant shift in his developing approach to density, particularly in terms of how it reflects structure. Grainger’s early keyboard work, Andante Con Moto, contains many of the same

19 Larson, 25.
broad features of the Brahms and Grieg; namely the compass contrasts outlining its ternary structure, phrase repetition, and a central section more stable in voice numbers. Also evident is the same trend of cadential expansion used in the final third of the work. From a density perspective, *Andante Con Moto* therefore has very little to distinguish it meaningfully from Grainger’s concurrent keyboard repertoire.

In contrast, the choral work *At Twilight* represents an abrupt change from a structure-density relationship despite the actual [A B A] structure of the work, which includes a text repetition of the opening verse. Compared to *Andante Con Moto*, the oscillation of range in *At Twilight* and the resultant density is considerably more erratic, and there is no overall directional trend evident as in the previous works. However, the number of tones is remarkably similar to the keyboard works, mainly varying between four and five voices with numerous plateaus of consistent voicing. Despite the seven substantial vocal parts set for this work, their frequent merging reflects a pianistic texture inhabiting the same region of relative sparseness. As a result, the density of this work is also mostly proportionate to its range, shown through the linked contours. The fact that *At Twilight* is a choral work, yet it only differs substantially from the keyboard works in its structural use of density, implies that a shift in compositional approach is the cause, rather than being directly affected by the change in medium.

The transitive position of *At Twilight* was reinforced when compared to both of the *Marching Song* sketches, which stripped away the remaining connections to the keyboard repertoire. As mentioned earlier, the major point of distinction from the earlier works – and a uniting feature of both sections – was the frequent oscillation of tone numbers and their generally higher levels, resulting in a noticeable reduction in space between voices; an important feature not yet evident in *At Twilight*. Furthermore, the proportional relationship may now be observed between range and tone numbers; as the space between outer voices
increases, Grainger becomes inclined to bring in or diverge additional voices, and conversely removes them when the texture is more condensed. This leads to a more consistent density in both pieces not as dependent on range for its contour.

Considering MS1 specifically, the resemblance to At Twilight is evident with direct structure being almost imperceptible. Instead, the compressions of compass notably respect a minimum level of between seventeen and nineteen semitones, which the music tends to frequently return to before expanding again. Although the total compass oscillates broadly as though reflecting musical phrases, consulting the sketch score and linear representation (Chapter Three) indicated that this is caused by the overlapping and gently undulating “mountain-range” contours of its constituent voices. This is frequently evident in passages such as in Example 4.1 and the extensive voice crossing is explored in greater detail in Chapter Six.

Example 4.1: MS1 b.10-13

In contrast to MS1, the use of compass in MS2 is an important structural element with its long-term gradual ascension to an impressive range. In this regard, the two sketches differ; MS1 indicates a somewhat rambling approach to density, where range is an undulating textural outcome, whereas MS2 was conceived as a linear goal – an unfolding trajectory expanding steadily over time. This finding is readily apparent from score analysis, with the high quantity of voices gradually brought into play and it has significant implications for understanding Grainger’s compositional intentions, as he had a projected
dramatic aim in MS2 that would eventually lead into the coda of the work as realised in the 1908 sketch. The relative aimlessness evident in the oscillating density of MS1 reinforces the hypothesis that it has more in common with a freely-composed experiment liberated from such concerns, observed in *Free Music No.1*.

The climactic use of density is an important trend present in the two wordless choral works, *Irish Tune* and *Australian Up-Country Song*. Both works feature moments of expansive compass, anticipated through a series of gradually expanding peaks, before winding down to more modest levels at the conclusion. Additionally, each work bears a strong resemblance to the *Marching Song* sketches. The *Irish Tune* is most similar to MS1, with its clearly defined minimum range tendencies, in this case between twelve and sixteen semitones. Despite the strophic nature and thematic repetition of the work, demarcated by moments of zero density, this does not translate into exact density repetition between any of the four phrases. Rather, like MS1, this suggests the constant variation of density and its factors are a method through which Grainger achieves compositional interest.

Likewise, *Australian Up-Country Song* follows the same long linear ascent as the second *Marching Song* section. The staggered range correlates highly to additional voice entries and subdivisions, building to peak at an impressive ten-voice chord. While *Australian Up-Country Song* demonstrates this relationship well, the effect can also be observed to a lesser extent in the *Irish Tune*, resulting in a sparser texture. The two choral extracts, *Brigg Fair* and *The Merry Wedding*, are not particularly informative from a density viewpoint, largely due to their smaller sample size and not being representative of full works. During these short passages, the voice numbers generally remain relatively stable and so the density is almost entirely dependent on range, albeit with the dimensions similar to the full choral works.
Assessing density with this method emphasised the atypical traits in the Free Music pieces, although both contain characteristics related to MS2. Free Music No.1, despite its limited range, shares the same frequent compass oscillations, despite very stable tone numbers. On a deeper level, Free Music No.2 contains the same gradual expansion of range and tones, most pronounced in the first half of the piece, as well as reaching the extreme maximum range limits evident in the MS2 and Schoenberg Klavierstücke. Due to the considerable symmetry of its graphic notation, the range contour resembles the upper half of the linear interpretation. However, Free Music No.2 is clearly an extreme case, with its dramatic range and density oscillations contrasting against the frequent tone number plateaus caused by its linear notation.

The Reger Fugue and Schoenberg Klavierstücke Op.11, No.1 were included as outliers in contrast to the romantic keyboard works. Indeed, the two works are substantially different in their behaviours, both compared to each other and the rest of the studied music. In the Reger, the fugal structure is highly evident, with the introduction of stable voices leading to a density more proportionate to range than any other observed. The Klavierstücke, as a representative atonal keyboard work, shows massive ranges and extremely fast shifts between them. While the lack of voice-leading meant it was highly unsuitable for horizontal interpretation in subsequent chapters, the present methods dealt only with vertical tone numbers and compass, allowing density to be judged without issue. These two works serve in the more quantified density analysis below as alternative keyboard works, helping to distinguish between medium-specific and stylistic traits.
4.3 Chernoff Face Representations

Having represented and observed density and its factors (compass and interval numbers) through graphical means, more quantitative methods were required to make comparisons between the wide array of pieces. To this end, Chernoff faces were utilised. Chernoff faces are a method developed by Herman Chernoff for presenting multivariate data (data with many variables, that may or may not be directly linked) in cartoon human face form.\(^\text{20}\) By assigning data values to the various face dimensions, they enable efficient comparison through capitalizing on the innate ability of humans to rapidly evaluate facial profiles. The benefits are twofold; firstly, they allow many pieces to be presented simultaneously, each containing a large amount of data pertaining to the music. Secondly, they require very little technical knowledge to comprehend, and enable the mathematical layperson to grasp the method intuitively. Not only are commonalities and points of departure readily visible, but a sense of magnitude is also imparted, which places Chernoff faces at a unique advantage when addressing a musical audience on statistical matters.

Yet, as musicologist and statistician Jan Beran discovered in applying them to music: “the difficulties in finding an objective interpretation”\(^\text{21}\) are their main weakness. The most challenging element in creating Chernoff faces is their subjectivity and the fact that the end result greatly “depends on the order of the variables.”\(^\text{22}\) For instance, an outlying parameter governing ear height could have less of a psychological effect on a viewer than if it affected mouth shape.\(^\text{23}\)

To create the Chernoff faces using R (Version 3.3.2), up to fifteen parameters were allowed, which were based on the above density data. To utilize the maximum number of


\(^{21}\) Jan Beran, *Statistics in Musicology*, (Florida: Chapman and Hall, 2004), 64.

\(^{22}\) Ibid., 65.

\(^{23}\) Ibid., 64.
variables, each of the three dimensions explored above – density, compass and tone numbers\(^\text{24}\) – were broken into conventional box-plot points:

\[\text{[Minimum, Quartile 1, Median, Quartile 3, Maximum]}\]

This provided the fifteen parameters, however the question of designation remained. Most Chernoff parameters have two variables (height and width of facial features); however, hair, face and smile each have three variables. The three median values were designated to these three “special” parameters, combined with their respective first and third quartile values. The remaining facial features were determined by the various extremes as outlined in Figure 4.3 and quantified in Table 4.1. Colour was automatically generated by \(R\) as a result of each feature’s factors. This allowed for more rapid identification between works with similar dimensions in a given feature.

**Figure 4.3: Chernoff Face Feature Assignment**

\(^{24}\) Tone numbers were again used as opposed to interval numbers to differentiate between instances of zero and one tones.
Table 4.1: Parameter Values for Chernoff Face Generation

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Chernoff Face Element</th>
<th>Schumann Trümmerei</th>
<th>Chopin Prelude</th>
<th>Grieg Andantino</th>
<th>Brahms Intermezzo</th>
<th>Andante Con Moto</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compass Q1</td>
<td>Face Height</td>
<td>29.23</td>
<td>26.15</td>
<td>23.08</td>
<td>29.23</td>
<td>36.92</td>
</tr>
<tr>
<td>Compass Q3</td>
<td>Face Width</td>
<td>33.52</td>
<td>32.80</td>
<td>27.27</td>
<td>36.22</td>
<td>41.33</td>
</tr>
<tr>
<td>Compass Median</td>
<td>Face Shape</td>
<td>36.92</td>
<td>40.00</td>
<td>32.31</td>
<td>44.62</td>
<td>44.62</td>
</tr>
<tr>
<td>Compass Max</td>
<td>Eye Height</td>
<td>61.54</td>
<td>69.23</td>
<td>55.38</td>
<td>73.85</td>
<td>66.15</td>
</tr>
<tr>
<td>Compass Min</td>
<td>Eye Width</td>
<td>10.77</td>
<td>15.38</td>
<td>3.08</td>
<td>6.15</td>
<td>23.08</td>
</tr>
<tr>
<td>Density Q1</td>
<td>Hair Height</td>
<td>13.89</td>
<td>10.56</td>
<td>13.89</td>
<td>16.67</td>
<td>14.35</td>
</tr>
<tr>
<td>Density Q3</td>
<td>Hair Width</td>
<td>21.15</td>
<td>12.84</td>
<td>16.47</td>
<td>20.01</td>
<td>15.82</td>
</tr>
<tr>
<td>Density Median</td>
<td>Hair Style</td>
<td>22.22</td>
<td>15.00</td>
<td>18.17</td>
<td>23.82</td>
<td>16.67</td>
</tr>
<tr>
<td>Density Max</td>
<td>Nose Height</td>
<td>100.00</td>
<td>25.00</td>
<td>33.33</td>
<td>34.26</td>
<td>26.39</td>
</tr>
<tr>
<td>Density Min</td>
<td>Nose Width</td>
<td>8.33</td>
<td>7.78</td>
<td>5.56</td>
<td>8.33</td>
<td>9.03</td>
</tr>
<tr>
<td>Tone No. Q1</td>
<td>Mouth Height</td>
<td>33.33</td>
<td>41.67</td>
<td>33.33</td>
<td>33.33</td>
<td>33.33</td>
</tr>
<tr>
<td>Tone No. Q3</td>
<td>Mouth Width</td>
<td>35.17</td>
<td>46.80</td>
<td>32.59</td>
<td>35.33</td>
<td>39.86</td>
</tr>
<tr>
<td>Tone No. Median</td>
<td>Smile</td>
<td>41.67</td>
<td>50.00</td>
<td>33.33</td>
<td>41.67</td>
<td>41.67</td>
</tr>
<tr>
<td>Tone No. Max</td>
<td>Ear Height</td>
<td>58.33</td>
<td>58.33</td>
<td>50.00</td>
<td>50.00</td>
<td>66.67</td>
</tr>
<tr>
<td>Tone No. Min</td>
<td>Ear Width</td>
<td>8.33</td>
<td>33.33</td>
<td>8.33</td>
<td>0.00</td>
<td>25.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Chernoff Face Element</th>
<th>At Twilight</th>
<th>MS1</th>
<th>MS2</th>
<th>Brigg Fair</th>
<th>Irish Tune</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compass Q1</td>
<td>Face Height</td>
<td>33.85</td>
<td>33.85</td>
<td>29.23</td>
<td>24.62</td>
<td>29.23</td>
</tr>
<tr>
<td>Compass Q3</td>
<td>Face Width</td>
<td>38.60</td>
<td>40.33</td>
<td>40.30</td>
<td>29.57</td>
<td>34.27</td>
</tr>
<tr>
<td>Compass Median</td>
<td>Face Shape</td>
<td>44.62</td>
<td>47.69</td>
<td>50.77</td>
<td>35.38</td>
<td>40.00</td>
</tr>
<tr>
<td>Compass Max</td>
<td>Eye Height</td>
<td>63.08</td>
<td>63.08</td>
<td>83.08</td>
<td>52.31</td>
<td>61.54</td>
</tr>
<tr>
<td>Compass Min</td>
<td>Eye Width</td>
<td>9.23</td>
<td>3.08</td>
<td>10.77</td>
<td>12.31</td>
<td>18.46</td>
</tr>
<tr>
<td>Density Q1</td>
<td>Hair Height</td>
<td>13.30</td>
<td>12.04</td>
<td>11.67</td>
<td>11.81</td>
<td>13.89</td>
</tr>
<tr>
<td>Density Q3</td>
<td>Hair Width</td>
<td>15.79</td>
<td>14.07</td>
<td>13.60</td>
<td>14.76</td>
<td>16.38</td>
</tr>
<tr>
<td>Density Median</td>
<td>Hair Style</td>
<td>18.06</td>
<td>15.97</td>
<td>15.28</td>
<td>15.97</td>
<td>18.75</td>
</tr>
<tr>
<td>Density Max</td>
<td>Nose Height</td>
<td>37.04</td>
<td>23.61</td>
<td>24.07</td>
<td>25.93</td>
<td>28.70</td>
</tr>
<tr>
<td>Density Min</td>
<td>Nose Width</td>
<td>5.56</td>
<td>5.56</td>
<td>7.78</td>
<td>7.41</td>
<td>8.33</td>
</tr>
<tr>
<td>Tone No. Q1</td>
<td>Mouth Height</td>
<td>33.33</td>
<td>50.00</td>
<td>41.67</td>
<td>33.33</td>
<td>33.33</td>
</tr>
<tr>
<td>Tone No. Q3</td>
<td>Mouth Width</td>
<td>37.69</td>
<td>52.06</td>
<td>49.53</td>
<td>38.28</td>
<td>39.71</td>
</tr>
<tr>
<td>Tone No. Median</td>
<td>Smile</td>
<td>41.67</td>
<td>58.33</td>
<td>58.33</td>
<td>41.67</td>
<td>41.67</td>
</tr>
<tr>
<td>Tone No. Max</td>
<td>Ear Height</td>
<td>58.33</td>
<td>75.00</td>
<td>100.00</td>
<td>50.00</td>
<td>58.33</td>
</tr>
<tr>
<td>Tone No. Min</td>
<td>Ear Width</td>
<td>16.67</td>
<td>16.67</td>
<td>0.00</td>
<td>25.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Chernoff Face Element</th>
<th>The Merry Wedding</th>
<th>Australian Up-Country Song</th>
<th>FM1</th>
<th>FM2</th>
<th>Reger Fugue</th>
<th>Schoenberg Klavierstücke</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compass Q1</td>
<td>Face Height</td>
<td>15.38</td>
<td>15.38</td>
<td>18.46</td>
<td>20.00</td>
<td>14.23</td>
<td>16.92</td>
</tr>
<tr>
<td>Compass Q3</td>
<td>Face Width</td>
<td>20.82</td>
<td>27.09</td>
<td>24.90</td>
<td>31.09</td>
<td>20.93</td>
<td>34.94</td>
</tr>
<tr>
<td>Compass Median</td>
<td>Face Shape</td>
<td>26.15</td>
<td>36.92</td>
<td>32.31</td>
<td>43.08</td>
<td>26.54</td>
<td>52.88</td>
</tr>
<tr>
<td>Compass Max</td>
<td>Eye Height</td>
<td>43.08</td>
<td>66.15</td>
<td>53.85</td>
<td>100.00</td>
<td>37.69</td>
<td>96.92</td>
</tr>
<tr>
<td>Compass Min</td>
<td>Eye Width</td>
<td>3.08</td>
<td>4.62</td>
<td>4.62</td>
<td>4.62</td>
<td>5.38</td>
<td>0.77</td>
</tr>
<tr>
<td>Density Q1</td>
<td>Hair Height</td>
<td>12.04</td>
<td>11.11</td>
<td>14.81</td>
<td>12.50</td>
<td>14.35</td>
<td>8.42</td>
</tr>
<tr>
<td>Density Q3</td>
<td>Hair Width</td>
<td>16.29</td>
<td>13.14</td>
<td>19.15</td>
<td>20.67</td>
<td>18.42</td>
<td>15.48</td>
</tr>
<tr>
<td>Density Median</td>
<td>Hair Style</td>
<td>19.68</td>
<td>15.42</td>
<td>22.22</td>
<td>25.93</td>
<td>20.83</td>
<td>21.25</td>
</tr>
<tr>
<td>Density Max</td>
<td>Nose Height</td>
<td>33.33</td>
<td>22.22</td>
<td>44.44</td>
<td>61.11</td>
<td>47.22</td>
<td>46.53</td>
</tr>
<tr>
<td>Density Min</td>
<td>Nose Width</td>
<td>4.17</td>
<td>4.17</td>
<td>8.33</td>
<td>4.17</td>
<td>9.26</td>
<td>1.39</td>
</tr>
<tr>
<td>Tone No. Q1</td>
<td>Mouth Height</td>
<td>25.00</td>
<td>33.33</td>
<td>25.00</td>
<td>16.67</td>
<td>16.67</td>
<td>33.33</td>
</tr>
<tr>
<td>Tone No. Q3</td>
<td>Mouth Width</td>
<td>27.85</td>
<td>38.15</td>
<td>26.62</td>
<td>24.87</td>
<td>24.92</td>
<td>39.15</td>
</tr>
<tr>
<td>Tone No. Median</td>
<td>Smile</td>
<td>33.33</td>
<td>41.67</td>
<td>33.33</td>
<td>33.33</td>
<td>33.33</td>
<td>50.00</td>
</tr>
<tr>
<td>Tone No. Max</td>
<td>Ear Height</td>
<td>41.67</td>
<td>83.33</td>
<td>33.33</td>
<td>58.33</td>
<td>33.33</td>
<td>50.00</td>
</tr>
<tr>
<td>Tone No. Min</td>
<td>Ear Width</td>
<td>16.67</td>
<td>8.33</td>
<td>8.33</td>
<td>0.00</td>
<td>8.33</td>
<td>8.33</td>
</tr>
</tbody>
</table>

The collective sample of sixteen works as Chernoff faces is depicted in Figure 4.4. It is important to note that as density was measured in semitones per interval, smaller values indicated greater density, while larger values pointed to a sparser texture.
The considerable array of differing facial characteristics relating to density reinforces the previous observation that individual works contain a great amount of variation, transcending elements such as medium, tonal language and structure. However, similarities in linear behaviours do not necessarily translate here. For instance, the strong connections between the Brahms Intermezzo and Grieg Andantino Serioso observed earlier are no longer visible, indicating that while the contours and structuring of their respective graphs may
have been closely related, their absolute values were considerably unmatched. As such, all keyboard works, including the later twentieth-century pieces, contain a wide range of proportions, with very few traits applicable to all. However, the nineteenth-century works, including Andante con Moto, all possess mid-to-large face sizes indicating that their compass consistently occupies a larger scope than the later works. To a lesser extent, this is also true of the eyes, which are generally high in the piano works, reflecting a large maximum compass value. The Chopin Prelude No.17 is a pianistic outlier, with its six-part chord-based texture creating density similar to that observed in the choral music, reflected in the hair and nose proportions. Also it is the only piano work that possesses a smile rather than a frown due to its relatively high tone numbers. Combined, these observations suggest that the piano music is generally sparser compared to the choral music – the result of a wider compass and lower number of tones. These findings are unsurprising given the register advantage that keyboard has over voice, and also the limitations of pianistic fingering, which appears to discourage the sustained use of tones unless the work is vertically oriented, like the Chopin Prelude.

Evidence of a transitional period leading to the Marching Song sketches is partly present in the second row of faces, with the slight reduction in face size, higher (more excited-like) eyes, and sharper downwards hair. However, the general trend continues more convincingly past the sketches, with the later published chorus pieces becoming more akin to the profiles of the Free Music pieces. Conversely, At Twilight and the sketches are much more akin to the Andante Con Moto in their proportions. Considering that these chorus works are mostly a cappella suggests two fundamentally different approaches to density in the music. The earlier styles, including the sketches, appear related to the piano textures Grainger was using, being larger than the later styles in almost every parameter, excepting the small high-density values. The later choral works, on the other hand, are greatly reduced...
in compass, however high tone numbers still leads to the occasional exaggeration of the ears and mouth.

Significantly, despite their observed behavioural differences, the Chernoff faces show that both sketches of the *Marching Song* are highly related in almost every dimension, with the MS1 having wider ears (greater minimum tone number) and smaller eyes (less extreme compass) than MS2. They are most distinguished and united by their pronounced smile, indicating that for the most part, their tone numbers are consistently higher than the other studied works, particularly in relation to the other choral works. By comparison, the Chopin Prelude and *Free Music No.2* both maintain a consistent six-part texture, and thus smile pleasantly, however the mild-to-severe frowns of every other work shows how this level of polyphonic complexity is not likely to have been achieved or attempted in Grainger’s later works.

Chernoff faces are an effective means of summarizing complex data into compact, subjective forms. Although not suitable to all forms of analysis, in dealing with a wide range of mediums and styles here, they prove valuable in imparting an impression of the significance of the numerical values, under the right conditions. The extent to which the *Marching Song* sketches relate to, and stand apart from, the other works can be readily observed through their application. However, the faces are only an inexact method, and the data used to create them is further analysed in the following section.
4.4 Interquartile Range Representations

Using the same data as the generated Chernoff faces, the interquartile ranges (IQR) and median of each of the three dimensions – density, compass, and tone number – can be plotted. This method is a more exact and less subjective representation but still allows for rapid comparison, albeit requiring three graphs instead of one. Only the IQRs are displayed here as the maximum and minimums of many works were far less meaningful, usually zero values resulting from sparse beginnings, or extremely wide but momentary cadential points. However, these did not reflect the bulk of the piece and so for this closer analysis, the central half of the data reflected by the IQRs were chosen. Figures 4.5 to 4.7 present each of the dimensions.
Figure 4.5: Interquartile Ranges of Density
Examining the density values was the main point of interest for this study. Plotted in Figure 4.5, the examination confirmed that both *Marching Song* sketches are among the densest Grainger works studied, with the median of MS2 often at least a full semitone per interval denser than the other choral works. They are only matched or approached in this regard by the *Australian Up-Country Song* and the Chopin Prelude No.17, and to a lesser extent *Brigg Fair* and *Free Music No.2*. From a standalone perspective, the profile of *Australian Up-Country Song* is extremely similar to those in MS2. The Grainger choral works are surprisingly consistent in terms of the IQR width, encompassing one and a half semitones for most works. This suggests that in each choral work Grainger tended to minimally vary a texture around a central density. Combined with the previous observation that many of these works fluctuate greatly in their tone numbers, this implies that a consistent tendency to “fill in” an expanded total compass with additional tones to maintain this value was an important aspect of Grainger’s compositional method.

Conversely, the keyboard works are not only generally less dense but occupy a much broader IQR – characteristics that also apply to the wilder *Free Music* pieces. In this sense, *Andante Con Moto* does not match the others, with a modest and narrow IQR fully contained within the boundaries of *At Twilight*. However, together the keyboard works also exhibit a much wider degree of difference than the choral works, with Schumann’s *Träumerei* significantly lopsided in its sparse texture compared to the dense consistency of the Chopin Prelude No.17. At the other extreme, the twentieth-century keyboard works are outliers in the width of the IQR, employing a considerable spectrum of sparse and dense effects. Although *Andante Con Moto* is the most consistently dense work studied, its values in this regard are not particularly out of place if the versatility of the keyboard is taken into account.
Figure 4.6: Interquartile Ranges of Compass
When examining Grainger’s works, a downward trend of compass medians can be observed in Figure 4.6 up to, and including, *Free Music No. 1*. Compared to density, there is a great deal more variance between choral works, both in total IQR widths and also the relative values, suggesting that these pieces are able to occupy both wide and narrow registers. As observed in the Chernoff faces, the early works including the *Marching Song* sketches are unified by their expansive use of compass, with both sketches containing a wider IQR in both directions. However, the later choral works reveal a substantial and rapid drop into smaller ranges, although maintaining a considerable degree of IQR contrast, with *Australian Up-Country Song* again similar to MS2 in its exploration of both open and closed textures. Overshadowing all the studied works, *Free Music* No. 2 is an extreme outlier in its extraordinary use of wide and narrow ranges. This outlying status will be considered further in the following chapter as the result of the impressive tessituras of its graphic notation.

Surprisingly, variance is not as noticeable in the less restricted keyboard medium until the twentieth-century works. The romantic miniatures all tend to maintain a more consistent IQR, suggesting that techniques such as bass doubling at cadential points cloak the similar, more limited nature of their compasses. This graph also confirms that there is little evidence of change in instrumental medium being an influence on range here, witnessed by the similarities between *Andante Con Moto/At Twilight* and the *The Merry Wedding/Free Music* No. 1. Conversely, there is a considerable difference showing between choral works of similar tone numbers and densities.
Figure 4.7: Interquartile Ranges of Tone Numbers
As suggested by the Chernoff faces, the *Marching Song* sketches are most distinct in their extremely high tone numbers, averaging six tones or more. Shown in Figure 4.7, this characteristic contrasts against the four to five tones that define the IQR of most works, creating a transcending medium. There is also a larger oscillation evident in the IQR width of MS2, which is also a feature shared by both *Free Music* pieces. However, due to their linear nature the *Free Music* works are both limited by a fundamental maximum number of tones, four and six respectively, whereas the *Marching Song* features a much greater array of entering and diverging voices, which provides no theoretical limit. *Australian Up-Country Song* is less related to the sketches in this regard, despite its enlarged IQR, revealing that the similar maximum tone numbers observed in the first analytical section can be considered more exceptional than fundamental. Overall, the *Marching Song* sketches are shown to be unique in terms of their extreme and sustained use of high tone numbers.

By examining the IQR and median value, it was shown that, compared to the other Grainger works, the profiles of the *Marching Song* sketches are both consistently distinct in most aspects. Specifically, this includes a wider compass, greater densities, and significantly higher tone numbers. The method also highlighted trends or consistencies across the selection of works, such as the relative variance or consistency of compass, and the similar restrictions in tone numbers. Certainly elements in some choral works would later approach the values of the *Marching Song* sketches, most notably *Australian Up-Country Song* with its density. However, the equation governing its calculation meant that to achieve this similar value, a proportionate reduction was required in both tone numbers and total compass.
Conclusions

This process viewed the behaviour of density as the interplay of three different factors – range, tone numbers, and “density-compression” – displayed in this chapter through three different representations of data, each with their own areas of focus. The nuanced relationship between the factors highlighted the compositional need for contrast as a structural element, and that changes in one parameter would by definition affect at least one of the others. Overall, this system was able to quantify the methods in which the Marching Song sketches differed from its peers and also identify their fundamental similarities to one another.

From a density perspective, this analysis was only partially successful in providing evidence that At Twilight is a transitional work. In an observational sense, it was established that the attributes of Andante Con Moto have solid precedence in the earlier works, with alterations of density behaviours important for textural and structural contrast. Although some of these qualities are similar in At Twilight – notably those that might be expected to persist through a change of medium, such as structural reflection – these are precisely the qualities that are not included. Instead these anticipate the Marching Song profiles.

However, the later analytical methods link the early Grainger works together in density and compass measurements, including the sketches, while the later choral works alter more dramatically. While this does not directly preclude a transitional development, the evidence more convincingly points to a dramatic shift in Grainger’s later choral music away from the excesses explored in the Marching Song sketches.

The visual representation of data as Chernoff faces made further comparisons more visible across all three aspects, most significantly the considerable extent to which the two sections of the Marching Song sketches are closely related among the large array of works. This served as a reference point to visually illuminate many of the trends that were then
articulated in the third section of analysis. Here, the numerical data quantified the idiosyncratic profiles of both *Marching Song* sketches, with tone numbers being their most prominent characteristic. This reveals a fundamental trait of the sketches, echoed to a lesser extent in other works such as *Australian Up-Country Song*, that the density is able to be kept relatively constant through the addition and removal of tones in parallel with compass expansion and contraction.
Chapter 5
Tessitura and Compass

Tessitura is a somewhat inexact term, defined in Grove Music Online as “the part of a vocal (or less often instrumental) compass in which a piece of music lies.”¹ It is not dictated necessarily by the theoretical maximum range of a given voice, but is more accurately described as the range in which a composer generally positions it.² Although it is difficult to consistently identify tessitura ranges, a statistically influenced approach is taken for the purposes of this chapter. Tessitura is linked here to the interquartile range (IQR) of a voice’s contour, which defines the central half of the data. Therefore, the tessitura for each voice is considered here as bounded by the first and third quartiles of the data, with a range equivalent to the IQR. These features are shown using a brief extract in Example 5.1.

With this definition, the examination of tessitura is an important area of consideration in Grainger’s chorus music, with its multitude of same and similar voice types. This is most evident in the extensive use of men’s voice parts in every choral piece examined in this study. This characteristic is unsurprising given Grainger states his dislike of trends for high-voice bias in string ensembles,³ and his studies with Géroid outlined in Chapter One showed a particular emphasis on the male ensemble with a greater range potential than the women’s chorus, encompassing the stroh-bass, contraltino and falsetto registers. This layering is taken to an extreme in the Marching Song sketches, with a plethora of same and similar voice types crowded into a set range. Therefore, the question of how these voices

² Ibid.
³ “The richness of the lower voices of the harmony and the balance of tone are all sacrificed to a cloying, oversensuous over-weight of violin tone.” Percy Grainger, “To Conductors” in Thwaites, The New Percy Grainger Companion, 204.
are organised, and the extent to which they are affected in their overall range and tessitura, is the focus of this chapter. Specifically, it examines the relationship between tessitura and total range, the trends in tessitura positioning, and the extent of overlap within a given texture; it aims to compare these elements across a wide variety of music.

Example 5.1: Boxplot Features and Tessitura of MS2 Extract

To achieve an understanding of how range and tessitura function in the studied works, two related methods are used: boxplots and Chernoff faces. Boxplots readily allow interpretation of a piece’s data both in terms of the individual voices and as a whole. They portray the important points and ranges for each voice (compass, IQR and median) as well
as the corresponding pitches. Following this analysis, Chernoff faces allow for a more
abstract comparison that effectively compares the attributes of all the studied works due to
the large amount of variables and disparities between compositions. The facial features
highlight both the magnitude and proportions of selected elements, emphasising tessitura
overlap, compass, and skewness. In both forms of analysis, despite the horizontal emphasis
on the individual melodic lines, the methods used in this chapter essentially reflect
condensed vertical aspects. This positions the chapter as an intermediary between the more
generalised vertically-focused Chapter Four, and the examination of horizontal voice
crossing in Chapter Six, of which overlapping tessituras are often symptomatic.

5.1 Boxplot Representations

The boxplots created in this section draw upon the unmodified data for each voice
from the intervallic representations in Chapter Three. By presenting the data in boxplot
form, it summarised much of the significant information including tessitura, compass, and
positioning of the voices relative to one another. The collection of pitches for each voice
was used to calculate the extremes, inner quartiles and median, then plotted alongside the
other voices in the work. The plots provided a means to compare the various behaviours of
the individual polyphonic lines, and also allowed observations of their collective outcome.
All works outlined in Chapter Three, excepting the Schoenberg Klavierstücke Op.11, No.1,
were able to be analysed as part of this discussion and are presented as Figures 5.1, A-O.

The boxplots were designed on a chromatic stave, approximating the grand stave
with the black solid lines consistent with the regular grand stave, but notating the
incremental chromatic pitches with dotted lines, thus producing an uneven spacing
between the solid stave lines. Ledger lines were also added for reference, but these were
generally only required for the outside voices. In line with the original data, sustained pitches over multiple events were recounted for each event present in order to reflect a given note’s prominence throughout a piece, particularly relevant in the case of pedal points. Therefore, boxplot data is based on the note lengths (in events) at each pitch.

Also during this plotting stage, any voice that was divided momentarily was split and represented as two voices to show both potential data sets. However, for the later calculations these were re-merged into one voice containing the pitches of both variants, so as to avoid repetition bias in crucial inter-voice aspects such as overlapping ranges. This meant that only distinct voices were considered for comparison, with the exception of the solos in *At Twilight* and *Brigg Fair*, as these were able to create unique profiles by drawing on numerous voices. In most of the other examples, similar-coloured boxplots (e.g. light/dark green) are treated as one unified line in later calculations – an important point to note when considering the overlapping data results. However, the Reger Fugue, *Brigg Fair*, *The Merry Wedding*, and both *Free Music* and *Marching Song* sketches were works where each listed voice was entirely unique. The boxplot colours match the same voice parts noted in Chapter Three.
Figure 5.1I: Grainger *Brigg Fair*

Figure 5.1J: Grainger *Irish Tune*

Figure 5.1K: Grainger *The Merry Wedding*

Figure 3.4L: Grainger *Australian Up-Country Song*
5.2 Boxplot Analysis

Several prominent observations can be derived from these boxplots, although many of the extreme outliers, particularly the *Free Music No.2* and MS2, prevent these trends from being universally applicable. The observations relate to the rules of conventional part-writing, which encourage greater distances between the bass and upper voices and the tendency for the inner voices to be more restricted in tessitura. These qualities are most evident in the early keyboard works, particularly in the bass lines with the ‘voices’ not being technically limited by vocal ranges, and the inclination for composers to use octave doubling at cadences. This makes the bass data notably skewed and causes a wide distance between the first quartile and lower extreme. In contrast to the restricted inner voices, lower parts in both the keyboard and choral works also tend to possess wider IQRs in addition to a wider total range. This suggests these parts are generally more active in their contour, which may result from using typically wider leaps as shown in the Brahms Intermezzo in Example 5.2.


![Example 5.2: Brahms, Intermezzo, Op.119, No.2: Bass Line b.1-6](image)

Although the bass voices stand out prominently in this regard, other trends can be observed in the other parts. Increased numbers of inner voices tend to correspond with a greater degree of compass overlap, and subsequently are also prone to IQR overlap. In terms of compass, the uppermost voices generally lie mid-way between the more limited

---

inner voices and the expansive bass lines. However, the tessituras of these soprano lines also appear to occupy a greater proportion of this total range, suggesting more active contours that make fuller use of their compass. These inequalities prevent consecutive boxplots from descending in a straight line; the medians of the outer voices tend to drop steeply, reflecting a greater distance of separation, and they fall closer together between inner voices. Generally speaking, this suggests certain default characteristics permeate through both the choral and pianistic mediums in this study.

Observations that mainly apply to the keyboard repertoire are epitomised in Andante Con Moto, with its boxplot being remarkably similar in appearance to Schumann’s Träumerei, if a little lower. The data shows Grainger is careful to limit total register overlap to a similar extent, and deliberately positions voices according to spacing rules, despite being under no vocal obligation to do so as a keyboard work. Additionally, notable aspects of Andante Con Moto find precedent in the other established repertoire, for instance a lack of IQR overlap is seen in the Grieg Andantino Serioso, and the bass line is kept well away from the inner voices to a similar extent as with the Brahms Intermezzo. These comparative boxplots highlight the unexceptional nature of Andante Con Moto in terms of its positioning of voices.

The introduction of a significantly greater number of voices in At Twilight facilitates a significant break from the earlier works, and creates a template that would more closely resonate with the later choral works. The most important shift is that despite the additional voices (a total of seven independent lines), there is a widening of the inner voices in terms of total range and IQR and an inverse reduction in the outer voices, particularly the bass. The consistency with which this is later applied suggests an abrupt change from composition with regard to an artificial voice-leading template, to instead composing via a series of
melodic contours, each taking advantage of the available tessituras for each of the various voice types employed. However, the lowest bass lines are still centred slightly apart from the other voices, despite the particular crowding of additional men’s voices and various inclusions of 1st and 2nd Middles, and 1st Lows. The later published choral works generally exhibit the same characteristics as *At Twilight*, including a large quantity of voices and a similar distribution of ranges, particularly among the complete works (*Irish Tune* and *Australian Up-Country Song*). This is most typified in the *Australian Up-Country Song*, which possesses a substantial IQR overlap in the men’s voices stemming from its merged opening. The extent of this similarity is discussed further in the Chernoff face analysis below.

The *Marching Song* sketches are united in the large number of independent voices, although it was a challenge to create the MS2 plot due to the many potential realisations of the divisi pathways and redistributions of the ensemble. To address this, the same single interpretation was consistently applied throughout this dissertation; given the similar boxplot profiles of most same-voice types, it was unlikely to be affected greatly by alternate distributions. In both sketches, the large quantity of voices makes the overlapping of tessitura inevitable, with remarkably wide and consistent IQRs and total ranges spread across voices. However, the trend of a segregated bass still holds for the *Marching Song* sketches, albeit in both instances there are three independent bass lines sharing this register.

A number of factors make MS2 a particularly outlying work. The use of whistling, which is not limited by the same vocal confines, employs a considerably greater compass than the conventional voices. The boxplots show Grainger writing very similarly in terms of tessitura and extremes for all four whistling parts. Their frequent unison between all four parts ensures the same compass between Eb4-Ab6, with a slightly lower extreme than the
G4-Ab6 whistling register he notated in *Methods of Teaching and Other Things*.

Although technically a different medium, the inclusion of the whistling parts in the subsequent analysis is justified by their tessitura overlap with the boy sopranos to a similar extent that the sopranos overlap with the alto parts. This indicates the whistlers are generally treated in MS2 as a kind of “counter-soprano,” despite its extreme compass capabilities.

Another pertinent MS2 observation relates to the solo voices, which are generally either identically centred or which sit slightly lower than their full chorus counterparts. Rather than composing solos with virtuosic range demands, signifying prominence, this supports the view that Grainger employs soloists as a textural effect, evident in the initial canon of the boy sopranos soloists (see Chapter One, Ex. 1.22), which eventually overlap and connect with the main soprano parts. Combined with the later choral music, where the soloist line mostly consists of an amalgamation of other voices, this alternate treatment of the soloist concept is more in line with a democratic polyphony where “the tone strands (voice parts) enjoy an equality of prominence & importance.”

Finally, of all the conventionally notated works, the extreme polyphonic complexity is highlighted by the inaccurate placement of hierarchy within notated voice types. While voices follow a rough high-to-low order, the elements of the boxplots occasionally rise again, especially the median. For instance, in MS2 the “lower” Boy Alto 3 is effectively higher in all respects to Boy Alto 2. This quirk affects every voice type with multiple parts in the piece, and is also present in the bass lines of MS1. It points to a compositional system where the linear contours are not affected by the position of their immediate neighbours, and highlights that Grainger either had no predetermined hierarchy in mind, or was unable

---

to maintain one. The *Marching Song* sketches therefore show considerable tessitura and compass discrepancies, rendering them unique, not only compared to the full body of works, but also within Grainger’s own choral output.

The *Free Music* pieces are both outliers in their own right. *Free Music No.1* is characterised from a horizontal perspective by two pairs of overlapping voices, positioned entirely within the women’s vocal range. The highly active waves of Voice A ensure its substantial IQR, and the time-increment form of horizontal measurement, causes contrasting restricted IQR values in the ‘slower’, more gradual lines, especially the yellow Voice B. Along with *Free Music No.2*, this work contained a rare example of an independent voice lying entirely within the range of another (i.e. Voice B lies within Voice A). The liberated qualities of *Free Music No.2* are most reflected in the wide ranges and extremely large IQRs. As mentioned in Chapter Three, it was not always possible to follow the voices with complete accuracy and there was no obligation for Grainger to adhere to any particular line with a given register. As such, the compass of Voice D stretches almost the entire width of the total range used, and features an IQR that encompasses those of Voices B, C and E. As will be shown in the Chernoff face analysis, these erratic features cause *Free Music No.2* to become a very distant outlier.

Further evidence to support the hypothesis that medium played a significant role in tessitura placement is visible in the Reger Fugue. Despite its heavily chromatic language from a layering perspective, it is by far the most cautiously spaced of the studied works. No IQR overlap occurs and although the bass is wider in its IQR, it is also a little more distanced from the upper voices. The generous spacing Reger provides facilitates a total absence of voice crossing (discussed in Chapter Six), despite the fugal process being inherently conducive to the technique with its preservation of thematic contour. Therefore, the Reger
Fugue is placed firmly alongside the earlier keyboard works in terms of its adherence to controlled tessitura and compass.

In his study of Bach keyboard works, David Huron observed that: “as the number of voices increases, the pitch spread within the voices decreases.” For Huron’s observation window of between two and six voices, this certainly appears true for sensible tonal polyphony. However, a reversal of this trend was vividly observed when greater numbers of voices were brought into play, not only in the *Marching Song* but also in the less extreme choral scores by Grainger. The average ranges and IQR of the constituent voices for each conventionally notated work (i.e. excluding the *Free Music* pieces) in this study are represented in Table 5.1 and visualised in Figure 5.2. They show a decreasing pitch spread in both average compass and IQR that reverses direction once a seventh voice and beyond is added, with the large voice numbers of the *Marching Song* sketches eventually returning to, or even exceeding, the values of the four-voice works.

Table 5.1: Average Compass and IQR per number of voices

<table>
<thead>
<tr>
<th>No. of Voices</th>
<th>Average Compass</th>
<th>Average IQR</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>23.67</td>
<td>6.23</td>
</tr>
<tr>
<td>5</td>
<td>19.40</td>
<td>6.15</td>
</tr>
<tr>
<td>6</td>
<td>16.94</td>
<td>4.89</td>
</tr>
<tr>
<td>7</td>
<td>17.88</td>
<td>5.13</td>
</tr>
<tr>
<td>10</td>
<td>20.55</td>
<td>7.02</td>
</tr>
<tr>
<td>23</td>
<td>23.87</td>
<td>7.24</td>
</tr>
</tbody>
</table>

As listed in *Methods of Teaching and Other Things*, the average compass of the boy’s and men’s vocal parts suggested by Gérold is 25.625 semitones.\(^8\) Considering that the average voice compass in MS2 is shown here to reach 23.87 semitones, there is a strong correlation between an increased number of voices and an exploration of the full vocal ranges (and unrestrained melodic contours) of the constituent voices. Figure 5.2 shows that after six voices are added to the standard vocal range, it becomes impractical to maintain the texture without the considerable crossing fundamentally altering the compositional process. This appears to have led Grainger to completely ignore the conventional restriction of tessitura when such overcrowding occurs. Thus, once the likelihood of voice crossings reach a certain level of frequency it becomes essential to freely embrace them, rather than try harder to avoid them as Bach is shown to do in changing from two-part to six-part

---

\(^8\) These ranges are outlined in Chapter 1.
textures. More importantly, this implies an independent element, suggesting that increased voice numbers result in them no longer being limited in their profile by neighbours, and thus is highly conducive to free polyphony.

5.3 Chernoff Face Representations

Due to the array of meaningful parameters to be considered, and the wide selection of works, Chernoff faces were a suitable and effective method to portray these results in a single medium. The Chernoff faces were based upon two strands of co-informative data: the average values of all voices in a composition, applied to aspects such as compass, IQR and distances between consecutive medians, and their respective standard deviations. These parameters partially summarised the general trends observed above, particularly in distinguishing the choral and keyboard mediums. However, although these averages were important to consider, so was the degree to which individual voices conformed to them.

Standard deviations provided this information, with larger values indicating that the individual data was more disparate from the average and smaller values demonstrating a greater level of consistency. The following list of parameters describes the important attributes that were calculated for each composition.

1) **Average Compass:** The average range of all voices used throughout the work.

2) **Compass Standard Deviation:** A measure of how greatly the individual ranges conformed to the average.

3) **IQR:** Effectively the width of the tessitura, IQR ignores the extreme values of a given voice. It therefore describes the frequently used region of a given voice and is more susceptible to being restricted as texture density increases, as opposed
to a voice's total range, which may theoretically take advantage of momentary gaps in the texture to reach greater, if atypical extremes.

4) **IQR Range Standard Deviation:** A measure of how greatly the IQR's vary. As observed earlier in this chapter, larger deviations are symptomatic of a leaping bass line or broad melodic contour contrasting against static inner voices.

5) **Compass Overlap:** The degree to which the neighbouring voices overlap with one another. A high degree of overlap suggests an increased likelihood of voice crossing, while a low degree suggests a deliberate intention to keep voices in strictly defined and isolated registers.

6) **Compass Overlap Standard Deviation:** A measure of how greatly the range overlaps vary between the individual voices. This is of particular relevance to the often-isolated bass lines.

7) **IQR Overlap:** A parameter more telling than compass overlap, this measures the degree to which voices share the same frequently used tessituras – a large degree of overlap is indicative of multiple independent voices occupying the same pitch space and thus are highly likely to cross. Substantial IQR overlap between differing voice types is symptomatic of a freely melodic approach to polyphony, where voices are superimposed without regard for the inevitable collisions. Together with the total range overlap, this measure distinguishes between works with highly controlled registers (the Reger Fugue), works whose voices overlap but may maintain a mostly crossing-free hierarchy (*Träumerei*), and works that occupy and freely move within the same pitch space (MS2).
8) **IQR Overlap Standard Deviation**: A measure of how greatly the IQR overlaps vary between individual voices; this is particularly influenced by the number of independent same or similar voice types in a texture.

9) **Median Distance**: This measures the distance between the median values of each voice. It goes further than IQR overlap in one sense, as it shows the proximity of the vocal centres, but does not necessarily indicate overlapping, as nominally close inner voices may be restricted in their ranges. It is also an alternate measure of density to that explored in Chapter Four, which averaged the number of tones present within the total compass of each sonority. This parameter takes into account the centres of the linear data and highlights voices that may be crowded together as opposed to spread out across the extremes.

10) **Median Distance Standard Deviation**: A measure of how greatly the average distance between the individual voices varies.

While the above parameters represent the core of the relevant polyphonic behaviours, another pertinent feature of the data is the measure of its skewness, due to the outer voice profiles. As mentioned earlier, a number of works (the Chopin Prelude and Grieg *Andantino Serioso*) feature bass lines that reach an extremely low point but are usually situated in a much higher register. This was devised through measuring the distance and standard deviation between the median value and these extremes, thereby creating four additional parameters (No.11-14). One additional meaningful parameter was required to create the Chernoff faces, and was derived from the difference between the medians and each extreme as an absolute figure, ignoring positive and negative values (No.15).
11) **Median-Low Distance**: The average distance between the median and lowest value of each voice.

12) **Median-Low Distance Standard Deviation**: The degree to which this median-minimum distance varies between voices.

13) **Median-High Distance**: The average distance between the median and highest value of each voice.

14) **Median-High Distance Standard Deviation**: The degree to which this median-maximum distance varies between voices.

15) **Median-Extremity Difference**: This was a direct measure of skewness, with small values indicating generally symmetrical contours and large values showing that the voices gravitated to one end of the pitch spectrum.

This series of parameters represent important data outlining the horizontal relationships of the voices within a piece, specifically their compass/tessitura, degrees of overlap, and the level of consistency between them. For allocation to the Chernoff face features, although highly subjective in nature, average values and standard deviations were generally paired separately. Larger values were allocated to larger facial features; for instance, the wider compass is reflected in the hair dimensions. As was typical of the Chernoff face method, results were ordered so that the highest value for any given parameter observed in all the studied works was calibrated as 100% and all other results scaled accordingly. These values are noted in Tables 5.2 and their allocation to the Chernoff face features depicted in Figure 5.3.
Table 5.2: Parameter Values for Chernoff Face Generation

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Chernoff Face Element</th>
<th>Chopin Prelude</th>
<th>Schumann Träumerei</th>
<th>Grieg Andantino</th>
<th>Brahms Intermezzo</th>
<th>Andante Con Moto</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compass</td>
<td>Hair Height</td>
<td>55.94</td>
<td>66.08</td>
<td>76.48</td>
<td>57.62</td>
<td>68.31</td>
</tr>
<tr>
<td>Compass STD Dev.</td>
<td>Mouth Height</td>
<td>67.01</td>
<td>34.83</td>
<td>100.00</td>
<td>56.13</td>
<td>46.99</td>
</tr>
<tr>
<td>IQR</td>
<td>Eye Height</td>
<td>39.09</td>
<td>54.45</td>
<td>46.07</td>
<td>51.52</td>
<td>56.02</td>
</tr>
<tr>
<td>IQR STD Dev.</td>
<td>Nose Height</td>
<td>21.76</td>
<td>46.45</td>
<td>32.64</td>
<td>55.31</td>
<td>59.60</td>
</tr>
<tr>
<td>Compass Overlap</td>
<td>Hair Width</td>
<td>38.96</td>
<td>44.37</td>
<td>50.87</td>
<td>37.34</td>
<td>40.04</td>
</tr>
<tr>
<td>Compass Overlap STD Dev.</td>
<td>Mouth Width</td>
<td>65.17</td>
<td>39.20</td>
<td>29.63</td>
<td>52.70</td>
<td>19.60</td>
</tr>
<tr>
<td>IQR Overlap</td>
<td>Eye Width</td>
<td>15.93</td>
<td>11.61</td>
<td>0.00</td>
<td>4.98</td>
<td>0.00</td>
</tr>
<tr>
<td>IQR Overlap STD Dev.</td>
<td>Nose Width</td>
<td>16.87</td>
<td>34.79</td>
<td>0.00</td>
<td>18.26</td>
<td>0.00</td>
</tr>
<tr>
<td>Median Distance</td>
<td>Hair Shape</td>
<td>48.46</td>
<td>84.62</td>
<td>61.54</td>
<td>80.77</td>
<td>100.00</td>
</tr>
<tr>
<td>Median Distance STD Dev.</td>
<td>Mouth Shape</td>
<td>14.85</td>
<td>15.88</td>
<td>3.00</td>
<td>25.07</td>
<td>39.37</td>
</tr>
<tr>
<td>Median-Low Distance</td>
<td>Face Height</td>
<td>73.86</td>
<td>54.68</td>
<td>98.56</td>
<td>65.04</td>
<td>44.60</td>
</tr>
<tr>
<td>Median-Low STD Dev.</td>
<td>Ear Height</td>
<td>77.33</td>
<td>35.66</td>
<td>100.00</td>
<td>39.91</td>
<td>29.99</td>
</tr>
<tr>
<td>Median-High Distance</td>
<td>Face Width</td>
<td>27.96</td>
<td>59.42</td>
<td>40.19</td>
<td>37.75</td>
<td>71.07</td>
</tr>
<tr>
<td>Median-High STD Dev.</td>
<td>Ear Width</td>
<td>14.28</td>
<td>10.25</td>
<td>27.44</td>
<td>38.79</td>
<td>35.39</td>
</tr>
<tr>
<td>Median-Extremity Difference</td>
<td>Face Shape</td>
<td>70.09</td>
<td>33.33</td>
<td>87.18</td>
<td>36.92</td>
<td>76.92</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Chernoff Face Element</th>
<th>At Twilight</th>
<th>MS1</th>
<th>MS2</th>
<th>Brigg Fair</th>
<th>Irish Tune</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compass</td>
<td>Hair Height</td>
<td>51.34</td>
<td>61.02</td>
<td>70.89</td>
<td>38.61</td>
<td>56.43</td>
</tr>
<tr>
<td>Compass STD Dev.</td>
<td>Mouth Height</td>
<td>23.34</td>
<td>24.36</td>
<td>49.99</td>
<td>13.57</td>
<td>33.69</td>
</tr>
<tr>
<td>IQR</td>
<td>Eye Height</td>
<td>40.69</td>
<td>58.83</td>
<td>60.64</td>
<td>39.09</td>
<td>44.68</td>
</tr>
<tr>
<td>IQR STD Dev.</td>
<td>Nose Height</td>
<td>22.07</td>
<td>36.12</td>
<td>55.10</td>
<td>27.52</td>
<td>40.12</td>
</tr>
<tr>
<td>Compass Overlap</td>
<td>Hair Width</td>
<td>42.21</td>
<td>60.25</td>
<td>67.89</td>
<td>28.57</td>
<td>48.05</td>
</tr>
<tr>
<td>Compass Overlap STD Dev.</td>
<td>Mouth Width</td>
<td>49.69</td>
<td>64.62</td>
<td>89.51</td>
<td>32.05</td>
<td>41.46</td>
</tr>
<tr>
<td>IQR Overlap</td>
<td>Eye Width</td>
<td>26.55</td>
<td>85.72</td>
<td>100.00</td>
<td>27.87</td>
<td>39.82</td>
</tr>
<tr>
<td>IQR Overlap STD Dev.</td>
<td>Nose Width</td>
<td>52.60</td>
<td>90.81</td>
<td>85.42</td>
<td>78.23</td>
<td>46.20</td>
</tr>
<tr>
<td>Median Distance</td>
<td>Hair Shape</td>
<td>50.00</td>
<td>26.92</td>
<td>15.21</td>
<td>46.15</td>
<td>53.08</td>
</tr>
<tr>
<td>Median Distance STD Dev.</td>
<td>Mouth Shape</td>
<td>39.99</td>
<td>39.74</td>
<td>29.65</td>
<td>26.41</td>
<td>44.55</td>
</tr>
<tr>
<td>Median-Low Distance</td>
<td>Face Height</td>
<td>51.39</td>
<td>68.20</td>
<td>73.19</td>
<td>44.60</td>
<td>54.68</td>
</tr>
<tr>
<td>Median-Low STD Dev.</td>
<td>Ear Height</td>
<td>34.47</td>
<td>22.24</td>
<td>36.85</td>
<td>15.47</td>
<td>26.73</td>
</tr>
<tr>
<td>Median-High Distance</td>
<td>Face Width</td>
<td>38.95</td>
<td>44.97</td>
<td>51.97</td>
<td>24.47</td>
<td>44.27</td>
</tr>
<tr>
<td>Median-High STD Dev.</td>
<td>Ear Width</td>
<td>29.69</td>
<td>32.02</td>
<td>36.76</td>
<td>18.81</td>
<td>34.06</td>
</tr>
<tr>
<td>Median-Extremity Difference</td>
<td>Face Shape</td>
<td>35.16</td>
<td>34.87</td>
<td>28.54</td>
<td>25.64</td>
<td>27.35</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Chernoff Face Element</th>
<th>The Merry Wedding</th>
<th>Australian Up-Country Song</th>
<th>FM1</th>
<th>FM2</th>
<th>Reger Fugue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compass</td>
<td>Hair Height</td>
<td>50.07</td>
<td>57.92</td>
<td>45.29</td>
<td>100.00</td>
<td>64.60</td>
</tr>
<tr>
<td>Compass STD Dev.</td>
<td>Mouth Height</td>
<td>18.08</td>
<td>42.24</td>
<td>18.73</td>
<td>74.54</td>
<td>12.46</td>
</tr>
<tr>
<td>IQR</td>
<td>Eye Height</td>
<td>42.18</td>
<td>46.07</td>
<td>42.67</td>
<td>100.00</td>
<td>48.17</td>
</tr>
<tr>
<td>IQR STD Dev.</td>
<td>Nose Height</td>
<td>51.82</td>
<td>41.29</td>
<td>63.02</td>
<td>100.00</td>
<td>24.21</td>
</tr>
<tr>
<td>Compass Overlap</td>
<td>Hair Width</td>
<td>43.83</td>
<td>43.29</td>
<td>34.09</td>
<td>100.00</td>
<td>47.62</td>
</tr>
<tr>
<td>Compass Overlap STD Dev.</td>
<td>Mouth Width</td>
<td>41.33</td>
<td>49.41</td>
<td>100.00</td>
<td>31.66</td>
<td>19.60</td>
</tr>
<tr>
<td>IQR Overlap</td>
<td>Eye Width</td>
<td>34.01</td>
<td>33.18</td>
<td>42.31</td>
<td>92.58</td>
<td>0.00</td>
</tr>
<tr>
<td>IQR Overlap STD Dev.</td>
<td>Nose Width</td>
<td>75.16</td>
<td>71.69</td>
<td>75.43</td>
<td>100.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Median Distance</td>
<td>Hair Shape</td>
<td>30.77</td>
<td>30.77</td>
<td>36.54</td>
<td>40.96</td>
<td>80.77</td>
</tr>
<tr>
<td>Median Distance STD Dev.</td>
<td>Mouth Shape</td>
<td>18.72</td>
<td>25.97</td>
<td>48.66</td>
<td>100.00</td>
<td>10.40</td>
</tr>
<tr>
<td>Median-Low Distance</td>
<td>Face Height</td>
<td>54.27</td>
<td>56.73</td>
<td>37.41</td>
<td>100.00</td>
<td>63.31</td>
</tr>
<tr>
<td>Median-Low STD Dev.</td>
<td>Ear Height</td>
<td>15.60</td>
<td>34.36</td>
<td>24.02</td>
<td>65.06</td>
<td>8.53</td>
</tr>
<tr>
<td>Median-High Distance</td>
<td>Face Width</td>
<td>34.62</td>
<td>35.95</td>
<td>40.78</td>
<td>100.00</td>
<td>50.10</td>
</tr>
<tr>
<td>Median-High STD Dev.</td>
<td>Ear Width</td>
<td>14.57</td>
<td>32.86</td>
<td>28.42</td>
<td>100.00</td>
<td>10.25</td>
</tr>
<tr>
<td>Median-Extremity Difference</td>
<td>Face Shape</td>
<td>20.51</td>
<td>30.77</td>
<td>38.46</td>
<td>100.00</td>
<td>7.69</td>
</tr>
</tbody>
</table>
While in the process of creating the faces, it quickly became evident that two distinct sets of faces would be of most use. This is due to the fact that *Free Music No.2* was a massive outlier, as evident by the large number of relative maximum values in Table 5.2. Specifically, ten out of the fifteen parameters for the piece were extreme, notably including compass and IQR (highlighted in Table 5.2). From the Chernoff face perspective, this causes the *Free Music No.2* to stand out in relief when compared to the other works in Figure 5.4. While this was an important finding in its own right, the proportionate nature of the faces made differentiation between other works more difficult. As such, the works were rescaled and regenerated into a second set of faces that omitted *Free Music No.2*, so that the smaller differences were brought out. This version is represented in Figure 5.5, and most subsequent discussion will draw on the latter version, with the caveat that *Free Music No.2* is exceptional in this context due to its extreme compass and tessitura profile.
Figure 5.4: Chernoff Faces (All Studied Works)

<table>
<thead>
<tr>
<th>Schumann</th>
<th>Chopin</th>
<th>Grieg</th>
<th>Brahms</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Träumerei</em></td>
<td><em>Prelude No.17</em></td>
<td><em>Andantino Serioso</em></td>
<td><em>Intermezzo</em></td>
</tr>
<tr>
<td><img src="image1" alt="Face" /></td>
<td><img src="image2" alt="Face" /></td>
<td><img src="image3" alt="Face" /></td>
<td><img src="image4" alt="Face" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grainger</th>
<th>Grainger</th>
<th>Grainger</th>
<th>Grainger</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Andante Con Moto</em></td>
<td><em>At Twilight</em></td>
<td><em>MS1</em></td>
<td><em>MS2</em></td>
</tr>
<tr>
<td><img src="image5" alt="Face" /></td>
<td><img src="image6" alt="Face" /></td>
<td><img src="image7" alt="Face" /></td>
<td><img src="image8" alt="Face" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grainger</th>
<th>Grainger</th>
<th>Grainger</th>
<th>Grainger</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Brigg Fair</em></td>
<td><em>Irish Tune</em></td>
<td><em>The Merry Wedding</em></td>
<td><em>Australian Up-Country Song</em></td>
</tr>
<tr>
<td><img src="image9" alt="Face" /></td>
<td><img src="image10" alt="Face" /></td>
<td><img src="image11" alt="Face" /></td>
<td><img src="image12" alt="Face" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grainger</th>
<th>Grainger</th>
<th>Rege</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Free Music No.1</em></td>
<td><em>Free Music No.2</em></td>
<td><em>Fugue</em></td>
</tr>
<tr>
<td><img src="image13" alt="Face" /></td>
<td><img src="image14" alt="Face" /></td>
<td><img src="image15" alt="Face" /></td>
</tr>
</tbody>
</table>
Figure 5.5: Chernoff Faces (Omitting *Free Music No.2*)

<table>
<thead>
<tr>
<th>Schumann</th>
<th>Chopin</th>
<th>Grieg</th>
<th>Brahms</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Träumerei</em></td>
<td><em>Prelude No.17</em></td>
<td><em>Andantino Serioso</em></td>
<td><em>Intermezzo</em></td>
</tr>
<tr>
<td><img src="image1" alt="Face" /></td>
<td><img src="image2" alt="Face" /></td>
<td><img src="image3" alt="Face" /></td>
<td><img src="image4" alt="Face" /></td>
</tr>
<tr>
<td>Grainger</td>
<td>Grainger</td>
<td>Grainger</td>
<td>Grainger</td>
</tr>
<tr>
<td><em>Andante Con Moto</em></td>
<td><em>At Twilight</em></td>
<td><em>MS1</em></td>
<td><em>MS2</em></td>
</tr>
<tr>
<td><img src="image5" alt="Face" /></td>
<td><img src="image6" alt="Face" /></td>
<td><img src="image7" alt="Face" /></td>
<td><img src="image8" alt="Face" /></td>
</tr>
<tr>
<td>Grainger</td>
<td>Grainger</td>
<td>Grainger</td>
<td>Grainger</td>
</tr>
<tr>
<td><em>Brigg Fair</em></td>
<td><em>Irish Tune</em></td>
<td><em>The Merry Wedding</em></td>
<td><em>Australian Up-Country Song</em></td>
</tr>
<tr>
<td><img src="image9" alt="Face" /></td>
<td><img src="image10" alt="Face" /></td>
<td><img src="image11" alt="Face" /></td>
<td><img src="image12" alt="Face" /></td>
</tr>
<tr>
<td>Grainger</td>
<td>Reger</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Free Music No.1</em></td>
<td><em>Fugue</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td><img src="image13" alt="Face" /></td>
<td><img src="image14" alt="Face" /></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5.4 Chernoff Face Analysis

The Chernoff faces reveal a great deal of comparative information about the numerous qualities and relationships of tessitura and compass, particularly distinguished through Figure 5.5. One of the most important observations is the clear distinction between works for keyboard and works for chorus, although both of the *Marching Song* sketches are an exception to this. Conversely, the rather minimalist yet closely interweaved polyphony of *Free Music No.1* results in a face remarkably similar to the choral works, and thus shows that its compass and tessitura proportions are likewise related to the choral profiles. Similarly, *At Twilight* appears more closely related to the later published choral works than to its immediate neighbours.

The differences are most evident through three main trends in the facial features: firstly, the faces and hair of keyboard works are generally larger, indicating wider distances in at least one direction between the median and extremities, and greater values of compass and compass overlap. The upturned hair present in four of the six keyboard works indicated that despite the compass overlap, the reduced number of voices and isolated registers created wider distances between the medians of each voice, implying more distinct registers. In contrast, the choral pieces had smaller and more symmetrical median-to-extremity relationships, and while the vocal compass and subsequent compass overlap were technically smaller, the downward-pointing hair showed that medians were consistently much closer together, reflecting a generally denser texture.

Secondly, the keyboard faces are considerably more varied, encompassing a greater proportion of the extreme values, particularly in the Grieg *Andantino Serioso*, the Reger Fugue and Grainger’s *Andante Con Moto*, resulting in the most distorted faces. This was also evident through the greater variety of face, hair and nose combinations in the keyboard
works. Additionally, the typically larger ears of the keyboard works indicated a greater standard deviation of median to extreme values, implying a greater degree of inconsistency in this respect. Conversely, Grainger’s choral music is much more consistent and balanced in terms of feature proportions, tending towards a symmetrical distribution. This is a significant observation, as given the close proximity of the voices, the increased resistance to skewness is a potential symptom of melodic freedom, leading to the extensive voice crossing typical of Grainger’s choral music explored in Chapter Six.

Finally, although most aspects of the choral works are more symmetrical than keyboard works, by virtue of possessing lower standard deviations, one element shows this trait reversed – the mouth shape. Keyboard works tend to frown heavily, implying a more equal spacing of the median values, caused by distinct registers and typified by the Reger Fugue in Figure 5.1O. The choral works, however, usually appear at least mildly pleased, due to their greater standard deviations reflecting the unequal tessituras of the voices, dependent on their type and the extreme proximity caused by multitudes of same and similar voice types, particularly in the Marching Song sketches.

The Marching Song sketches are highly distinctive in their own right, even in relation to the other works for chorus. Only the sketches demonstrate diversity and magnitude to a similar extent as the keyboard works. MS2 is clearly the more extreme case due to its higher voice numbers; however, it is evident that both of the sketch faces share similar proportions in every parameter. This proves that despite their radically different compositional background discussed in Chapter One, their polyphony functions in an almost identical fashion from the perspective of tessitura and compass relationships. While the face shapes of the sketches are considerably larger than that of the choral works, they nevertheless retain distinctively balanced proportions to a much greater extent than in the keyboard
works, implying a wide and symmetrical exploration of each voice's compass. As Figure 5.2 showed earlier, this is evidence that in this ambitious polyphonic style, Grainger confronted the challenge of an overcrowded texture by allowing each voice the same freedom as that bestowed on the sparse keyboard works. Further, the sizeable hair on the Chernoff faces confirms this expansive average compass and its overlap, while again maintaining the pointed shape of the chorus works that nevertheless indicates a much greater proximity of voices.

Tessitura and its overlap was the most telling element and, as such, was assigned to the highly prominent eye dimensions. Eye shape was the most critical divide between the two mediums, reflecting IQR (eye height) and its overlap (eye width). For the choral works, the generally low and wide eyed profile suggests that these voices tend to overlap despite a relatively small IQR average, while this factor is severely limited in the keyboard works and evident in the narrow eye width. This was an interesting finding given that the keyboard works tended to have larger IQRs, as well as larger overall ranges – factors that would ostensibly encourage more overlap.

As a result, this illustrates the core difference between Grainger’s choral writing (even from the early At Twilight) and his keyboard style as it confirms a sudden and deliberate shift from a vertical emphasis on clear, distinct voicing, to a linear texture focusing on the independence of parts. It was observed that the faces of the keyboard works also possessed smaller noses, pertaining to a limited standard deviation with IQR and its overlap, largely due to the fact that IQR overlap was often non-existent in the keyboard works. Overall, the influence of medium is quite tangible in the Chernoff faces; tessituras are much more likely to overlap in a choral texture, while the larger IQR’s of the keyboard works are positioned with more sensitivity to those of their neighbouring voices.
Eye proportions are taken to an extreme in both of the *Marching Song* sketches, and even when considering *Free Music No.2* in Figure 5.4, the proportionate and wide eyes are still their most definitive feature. The great magnitude of IQR and its overlap is the most outlying factor of the sketches, and combines the large compass and IQR of the keyboard works with the significant overlap observed in the choral music. This observation of multiple voices freely occupying broad and often simultaneous ranges is vitally important to the overall objective of this dissertation – showing that Grainger’s polyphony in this early work fostered the democratic independence that would result in extensive voice crossing. It is also significant that the *Marching Song* sketches would reach proportions of compass and IQR that appear unmatched in his choral music, and would only reach similar levels in the *Free Music No.2*.

**Conclusions**

Overall, the tessituras, compass and positioning of individual vocal lines all constitute three extremely important aspects of texture. Supporting the overarching theme of this dissertation, this chapter demonstrates how the *Marching Song* sketches represent a compositional disconnect from certain elements of Grainger’s choral output, while retaining other important characteristics. It also shows that the sketches reach statistical extremes that were not evident in Grainger’s chorus music until the remarkable texture of *Free Music No.2*. Finally, through examination of the raw data and multivariate analysis, this chapter identifies a close link between the change of medium and the degree of polyphonic freedom from a horizontal perspective. The shift into a highly consistent choral format takes effect immediately in *At Twilight*, while the keyboard works are shown to have greatly diverse and exaggerated qualities. Serving as a frame of reference, the keyboard works and *Free Music*...
represented extremes through which the distinctive attributes of the *Marching Song*’s melodic equality, and its resultant overlapping nature, were brought into relief.

This compositional process enabled Grainger to break with conventional polyphonic spacing, allowing the coexistence of a much greater number of voices, often in the same or similar registers. Importantly, it showed the reversal of Huron’s observed trend of smaller tessituras corresponding with higher voice numbers when taken to the extreme. The complete breakdown of standard polyphonic considerations, such as the avoidance of crossings and the “tightening-up”\(^\text{10}\) of tessituras in denser textures, was observed in the *Marching Song* sketches with average parameters equal to, or larger than, those for sparse four-part textures. The unifying characteristics of Grainger’s horizontally-orientated choral music were made highly visible in the Chernoff face analysis, with the symmetrical qualities appearing less attainable through the skewed idiosyncrasies of vertically-based keyboard writing. Most importantly, the ability for multiple voices to occupy the same tessitura was a uniting and liberating factor between both *Marching Song* sketches and the later *Free Music* – an aspect that was scaled back somewhat in his published choral works.

The mechanics behind this process are further explored in the following chapter on voice crossings, but it is clearly evident from these findings that Grainger had become increasingly less concerned with establishing a coherent vertical hierarchy with these pieces, and instead began to prioritise the exploration of the individual vocal lines. This process fostered a democratic polyphony, with each line fully utilizing its own natural tessitura and compass despite its location within a texture.

\(^{10}\) Huron, “The Avoidance of Part-Crossing in Polyphonic Music,” 98.
Chapter 6

Examination of Polyphonic Voice Crossings

This chapter examines what is perhaps the most visible symptom of a metaphorically democratic texture in Grainger’s polyphony, the abundance of voice crossings. Unlike many other analytical parameters encountered throughout this dissertation, there is happily less ambiguity between scholars over the conventional voice crossing definition. In the general case it is sufficient to adopt Empirical Musicologist David Huron’s description as “whenever a pitch in a nominally lower voice exceeds a concurrent pitch in a nominally higher voice.”¹

The use of such crossings, particularly in dense textures, enables polyphonic contours to remain uninhibited despite the proximity of neighbours, potentially allowing for the juxtaposition of many independent and equally melodic lines.

This chapter will commence with a brief discussion of how crossing has been valued and studied in music theory literature, followed by an examination of crossing in Grainger’s chorus works. Here, general observations are made regarding the wide spectrum of crossing behaviour that may be found, with such activity in the Marching Song sketches alone ranging from reasonably limited to extremely prodigious. Despite the seemingly clear outline of what voice crossing is, numerous barriers resist its direct application to Grainger’s polyphony. The challenges in approaching voice crossing are outlined and resolved in the next section of the chapter. While drawing on several existing studies for an analytical foundation, this process allows the development of a more universal approach to considering voice crossing. Finally, it aims to statistically evaluate the saturation of the phenomenon in the Marching Song sketches compared to the other studied works, and

arrive at an understanding of how this profoundly affects the polyphonic textures of the music.

### 6.1 Voice Crossing in Music Theory Literature

Although the concept of voice crossing is straightforward, there is considerable contention surrounding whether voice crossings are in fact a desirable or to-be-avoided occurrence in music, with the musical evidence supporting both hypotheses to an extent. For instance, Danish theorist Knud Jeppesen in discussing sixteenth-century polyphony is an enthusiastic advocate, going so far as to regard crossing as “a technique which cannot be recommended sufficiently. One may say that without [voice crossings] no real polyphony is possible.”

Parallel to the democratic justification earlier, the implied argument here for voice crossing as a vital element of polyphony is that it reinforces and reflects the co-existence of independent melodic contours.

In other more common practice harmony textbooks, active discouragement of the phenomenon is more typical, with Gauldin, Kostka and Payne, and Piston to name but a few recommending or noting a general aversion to it in teaching students. To be fair, this is usually accompanied by some form of qualification or acknowledgement that momentary instances may occur acceptably, “if there is a musical reason to do so,” such as to “circumvent the occurrence” of parallel fifths between inner voices. As Tymoczko elaborates, at a student level, crossings clearly appear to be deterred primarily to support

6 Kostka and Payne, 75.
clear voice-leading, “in which the voices remain registrally separate... also reducing the
“search space” that students must consider.”\(^8\) Contradicting their cautions, one only needs
to survey the oft-quoted Bach chorales in such books to observe voice-crossings in frequent
practice. In actuality, they are quite a common occurrence when considered in tempered
form, i.e. temporarily and within a relatively controlled vertical pitch space. Huron’s detailed
study on the topic revealed that of 105 keyboard works of Bach, “the proportion of crossed
sonorities ... rang[ed] between 0% and 10%”\(^9\) with a significant increase corresponding to
the amount of voices present. At its peak, the six-voice Ricercar of *The Musical Offering*
reaches the highest observed mean of
6.61%, with a complex example represented in Example 6.1. Crossings affecting the stem
directions can be readily observed in b.86 of the example between the inner voices; note
that the upper voice in the lower stave starts the bar higher than both lower voices of the
upper stave. Huron’s findings are significant as they underline the relationship between
increased voice numbers in conventional polyphonic writing, and the result that “it becomes
more difficult to prevent the voices from becoming entangled.”\(^10\) This leads to his final
conclusion that Bach actually attempts “to minimize perceptual confusions as the textural
density increases”\(^11\) through becoming “more vigilant to avoid the crossing of parts.”\(^12\)

\(^8\) Dmitri Tymoczko, *A Geometry of Music: Harmony and Counterpoint in the Extended Common Practice*,
\(^10\) Ibid., 101-102.
\(^11\) Ibid., 102.
\(^12\) Ibid., 101.
Example 6.1: J.S. Bach: The Musical Offering BWV 1079, No. 2. Ricercar a 6, b. 85-88\textsuperscript{13}

Looking back at even earlier music, Tymoczko observes similar levels, placing the average voice crossing figure at 5% when considering a wide range of fifteenth- and sixteenth-century composers.\textsuperscript{14} On the higher end of the spectrum, Carlo Gesualdo’s five-voice madrigal Moro, lasso, al mio duolo, (No.17, Book VI) contains 9.15% crossed tones across its sonorities, reflected visually in the complex web of Figure 6.1. Here, only the bass part is excluded from crossing and although some of the more frequent crossings are simple voice exchanges (Quinto and Altus), the centre of the work shows more extended contour interplay.

\textsuperscript{13} Johann Sebastian Bach, Musikalisches Opfer, BWV 1079, (Leipzig: Breitkopf & Härtel, 1885), 18.

\textsuperscript{14} Tymoczko, 148.
It therefore is not surprising that the linear emphasis of polyphonic composition in Renaissance and Baroque music justifies Jeppesen’s enthusiasm for the voice crossing. Techniques commonly associated with the Baroque, such as the fugue and canon particularly assist with the strict preservation of melodic contours often resulting in inevitable clashes. While both Huron and Tymoczko remark that although observed crossing proportions of this magnitude are considered low, their findings confirm that common-practice voice crossing has a consistent musical presence, and may be more aptly described as an occasional technique rather than the rare occurrence implied in textbook harmony.

6.2 Observations of Voice Crossing in Grainger’s Music

As mentioned at the outset, voice crossing is perhaps one of the most distinguishing features of Grainger’s chorus music, as can be readily seen in the intervallic representations of Chapter Three. From an observational perspective, voices are often free to melodically
ramble without much evidence of limitation to their contour imposed by their neighbours. It is also evident that the *Marching Song* sketches feature by far the most impressive instances of voice crossing compared to all other works surveyed. The independence of the polyphony in the sketches shows no trace of Bach-like attempts to obviate clashes in proportion to their inevitability; instead, it appears more in the cacophonic vein of Ives.\(^\text{15}\)

Typical of Grainger, it is impossible to make the claim that all his choral works always adhere to this quality. The wide variety of forces employed throughout the choral works, not least unison voices, inevitably means that some works retain a relative avoidance of voice crossing in favour of more conventional choral writing. This can be seen particularly affecting his folk song settings with a strict verse structure, such as *The Gipsy’s Wedding Day* (see Chapter Three, Figure 3.9), where the five verses alternate between soprano and tenor, and aside from momentary neighbouring crossing, the vast majority of voices exist in segregated tessituras. Significantly, almost all of the crossings occur between the tenor and the other parts when it takes over the tune at events 66-130 and 196-262, indicating that the few clashes arise only due to a set contour being shifted into a similarly defined harmonic accompaniment.

Further along the spectrum of crossing density, Grainger’s folk tune settings may still possess a strong verse structure and relatively few voices, yet also contain deliberate and regular voice crossings. In this vein, the *Irish Tune from County Derry* evokes the same qualities of *Moro, lasso*, containing a high degree of voice crossings, with every inner voice at some point merging or crossing with every other inner part. As discussed below, it is notable that Grainger preserves the outer voice clarity, creating a more perceptible

\(^{15}\) Jan Swafford describes the texture of the second movement of the Symphony No.4 as “the closest Ives ever came to ... sheer sonic turmoil... a collage of individual voices.” Jan Swafford, *Charles Ives: A Life with Music*, (New York: W. W. Norton, 1998), 356.
dimension to the texture, and using the ambiguity of voice crossing as an internal colouring effect, sandwiched between two clearly defined outlines. Although the crossing frequency is greatly amplified, *At Twilight* also belongs in this category, with the notable addition of a solo tenor line that is, in part, an amalgamation of four other voices.

Aside from this style of perpetual inner voice crossings, Grainger also is strongly associated with sporadic employment. There are a significant number of a cappella works which contain freer structures, or at least contain an additional (and sometimes wordless) bridge section, which enabled Grainger to temporarily break out of the chorale and tessitura mould and create music that, at least superficially, resembles the *Marching Song* polyphony due to its suddenly high quantity of crossings. These greater crossing levels were one of the primary reasons behind the selection of the two extracts in this study, *The Merry Wedding* and *Brigg Fair*. The sudden shift of texture to feature crossings is used in climactic and intensely expressive contexts, afterwards returning to simpler structures that adhere to conventional ordering of the voices. *The Merry Wedding* in particular illuminates the shift from an SATB texture into an inconsistent blend of frequently merged and diverged voices, added and removed voices, and much wider contours in all parts. Although a clear bass/soprano hierarchy exists, the frequent dropping out of these voices nevertheless affects the texture’s coherency in this regard, with a clear bass foundation often absent.

Beyond these extracts, such a process can also be observed as the logical outcome of piled-up counter-melodic material evident in the penultimate sections of *Father and Daughter*, *The Gum-Sucker’s March* and the passacaglia *Green Bushes*.\(^\text{16}\) While seriously considering orchestral works is beyond the scope of this project, they provide ample

\(^\text{16}\) The greater part of my passacaglia is many-voiced and free-voiced. Against the folktune I have spun free counter-melodies of my own – top tunes, middle tunes, bass tunes.” Percy Grainger, “Green Bushes (Passacaglia on an English Folksong),” in Lewis, *A Source Guide to the Music of Percy Grainger*, 164.
evidence of Grainger’s self-professed penchant for countermelodies and techniques such as wide-toned scales\textsuperscript{17} and triads in conjunct motion\textsuperscript{18} leading to forms peaking with extraordinary displays of democratic polyphony. The opposite effect may also be observed in the \textit{Australian Up-Country Song}, which emerges organically into an entangled state before reposing into a clear chorale setting that only begins to involve voice crossings again towards its climax. Voice crossing is therefore often utilised by Grainger as a special effect in his music, and as a textural shift into or out of sections of freely interweaving counterpoint often surfaces where he is at his most expressive.

Finally, both \textit{Marching Song} sketches are strongly unified in their intensive and unrelenting approach to voice crossing. The frequent divisions of outer parts, including whistlers and the high number of overlapping, widely contoured voices, takes the polyphonic complexity to an extreme. While the sketches differ in many aspects throughout this study, they are clearly united in their voice crossing behaviours. Given that different voice types will naturally occupy slightly different tessituras, it is difficult to imagine achieving a much higher level of voice crossing with randomly generated melodies, confirmed through testing later in this chapter. This resonates with the idea that the voices in these sketches are totally independent, in that they may operate melodic pathways largely unaffected by the contributions of their neighbours, although sometimes merging with them if they are headed in the same direction, and diverging just as spontaneously.

\textsuperscript{17} Percy Grainger, “Hill Song No.1,” 168.
\textsuperscript{18} Ibid., 173.
6.3 Challenges with Considering Complex Voice Crossing

Huron’s definition of voice crossing, “whenever a pitch in a nominally lower voice exceeds a concurrent pitch in a nominally higher voice,”\(^{19}\) encounters several significant hurdles when applying it to scores as complex as the *Marching Song* sketches. The root of these challenges is the assumption that voice crossing is a simple and temporary device that contrasts against a natural state of ordered voicing. Finding this definition problematic is not a criticism of Huron’s research or process; it works perfectly well for understanding the music of Bach, and any occasional outlandish event would be smoothed over by the large data sets. Further, the kinds of modifications necessary to apply it to the musical extremes studied here would no doubt be deemed superfluous for the vast majority of works composed before the mid-twentieth century. Adhering to this definition, Huron tests for single voices crossing briefly over an immediately adjacent neighbour in his analysis.

However, it is worth considering the numerous inadequacies that immediately arise in dealing with these more complicated designs, and instead provide solutions to these challenges through devising an alternative method of evaluation. In order to accommodate the complexity of Grainger’s sketches, a universal system for considering crossings is required – one that makes no assumptions in regards to the degree of crossings, and has clear parameters for considering the more subjective traits such as merging. Five main challenges were identified and modifications created where appropriate.

1: Unclear and shifting distinctions between neighbouring voices

Huron’s study makes the assumption that crossings only occur between neighbouring voices: “thus in a four-part work, three neighbour pairs are examined:

bass/tenor, tenor/alto, and alto/soprano.\textsuperscript{20} This presupposes a clear hierarchy of voices, granting the ability to identify a natural low-to-high order, and therefore which voices are immediate neighbours. The issue here is that it does not account for crossings between voices that are not ostensibly neighbours (bass/alto), a problem that rapidly develops when up to twelve voices appear simultaneously in Grainger’s texture (see Chapter Four). These extended crossings become inevitable when combining melodic contours with the tessitura recommendations supplied by Gérold (see Chapter One). For instance, rather than allocating distinct bass/tenor registers, the division of men’s voices into six different voice types greatly increases the potential for overlap, with some only separated at the extremes by a tone\textsuperscript{21} and the use of contraltino, falsetto and whistling parts further compounds the similar confusions in the women’s registers. Therefore, while Huron states of Bach that: “In the case of choral polyphony … the tessituras of the vocal parts are constrained by the range of male and female voices,”\textsuperscript{22} this clearly does not apply to the ambitious, versatile style in which Grainger was composing for choir.

Further, the frequent presence of multiple same-voice types only serves to complicate the matter, especially as they are typically independent from one another and do not adhere to a strict internal sub-hierarchy, for instance a Tenor 2 voice appearing lower on the score may, in fact, be higher than Tenor 1 for the most part. Additionally, there is a risk that by only considering neighbouring voices, substantial crossings may be ignored entirely. For instance, if a middle voice crosses above a higher voice, which then in turn crosses a lower voice, the lower voice in this instance has not actually crossed its supposed neighbour (the middle voice) at all. This scenario is illustrated as events 7-9 in Example 6.2.

\textsuperscript{20} Ibid., 97.
\textsuperscript{21} Percy Grainger, “Methods of Teaching and Other Things,” 12.
\textsuperscript{22} Huron, “The Avoidance of Part-Crossing in Polyphonic Music,” 96.
In Example 6.2, even imposing an artificial ‘order’ on the lines, for instance by taking the lowest voice as written on the stave (Bass 2), or as pitched at the outset (Bass 1), or even on average\textsuperscript{23} (Tenor), and constructing a hierarchy from there fails to solve the core problem. In free polyphony, the absolute position of the voices and its relationship to localised neighbours shift constantly throughout the score, meaning that while some orders may be more justified than others, any order will still run the risk of potentially being “wrong” most of the time. Therefore, the entire concept of nominally lower or higher voices, despite a gradual high to low trend, does not function adequately to describe Grainger’s democratic polyphony.

In response to the breakdown of voice hierarchies, a solution was devised to consider the music instead as a series of local hierarchies. In other words, voices were only

\textsuperscript{23} This itself is highly problematic as voices often drop in and out of the texture.
evaluated relative to their order in the previous event. This had little meaning from a global perspective, but it allowed an important revision to be made to Huron’s definition of voice crossing:

A change in pitch in one or more voices of a texture that alters the immediately preceding order of voices.

Therefore, through removing a prescribed ordered state from the polyphony, every voice’s neighbours are constantly able to be redefined at every point in the music, allowing crossings to be considered between any combination of voices.

2: Tracking Multiple Crossings

The assumption that only neighbouring voices cross creates another dilemma – the potential for multiple crossings to occur. Huron’s system considers voices as being in two states: either crossed or uncrossed. Yet as illustrated in Example 6.3, a voice, in this case the bass, may go on to cross any number of voices – an occurrence that is not reflected through Huron’s method. As the example goes on to do, if the doubly-crossed voice changes direction and crosses back over one of these voices, the bass voice cannot meaningfully be considered both crossed and uncrossed. Therefore, treating voice crossing as a binary construct is not an appropriate approach in complex polyphonic analysis. The alternative adopted here is to consider crossings in terms of occurrences rather than durational states of being. In the case of Examples 5.2 and 5.3, eleven and three crossings have occurred respectively over the twelve events. Unfortunately, this removes the capacity to calculate crossings as a percentage of the total work, as Huron is then able to do. This is due to the fact that voices no longer have a stable hierarchy in which they possess a clear ‘uncrossed’
state, but in such works as the *Marching Song* sketches, this is reflective of the nature of the music rather than the result of a systematic weakness.

**Example 6.3: Multiple crossings of a single voice**

![Graph showing multiple crossings of a single voice.](image)

3: Crossing against Merging and Diverging Behaviour

The most problematic and subjective issue appears as a frustratingly common occurrence in Grainger’s choral music, which is the merging and diverging of voices. It greatly interferes with analysis by forcing the following question to be addressed: If two voices merge and together cross another voice, can two crossings be said to have occurred or just one? The answer to this question from an aural perspective would be largely contextual, considering merging can last anywhere from a singular unison to almost the length of the entire piece. Example 6.4 portrays two such hypothetical and similar passages where both a momentary and a more extended unison between the two voices is crossed.
over by the upper voice at the arrow. It is important to note that in an extremely complex texture, where many crossings may occur simultaneously with neighbouring and distant voices, the use of aural perception of these buried examples is effectively rendered a moot point.

Example 6.4: Crossing against Merged Voices

To remain consistent in this study, small and temporary merges spanning five or fewer events were treated as independent (Ex. 5.4A), while larger unison relationships were classified as a new single voice (Ex. 5.4B), meaning that two and one crossings would be applied respectively. Surveying the Marching Song data, this five event cut-off tended to reflect the plethora of shorter durations of four or fewer events inevitable in the dense texture, while filtering out the rarer but more committed lengths expanding five or more events. However, this requires a further qualification to be added to the revised voice crossing definition:

Voices merged for short lengths of time may still be considered independent for voice crossing purposes.

4: Classification of Voice Numbers

Another important aspect from Huron’s article has bearing on the present research. In his data collection, it appears that he groups the works based on the maximum number
of voices (e.g. six-part harmony). A potential weakness of this lies in the reality that these works actually contain large sections with fewer voices, such as during the gradual fugal entries, affecting the data's interpretation most keenly particularly in works with nominally higher voice numbers. As this issue is exaggerated in the *Marching Song* sketches, a larger analysis of voice crossing would ideally need to take into account the widely varying number of voices present at differing points in the work. The system of calculations employed in this study did not allow this, as ignoring the merging data meant that voices fell out of alignment; however, to provide a more accurate compromise, the average tone number values as calculated in Chapter Four were adopted.

5: Perceptual Challenges

Another assumption, though not directly affecting the analytical system but rather its interpretation, is the perception of voice crossing effects. The confusing aural effects of this technique have long been codified into common harmonic guidelines. Piston warns that prolonged use may risk the “lower part becom[ing] identified as the upper,” and when timbral distinctions are unavailable then dynamic contrast “is necessary to distinguish the separate voices.” This is justified by more empirical means, with Huron referring to the findings of numerous studies indicating “the perceptual difficulty of tracking auditory streams that cross with respect to pitch ... concurrent ascending and descending tone sequences are perceived to switch direction at the point where their trajectories cross.”

---

24 Piston, 81.
25 Piston, 82.
Huron, in another earlier article deals with quantifying the perception of voice numbers within a constant timbre, leading him to the conclusion that “beyond three-voice textures, confusions become commonplace.” Additionally, he notes that timbral variety and clear outer voices are easier elements to identify. These indications do not bode well for perceiving the voice crossings of Grainger’s choral music. As mentioned above, while Bach was shown to have “increased his vigilance in avoiding part-crossing” when composing more intensive music, there are clearly no such attempts in the Marching Song sketches. Added to this is the fact that voice numbers are inherently unfixed, with frequent merging, and dropping in and out of the texture. It becomes increasingly likely that the extreme many-voicedness cannot be perceived or treated as anything other than an untraceable wash of homogeneous sound. This brings to mind Grainger’s own analogy, likening his texture to Hyde Park traffic and becoming effectively texturalist in nature, anticipating Xenakis’s swarms of sound (for instance in Pithoprakta) over five decades later.

6.4 Voice Crossing Analysis

The original source data was altered to reflect the above parameters, specifically by removing merged voice data of five or more consecutive events. The interval relationships between every voice, at every event, were evaluated as being either positive (the original lower voice remaining lower in the next event) or negative (the upper voice crossing to become the lower). Neutral events (unison pitch) were taken note of for the counting of

---

28 Huron, “Voice Denumerability in Polyphonic Music” 379. According to this study, there were 64.3%/62.5% error rates in identifying the number of voices when there were four/ five voices respectively in the texture. Ibid., 374.
29 Ibid., 370.
30 Ibid., 369.
32 “I enjoy each moment for its momentary proportions, for the patterns created by the movements rather than I enjoy following the continued path of any particular vehicle.” Grainger to Parker, 28 August, 1916, 12.
merge-events but for crossing purposes were treated as non-events and removed from the analysis. The calculating process was designed to consider when the positive/negative polarities changed, indicating that one particular voice had crossed over another, and successfully distancing the system from the concept that one voice was inherently above or below another. For measuring merging/diverging activity, a parallel process was applied, counting whenever any two voices switched between positive/negative relationships into neutral relationships (unison), indicating merging or vice versa (diverging). For this analysis, these were counted together as changes in merged states. The only additional concern factored in here was ensuring singular unisons, where two voices share the same pitch at a single point, were counted as a single occurrence rather than two separate merge/divide events. For this analysis, all polyphonic works were included, including both Free Music pieces.

Table 6.1: Voice Crossings and Merge/Diverses in Studied Works

<table>
<thead>
<tr>
<th>Composer</th>
<th>Piece</th>
<th>Voice Crossings</th>
<th>Total Merges /Diverges</th>
<th>Extended Unisons</th>
<th>Singular Unisons</th>
<th>Events</th>
<th>Mean Voice No.</th>
<th>Crossings /event/voice</th>
<th>Mergings /event/voice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gesualdo</td>
<td>Moro, fasso</td>
<td>31 24</td>
<td>13 11</td>
<td>218</td>
<td>3.65</td>
<td>0.0390</td>
<td>0.0302</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chopin</td>
<td>Prelude Op. 28, No.17</td>
<td>0 30</td>
<td>18 12</td>
<td>205</td>
<td>5.62</td>
<td>0.0000</td>
<td>0.0260</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schumann</td>
<td>Triumerei</td>
<td>6 53</td>
<td>47 6</td>
<td>173</td>
<td>4.22</td>
<td>0.0082</td>
<td>0.0726</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grieg</td>
<td>Albumblätter, Op.28 No.4</td>
<td>0 37</td>
<td>31 6</td>
<td>122</td>
<td>3.91</td>
<td>0.0000</td>
<td>0.0076</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brahms</td>
<td>Intermezzo Op.118, No.2</td>
<td>0 21</td>
<td>17 4</td>
<td>204</td>
<td>4.24</td>
<td>0.0000</td>
<td>0.0243</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grainger</td>
<td>Andante Con Moto</td>
<td>0 70</td>
<td>8 62</td>
<td>211</td>
<td>4.78</td>
<td>0.0000</td>
<td>0.0694</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grainger</td>
<td>At Twilight</td>
<td>36 190</td>
<td>89 101</td>
<td>280</td>
<td>4.54</td>
<td>0.0283</td>
<td>0.1495</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grainger</td>
<td>Marching Song Sketches 1</td>
<td>141 206</td>
<td>115 91</td>
<td>210</td>
<td>6.25</td>
<td>0.1074</td>
<td>0.1570</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grainger</td>
<td>Marching Song Sketches 2</td>
<td>486 619</td>
<td>310 309</td>
<td>462</td>
<td>5.94</td>
<td>0.1771</td>
<td>0.2254</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grainger</td>
<td>Brig Fair</td>
<td>18 31</td>
<td>19 12</td>
<td>63</td>
<td>4.59</td>
<td>0.0622</td>
<td>0.1072</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grainger</td>
<td>The Gipsy’s Wedding Day</td>
<td>23 22</td>
<td>6 16</td>
<td>334</td>
<td>3.93</td>
<td>0.0175</td>
<td>0.0168</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grainger</td>
<td>Irish Tune From County Derry</td>
<td>100 111</td>
<td>41 70</td>
<td>220</td>
<td>4.76</td>
<td>0.0955</td>
<td>0.1060</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grainger</td>
<td>The Merry Wedding</td>
<td>28 37</td>
<td>21 16</td>
<td>180</td>
<td>3.34</td>
<td>0.0466</td>
<td>0.0615</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grainger</td>
<td>Australian Up Country Song</td>
<td>36 100</td>
<td>56 44</td>
<td>308</td>
<td>4.58</td>
<td>0.0728</td>
<td>0.2022</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grainger</td>
<td>Free Music No.1</td>
<td>13 0</td>
<td>0 0</td>
<td>124</td>
<td>2.99</td>
<td>0.0351</td>
<td>0.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grainger</td>
<td>Free Music No.2</td>
<td>76 22</td>
<td>5 17</td>
<td>281</td>
<td>4.7</td>
<td>0.0575</td>
<td>0.0167</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reger</td>
<td>Fugue, Op.129, No.2</td>
<td>0 4</td>
<td>0 4</td>
<td>267</td>
<td>3.19</td>
<td>0.0000</td>
<td>0.0047</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Figure 6.2: Crossings and Mergings in the Studied Works
The initial findings are summarised in Table 6.1, listing the voice crossings and merges/diverges counted across the studied works. The total merges/diverges were further subdivided into momentary singular unisons and extended unisons (merged voices that persisted over multiple events). Also included for reference are each work’s pertinent dimensions, both horizontally (the number of events) and vertically (the average number of voices throughout the sample). These results can also be interpreted in terms of crossings or merges/diverges per event, per average voice number, to provide a more comparable measurement between all the works.

As is clearly evident from their intervallic representation graphs, the keyboard works were unified in their strong, if not total aversion to voice crossings, including the Reger Fugue. Despite this, merging activity was still quite present, with only the Fugue being limited in this regard. Unsurprisingly, the highest crossing counts belonged to the Marching Song sketches, with the second accumulating many more with its higher sample size and average voice number. Also comparable in this regard were the Irish Tune and the Free Music No.2, and while The Gipsy’s Wedding Day scored the lowest, all the other choral works, including Moro, lasso showed significant and consistent crossing levels, even when containing relatively low average voice values. This indicates that crossing occurred even when likely to have tessitura “room” to coexist without it.

Merging behaviours were more widely distributed, not correlating to voice number levels, although again high levels were an exceedingly prominent feature of the Marching Song sketches. Curiously, the Australian Up-Country Song scores almost as highly. Its constituent voices are predisposed to this as every voice type contains a divisi part, and the extremely narrow opening range, while limited in crossing, consists of many voices
switching between a smaller amount of ‘shared’ contours. The *Free Music* pieces generally resist the conventional idea of merging, but this is also a result of the time-based measurements, which are much more accurate in identifying voice crossings rather than potentially momentary points of merging, which technically occur at every cross-over due to the gliding tones.

In the vast majority of cases, merging and diverging activity is more frequent than crossing. Only at the chronological extremes of the *Free Music* pieces and *Moro, lasso* can an aversion to the former be observed. Here voices maintain their own pathways, which nevertheless appear to have a more restrictive and less democratic character, as voices are very unlikely to agree and momentarily join forces. As a result, their independence is more valued and musical cooperation is limited. Observing the representations of the *Free Music* works, however, it would seem that while the quantified nature of western notation effectively ‘snaps’ voices into apparent unison, the linear, microtonal notation employed here allows voices to coexist much closer together without actually merging, most notably in *Free Music* No.2 at events 73-77 (see Chapter Three, Figure 3.14). As shown in Table 6.1, most choral works with higher merging levels are split fairly evenly between singular and extended instances; however, when these levels are low there is evidence that Grainger strongly prefers the singular variety (*Andante Con Moto, Free Music No.2, The Gipsy’s Wedding Day*). On the other hand, other composers tend to prefer extended merges, suggesting a more deliberate compositional decision on their part.

Drawing on the findings from Chapter Four, the combined data indicates that high levels of voice crossings are not guaranteed by a large amount of overlapping tessituras. It can be seen in these results that high voice numbers, or denser textures, do not automatically equate to high crossing levels, although it is increasingly likely to be at least
linked to merging. Although the crossing-dense Marching Song sketches have high voice number averages and smaller distances between voices, other works such as Australian Up-Country Song and At Twilight are also similar in their density profiles, but instead are heavily biased towards merging. Additionally, At Twilight and Andante Con Moto are comparable in mean voice numbers and density to Irish Tune, yet they contain far fewer crossings. Conversely, limited voice numbers do not always correspond to lower levels of crossing, most evident in The Merry Wedding. The near-absence of crossings through all piano works, a medium which Huron argues is most capable of hypothetically sustaining them,33 indicates that voice crossing and merging of the magnitude observed in Grainger’s choral music is largely a conscious compositional decision.

As noted earlier, the lack of a natural voice order makes it extremely difficult to gain insight into whether these values constitute a particular percentage of the work in the same way Huron does. To circumvent this limitation, a meaningful comparison can be made between the crossing levels of the ‘composed’ Marching Song sketches and those formed by randomised contours of similar tessituras. To this end, a series of pieces were randomly generated using the shuffled horizontal intervals of MS1 applied to six unbroken voices. This data was transposed up or down an octave to maintain a maximum limit within ±30 semitones of A3, but apart from this, voices were free to ramble without regard for their interaction with other voices, leading to pathways such as those generated in Figure 6.3.

33 “Only in keyboard music do we find parts that are, in principle, relatively free to traverse a substantial pitch range.” Huron, “The Avoidance of Part-Crossing in Polyphonic Music,” 96.
Figure 6.3: “Piece No. 1” Randomly Generated Melodic Contours

For the randomised extracts, merging behaviour was ignored as any rare occurrences were considered purely coincidental and not the result of a conscious decision to merge. Table 6.2 represents the various crossing counts and mean ranges for the random pieces, with sample size and mean voice numbers kept constant. The obvious inverse relationship between the former two is clearly articulated in Figure 6.4, that is, crossings of independent contours are much more likely to occur when the voices are in closer proximity caused by wider, overlapping ranges.

Table 6.2: Random Contour Voice Crossings

<table>
<thead>
<tr>
<th>Sample</th>
<th>Voice Crossings</th>
<th>Mean Voice Range</th>
<th>Events</th>
<th>Number of Voices</th>
<th>Crossings /Event/Voice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piece 1</td>
<td>78</td>
<td>33.4</td>
<td>180</td>
<td>6</td>
<td>0.0722</td>
</tr>
<tr>
<td>Piece 2</td>
<td>80</td>
<td>28.19</td>
<td>180</td>
<td>6</td>
<td>0.0741</td>
</tr>
<tr>
<td>Piece 3</td>
<td>99</td>
<td>26.66</td>
<td>180</td>
<td>6</td>
<td>0.0917</td>
</tr>
<tr>
<td>Piece 4</td>
<td>101</td>
<td>29</td>
<td>180</td>
<td>6</td>
<td>0.0935</td>
</tr>
<tr>
<td>Piece 5</td>
<td>118</td>
<td>27.49</td>
<td>180</td>
<td>6</td>
<td>0.1093</td>
</tr>
<tr>
<td>Piece 6</td>
<td>146</td>
<td>20.73</td>
<td>180</td>
<td>6</td>
<td>0.1352</td>
</tr>
</tbody>
</table>
Figure 6.4: Randomised Contour Voice Crossings Vs Mean Voice Ranges.

However, what is more significant is that the crossing levels attained randomly are generally matched by those achieved in the *Marching Song* sketches, particularly MS1, which compares comfortably with the levels generated randomly as illustrated in Figure 6.5. As this occurrence rate is on this same scale, it supports the hypothesis that the crossing rate in the *Marching Song* is not artificially inflated, i.e. deliberately creating crossings for the sake of crossings. Rather, this close result provides statistical evidence that Grainger was composing the sketches without forcing voices to observe or fit within the contours of their neighbours. Subsequently, the plethora of crossings appear to be the expected result of this compositional approach and the distinct melodic profiles of each voice were not compromised by traditional part-writing rules.
Figure 6.5: Crossing Proportions between the *Marching Song* sketches and Randomised Samples
Interestingly, it is worth noting that extreme polyphonic complexity does not necessarily equate to harmonic complexity. In MS2, one of the passages with the most complicated appearance (b.32-34) can easily be conventionally analysed in the key of Bb, as Example 6.5 demonstrates, showing little more than applied chords and mixture in an otherwise innocuous journey from IV to I over a tonic pedal. Unlike much of MS1, with its high pitch-class circulation (outlined in Chapter Seven) the chromaticism here is limited to a single A♭ and the wide-toned, arpeggiated nature of most upper parts greatly limits the presence of superfluous chromatic passing notes.

Example 6.5: Harmonic Reduction of MS2, b.32-34

However, Grainger’s notation of this passage horizontally belies its harmonic simplicity. Figure 6.6 outlines in close detail the paths of the nine independent voices over the twenty-four quaver values. Conventional single voice crossings\(^{34}\) are noted in black while on three occasions multiple pathways coalesce at a more elaborate crossroads, noted in red. The idea of polyphonic lines as mountain ranges, together with the more texturally dense Free Music examples, are evoked through this excerpt.

\(^{34}\) NB: A ‘single voice’ in this context can include multiple merged actual voices.
Figure 6.6: Intervallic Representation of MS2, b.32-34
Visibly underscoring the weft is the Bb Pedal of “a few tenors,” the only stable element, supporting the extensive crossing between two boy soprano parts, three boy alto parts, and three whistlers. In this section alone, voice crossings occur on forty-one occasions and between different voice types including the second altos and first whistlers. Even more remarkably, the bulk of these (thirty-five crossings) are clustered within a ten-event gap (272-282), equating to three and a half crossings occurring at every notated quaver beat on the score. Therefore, Grainger combines tonal function with vocal independence, with each contour addressing the vertical requirements, irrespective of the actions of their neighbours.

**Conclusions**

In conclusion, extensive voice crossing is one of the most remarkable and defining qualities in Grainger’s polyphony. The need to make sense of Grainger’s voice crossings demanded a new, universal way of quantifying this behaviour by challenging previously reasonable assumptions. Most importantly, by disregarding the concept of voices as belonging to low-high order, and by considering voice crossing as a phenomenon that may occur between any combinations of voices, it is possible to gain an understanding of the full complexity of Grainger’s method.

Present to some extent in all his studied choral works, the observed voice crossing spectrum ranged from incidental to saturated. At the extreme in the *Marching Song* sketches, the crossing levels attained were shown to match those generated by randomised melodic contours in a six-part texture. This suggests that while adhering, at times, to conventional harmonic patterns, the *Marching Song* sketches were indeed composed in a horizontal fashion, in accordance with Grainger’s statement: “my chords grow out of the
moving paths of my polyphony, but I listen to the results as a chordal result rather than a polyphonic result.”

Although voice crossing may become inevitable with increased polyphonic complexity, as Huron noted: compositional efforts can be taken to greatly reduce the impact and extent if desired. As voices grow in number and the texture becomes more crowded, the options of using either merging and/or crossing are presented. The results here show that Grainger utilises both heavily in his choral music, and while the usage indisputably spikes in the Marching Song sketches, numerous later works come close in both regards, indicating these behaviours are indeed an important compositional technique.

Considering the crossing phenomenon’s democratic implications, even at relatively low levels there are serious implications for aural perception, and in the Marching Song sketches it is virtually impossible to follow any given melodic pathway. Here, the mass of independent voices, each distinct and equally prominent, force an amalgamated impression on the audience, where the perceived texture is an ever-changing blend of voices and only the overall result is perceptible. Also in a constant state of flux are the mix of unified, clashing and harmonious relationships between the parts – a struggle reflecting the complex and multivariate agendas of democratic constituents, and repressing the clear musical aims of more conventional polyphony.

---

35 Grainger to Parker, 28 August, 1916, 11.
Chapter 7

Horizontal Elements of Texture

Grainger’s often rambling structures (a description levelled by John Bird at the *Marching Song of Democracy*) and fundamental harmonic simplicity (by twentieth-century standards) position his music as relatively shallow when visited through conventional forms of analysis. Gillies hints at an alternative when remarking that Grainger’s texture “was the product of ... coordinated mass movement,” and illuminating the characteristics of such movement is critical to understanding the product. To partially address this statement, this chapter assesses the selected works from a horizontal perspective with data that has been converted into modulo 12 form, thereby compounding the data into values based on their pitch class. It does this through three main analytical methods: pitch-class circulation, paired pitch-class relationships, and paired interval relationships. While these methods have their counterparts in the later vertical analysis, here they are largely dealing with the linear relationships between consecutive pitch classes.

Observing music in terms of pitch-class values or compounded intervals loses some critical elements in Grainger’s notion of musical texture. Specifically, this affects the recognition of exact intervals, chord structures and idiosyncratic musical tendencies that readily blend into the wash of homogeneity when the underlying mechanics of music are brought into focus. However, through the abstraction afforded by set theory and pitch-class relationships, other advantages are gained that can nevertheless serve the overall objectives of this study and also allow for meaningful comparisons. As the studied works...
cover a wide arc on the tonal/atonic spectrum, this analysis is primarily linked to ideas of pitch equality, differentiating between diatonic and chromatic patterns, and the intervallic connections between them. Coupled with the Forte analysis in the following chapter, the aim here is to objectively evaluate how the Marching Song sketches are positioned in terms of their chromatic saturation and pitch equality. This occurs relative to the other studied works, and seeks to outline the stylistic causes behind these pitch-class and intervallic relationships.

The methods employed throughout this section have precedence in the analysis of Dmitri Tymoczko\(^3\) and Jan Beran\(^4\). Both authors approach the methods used here from a largely theoretical perspective, using the techniques with real examples and objectives in microcosm, but not employed in response to any specific research question. Tymoczko’s pitch class circulation process allows him to examine a broad assortment of works, both by the same and different composers, and locate them on a spectrum. The results are a useful indication of the number of pitch classes used over various spans of time, indicating relative chromaticism and other related features. An important term Tymoczko uses to approach this topic is “macroharmony,” which he defines as “a harmonic penumbra … extending beyond the boundaries of the temporal instant.”\(^5\) This is justified by his assertion that “musical experience is strongly coloured by what we have heard recently,”\(^6\) and so a macroharmony may be also explained as the collection of notes used within a (typically localized) window of music. His research is critically dependent on the use of


\(^5\) Tymoczko, 154.

\(^6\) Ibid.
macroharmonies to understand and contextualize pitch-class circulation, providing a means of quantifying chromaticism.

Beran’s approach to modulo 12 analysis demonstrates that music “based on scales ... is usually not equally distributed,” and his system effectively highlights the inevitable irregularities caused by the western tonal hierarchy. At the core of his argument are the observations of both consecutive pitch and interval pairing profiles, with this dual perspective encompassing tonal and atonal traits. This avoids some of the criticisms levelled at Tymoczko’s writing, specifically Dave Headlam’s lament that “the interpretation of non-tonal music in terms of intervals rather than pitch-class content is, of course, basic to our understanding of this music.” However, while both analysts’ methods have been modified to some extent in this chapter, from the outset they seemed highly promising applications in isolating and contextualizing the linear aspects of Grainger’s complex polyphony.

### 7.1 General Technical Considerations

Omissions to the complete list of selected works for this study were required due to the horizontal focus. Most significantly, samples were restricted to pieces with clear polyphonic lines, and so Schoenberg’s Klavierstücke, Op.11, No.1 was disregarded. Unfortunately, both Free Music examples were not suitable as well due to the technically infinite number of pitch classes that the graduated lines presented. Even when quantified into quarter-tones, this would still require an extremely modified process, and ultimately create results on an entirely different scale to the conventionally notated scores, thus making comparison difficult. Also the necessity to measure in quantified increments would

---

7 Beran, 64.
inevitably omit certain in-between pitches that may be of statistical significance, again
providing results that would be tenuous to compare with the other works. Nevertheless, an
approximation of the more active *Free Music No.2* was attempted in the pitch-class
circulation and paired pitch class. Finally, due to scope limitations, only the Brahms
Intermezzo was retained as representative of romantic piano repertoire, due to its close
structural relationship and chronological proximity to the *Andante Con Moto*. As a result,
most of this chapter draws on Grainger’s choral music and the Reger Fugue, making ten
works altogether in this chapter.

The source data needed a small amount of modification in order to reflect the
horizontal relationships accurately. For pitch-class circulation, it was imperative for the
process to ignore periods of silences and temporary breaks in a vocal line with the only
requirement being that the pitches were to be counted rather than contextualized. This was
a pertinent issue when considering the individual voice circulations. Contrary to this, breaks
were routinely factored into paired pitch and interval relationships, as a voice dropping out
typically re-entered after one or more changes in harmonic, or indeed macroharmonic
context, thereby affecting any melodic connection between the last pitch of one phrase and
the first of the next.

For the methods in this chapter, it was common to ignore any duplicated data. For
instance, paired intervals that occurred in two temporarily merged voices were only
counted once. In the combined pitch-class circulation method, the question of including
identical segments of merged data was automatically rendered obsolete as the calculating
system ignored any duplicated pitch classes. However, when considering individual voice
pitch-class circulation, such data was included as even temporary divisions of a voice
created a distinct melodic pathway with a potentially altered circulation. By representing each linear possibility separately, this did not result in any unwanted bias or duplication.

There were, however, a few grey areas to this, particularly in the isolated solo lines in At Twilight and The Merry Wedding, where the soloist is not obligated to rejoin the fold. In these cases, only the explicit solo lines were included, often resulting in relatively limited data sets. In MS2, Grainger constructs a complex web of solo and sectional chorus lines where the various soloists are instructed to integrate back into the majority, sometimes seamlessly and at other times “when rested.” On these occasions, all specified or likely data from both solo and chorus was used to construct a hybrid solo line that represented a viable melodic pathway. Furthermore, Grainger was at times ambiguous in the redistribution of amalgamated lines, for instance when four whistling parts were rearranged into three. Ultimately, the exact pathways in this respect would vary from group to group and be dependent on ensemble numbers, and so the data used here represents just one possibility.

One last point of difference between the two systems was a final alteration of data converted into modulo 12 for the paired pitch-class analysis. For ease of comparison, rather than maintain the standard A3=0 value used in converting the scores to a numerical form, it was logical to have the data reflect the often tonal centricity of the music. To this end, the data was permutated for each piece so that the most frequent pitch (most often the tonic) became the central pitch and positioned along the lines $x=0, y=0$ with the others following incrementally in semitones. In pitch-class circulation, however, there was no need to circulate the data to a central pitch; the windows only considered the number of different pitch classes within them, not the actual quality of the classes. Having established these

---

9 Percy Grainger, “Marching Song,” MG15/4-5:1, 8.
general considerations, each of the major analytical sections – pitch-class circulation and paired pitch/interval distribution – commences by further outlining the methods used.

7.2 Pitch Class Circulation Methodology

Tymoczko defines pitch-class circulation as a representation of “how many pitch classes are used over various spans of musical time.”\(^\text{10}\) In other words, as a piece of music unfolds, the collection of pitches it encompasses expands depending on how large the viewer’s window\(^\text{11}\) is and its location in the piece. A serialist, freely atonal or even highly chromatic tonal work will only require small windows at any location to gather all twelve pitches. Meanwhile, work limited strictly to a pentatonic scale may only uncover five pitches throughout the entire piece. Most Western music, as Tymoczko observes,\(^\text{12}\) exists somewhere in between, as even conventionally diatonic music, given a large enough span, will tend to gradually include all or most possible pitch classes at a much slower rate. Caused by modulation or occasional embellishment, such pieces therefore require much larger viewing windows to ensure the collection of all possible pitch classes. Therefore, Tymoczko places windows of all possible sizes to every applicable point, and averages them in order to indicate how many pitch classes a viewer may expect to find with a randomly placed window of each magnitude.

The primary stage of Tymoczko’s method involves graphing this pitch class circulation data, providing a generalized and “quantitative grip on how ‘chromatic’ [the music] is.”\(^\text{13}\) As the quantity of pitch classes are considered, rather than their actual values, it overrides the potential flaw with other forms of whole-piece analysis, i.e. a failure to

\(^{10}\) Tymoczko, 158.
\(^{11}\) A group of consecutive notes.
\(^{12}\) Tymoczko, 160.
\(^{13}\) Ibid., 159.
accommodate modulation. To elaborate on this weakness, the first section of a two-section work might contain a macroharmony strictly drawing on seven diatonic pitches in a major key (C major for instance) but could modulate in the next equal section down a major third (Ab major), resulting in the general distribution of Figure 7.1. Surveying the piece’s pitch distributions as a whole might lead to the conclusion that the piece is in C Major, although with considerable chromaticism. The tonic, subdominant and dominant preferences, as well as lack of tritone, create a similar outline to the major key probe tone profiles described by Krumhansl,\(^\text{14}\) with C as the tonic.

**Figure 7.1: Pitch Class Distribution of C/Ab Combined Key Areas**

![Pitch Class Distribution of C/Ab Combined Key Areas](image)

Viewing the piece as pitch class circulations through windows, on the other hand, results in a very different result. Figure 7.2 shows the two different possibilities; the shallow solid line reflecting the diatonic modulation of the above scenario, and a dotted line with the same pitch classes randomized, showing how a truly chromatic piece in C Major

---

(suggested by Figure 7.1) would be represented. Due to the reflection of modulation, pitch windows are a superior process when describing degrees of chromaticism, taking large-scale context and macroharmonies into account.

Figure 7.2: Diatonic Modulation Vs. Random Distribution

The portrayal of circulation data contains several important attributes: the initial rise, the sloping, and the levelling off. As Tymoczko notes, a steep rise that approaches the pitch class’s ultimate level “reflects the fact that, over short time scales, … [composers] tend to exhaust a particular collection of notes,” calling them “macroharmonically static” works. Less dramatic rises tend to precede a more gradual slope as the pitch window widens and the initial pitches of a macroharmony are subject to incremental change.

15 Tymoczko, 159.
16 Ibid., 160.
17 In a strict serial work is an important exception to this, as windows greater than twelve will always yield twelve pitches.
Generally, moderately rapid slopes indicate higher pitch cycling, while more gradual ascents suggest that “the macroharmonies are themselves changing, albeit at a much slower rate.”\(^{18}\) The ultimate leveling off indicates the maximum amount of pitch classes to be found anywhere in either the piece or its constituent vocal lines, depending on the graph type (combined or individual voice circulation respectively). While examining whole works was usually sufficient to provide a smooth line, when smaller data sets were involved it was not uncommon to observe a second rise briefly before levelling off. This indicated that some infrequent pitch classes only appeared toward the extremes of the sample, and were only able to be counted when the pitch window approaches its maximum size.

There are, however, a number of disclaimers to this method, some of which were mitigated through modification in this study. Tymoczko notes that by themselves, such graphs are “very crude tools that do not tell us anything about the character of the macroharmonies; furthermore, they can be influenced by textural features independent of the music’s underlying harmonic structure.”\(^{19}\) He notes the near identical high pitch-class circulation in the music of Reger, Schoenberg and Coltrane,\(^{20}\) as the method at this stage fails to distinguish between intense chromaticism, atonality and rapidly modulating music respectively. Though the analysis below shows this is certainly an issue that applies to some of Grainger’s music, it does provide useful observations that serve to initially categorize the music into broad streams.

To address these concerns, Tymoczko employs set theory to illuminate the macroharmonic content, which is likewise used in Chapter Eight. Additionally, the choral (or choral-esque) nature of the majority of the music examined here minimized his concern of

\(^{18}\) Tymoczko, 160.
\(^{19}\) Tymoczko, 158-9.
\(^{20}\) Ibid., 160.
bias through textural features. The choral style provided a relatively stable platform for comparison, showing extremely limited use of “tremolo or other repetitions”\(^{21}\) and a similarly narrow range of tempos. Tymoczko’s method also finds it “necessary to ‘linearize’ simultaneous attacks, so that one comes before the other.”\(^{22}\) Achieved in a randomized fashion, it relied on the assumption that “the size of the data set will wash away any inaccuracies introduced.”\(^{23}\) While the original process is replicated with this weakness in the first part of this chapter, it is fortunately negated when considering individual voices, as these are already linearized by nature.

### 7.3 Combined Pitch Class Circulation

Each selected work appears combined in Figure 7.3, and for clarity the same data is divided in Figures 7.4/7.5 as pieces composed before and after 1901/2, with the *Marching Song* sketches present in both. Some general observations can be readily made, most notably that Grainger’s choral writing across three decades is mainly confined to a narrow band of moderate pitch-class circulation, accumulating between ten and eleven pitch classes on average when examined through a window of eighty attacks. This notably includes MS2, and the earlier piano works: *Andante Con Moto* and the Brahms Intermezzo.

---

\(^{21}\) Ibid., 159. Footnote.

\(^{22}\) Ibid. Note that this is a combination of both horizontal and vertical aspects of texture.

\(^{23}\) Ibid.
Figure 7.3: Pitch Class Circulations

![Graph showing pitch class circulations with various lines representing different compositions.]

Figure 7.4: Pitch Class Circulations Pre-1902

![Graph showing pitch class circulations for compositions prior to 1902.]

252
Subsequently, there are only three distinctive cases to consider. Firstly, the change of macroharmonies for *Irish Tune*, for all its complex, voice crossing texture, is comparatively limited, drawing on additional notes at a much slower rate and indicating a strong adherence to diatonic writing. Conversely, at the most extreme level of chromaticism, and in line with Tymoczko’s study, is the Reger Fugue. Effectively equivalent in this regard to the atonal music of Schoenberg, this result is largely predetermined by the fugue’s theme (Ex. 7.1), which possesses all twelve tones and thus ensures the high level of pitch-class circulation.

Example 7.1: Theme of Reger: Fugue, Op.129, No.2

\[ \begin{array}{c}
\text{Molto Sostenuto (} \text{p}=42) \\
\text{PPP} \\
\end{array} \]

\[ \begin{array}{c}
\text{Tymoczko, 182.} \\
\text{Max Reger, *Neun Stücke für die Orgel*, op.129, (Boston: Boston Music, 1912), 6.} \\
\end{array} \]
Closely mirroring the fugue’s circulation, MS1 can be observed as a considerable outlier, being much more chromatic than its compatriots through the appearance of all twelve pitches at a faster rate than almost any other Grainger work. Only *Brigg Fair* levels off slightly earlier at eleven pitches, however this is unsurprising given that this is the shortest extract and features an almost complete descending chromatic scale in the tenor solo. MS1 dramatically condenses its ten to eleven pitch class average between windows of twenty-five to forty events, as opposed to eighty for most other works, and cycles beyond the common diatonic set at over twice the rate of his other choral works. Furthermore, while the rise of the Fugue is more sharp than MS1, the point at which it levels off is actually slightly later. Therefore, while the Reger is the more chromatic of the two – in that the small-to-mid-sized windows tend to include more pitch classes – the point at which a window size will ensure all twelve tones is effectively identical.

What is most significant about this finding is that MS1 is so at odds with MS2; even the preceding *At Twilight* is considerably closer to the first section’s profile. While Tymoczko points out that sets of works by the same composer may contain a great deal of pitch-circulation variance, this trait of variance can be observed further in the *Marching Song* sketches, as two sections that were ostensibly part of the same work are nevertheless extremely polarized in their cycles. This is strong evidence suggesting a fundamentally different compositional approach, particularly in terms of macroharmonic cycling, and enabled through the relative absence of thematic material in MS1. Further, the high degree of similarity between MS2 and Grainger’s other works, and the fact that much of this draft is thematically related to the published versions, indicates that MS1 singularly represents the anomaly in this case.

---

26 For instance, the Chopin Op.10 and Op.25 Etudes are shown to encompass “a vast array of macroharmonic states, a diversity comparable to that of the entire history of Western music.” Tymoczko, 162.
To explore these differences more closely, both sections of the *Marching Song* sketches could be subdivided in order to separate the more constrained openings from the more polyphonically complex material. MS1A was committed into the orchestral version relatively untouched in terms of its notation, replete with Theme 1A, and despite the complexity and density it still maintains a harmonic clarity that is lost in MS1B. Similarly, as observed in Chapter Three, the opening polyphony of MS2 is conservatively structured, undergoing a brief canonic transition between events 100-115 before dissipating into the more typical complexity of the texture. The above method was repeated using the separated data sets for both of the *Marching Song* sketches, shown in Figure 7.4. Also included for reference were the Reger Fugue and *The Merry Wedding*.

**Figure 7.4: Pitch Class Circulation of Sketch Subdivisions**
Considering the significant data fraction occupied by both of the opening subsections, their separation can be seen to have produced a noticeable impact. It is unsurprising that the exclusion of MS1A leads to an even faster overall pitch-class circulation in MS1B. While MS1A’s circulation is still high compared to the other Grainger works, it is still markedly low enough to bring down the considerably faster averages of MS1B. Although still not as steep in its rise as the Reger Fugue, MS1B now reaches the ten-to-eleven pitch class average between windows of twenty-three to thirty-five attacks, while MS1A’s drops to thirty-five to fifty. Therefore, Grainger’s return to the sketches in 1902 was marked by an atypically rapid approach to pitch-class cycling.

The divisions of MS2 present a very different story. While a smaller sample, MS2A displays an abrupt stunting of its circulation around the six-pitch class average. As the window size increases, this eventually catches up to the original Section 2 line and then rapidly ascends to twelve pitches before capping at its maximum window range (170 attacks). This is reflective of Tymoczko’s caution that slower (and likewise smaller) pieces may tend to appear more chromatic, lacking the diatonic filigree to steadily pace the slope’s gradient. In other words, while pitch-class windows larger than 129 attacks in MS2A will always capture the twelve chromatic pitches, smaller window sizes suggest a notably reduced collection of macroharmonies, echoing the modulation issue explored in Figure 7.2. Conversely examining MS2B alone does create a slightly steeper rise, but it also results in a noticeably shallower levelling and a contour strongly resembling the *Merry Wedding* extract. Ostensibly the omission of the first section, with its first phrases centered around C# Mixolydian, results in pitch classes that do not readily appear in the following diatonic

---

27 Roughly a quarter of the data for each.
28 Tymoczko, 159. Footnote.
sections (in Ab and Eb). Overall this is more evidence that MS2 relies on a different macroharmonic structure than its counterpart.

As mentioned earlier, an approximation of Free Music No.2 was created to emulate its pitch class circulation and in the gliding notation, an attack was interpreted as a quarter-tone minimum change of pitch. The analytical method’s measurement of this change in attacks partially negated the fact that the Free Music data was originally measured in time increments, as lengthy static durations were fortunately ignored. However, it was not practical to rebuild the complex calculation process\(^\text{29}\) to encompass a doubling of its variables from semitones to quarter-tones, especially as the quarter-tones were themselves an arbitrary measurement. As a compromise, the quarter-tones measured in Free Music No.2 were randomly rounded up or down to create three different data sets. As can be observed in Figure 7.5, this further approximation had little effect on the contours, which most closely match and ultimately exceed the circulation of the Reger Fugue at windows of around thirty-five events. While making comparisons between graphic and conventional notation requires caution, it is significant to find that the high circulation rates of MS1 break away from the typical Grainger circulation band and reach out towards those of his “only important contribution to music”\(^\text{30}\) – music that was explicitly and freely devised outside of a tonal scheme.

\(^{29}\) Even the twelve pitch class form required approximately 25,000 individual calculations.

7.4 Individual Voice Pitch Class Circulation

In addition to Tymoczko's original process, the horizontal emphasis Grainger places on texture also warranted applying the method to the individual voices within a piece, as well as the amalgamated texture. As mentioned earlier, this eliminated some of the inherent flaws in this method, especially as the focus shifted from the inter-piece to intra-piece differences, negating simultaneous attacks, tempo, repetition and other affecting devices. Despite the change in subject, the line of enquiry was essentially unchanged: a comparison of pitch class circulation. Examining the voices by themselves, albeit out of context, provided an important aspect, so far overlooked, when considering the work as a whole: the potential to correlate chromaticism with a specific voice type (i.e. inner, upper or lower). This characteristic was essential to revealing the equality of the chromatic
distribution, and whether this had possible democratic connotations, particularly in the

*Marching Song* sketches.

The more arduous process of applying this technique to every voice in each studied
work necessitated individual graphs for intelligibility; the twenty-three distinct lines in MS2
alone forced this practical consideration. Due to the smaller data sets, the circulation
graph’s scale was set to a smaller maximum of 150 attacks. When individual voice sizes were
smaller than this, the maximum window value was indicated on the line by a similar
coloured “X” (or circle/diamond variant when multiple line colours were the same) and the
voice continued as a flat line at its maximum pitch number. Further, as the sample sizes
were too small for individual voices, the A/B subdivisions of the *Marching Song* sketches
were not considered. Coloured lines were consistent with the coding for the intervallic
representations from Chapter Three, generally black for bass lines, blue for sopranos and
the red to green spectrum for the inner voices. These representations are listed below as
Figures 7.6, A to J.
Figure 7.6A: Brahms: Intermezzo Op.119, No.2

Figure 7.6B: Grainger: *Andante Con Moto*
Figure 7.6C: Grainger: *At Twilight*

Figure 7.6D: Grainger: MS1
Figure 7.6G: Grainger: *Irish Tune*

![Graph showing the average pitch classes included vs. size of pitch window (attacks) for *Irish Tune*.]

Figure 7.6H: Grainger: *The Merry Wedding*

![Graph showing the average pitch classes included vs. size of pitch window (attacks) for *The Merry Wedding*.]
Figure 7.6I: Grainger: *Australian Up-Country Song*

![Graph showing the average pitch classes included vs. size of pitch window (attacks) for Grainger's Australian Up-Country Song.]

Figure 7.6J: Reger: Fugue Op.129, No.2

![Graph showing the average pitch classes included vs. size of pitch window (attacks) for Reger's Fugue Op.129, No.2.]

264
Many of the observations made in the previous section are upheld in this second data interpretation; for instance, the limited maximum pitch class values and gradual slope of the Irish Tune correlate to its limited combined profile. However, some new traits also emerge. From a general overview, they may be divided into two categories. The first category – consisting of the Reger Fugue, At Twilight and MS1 and, to a lesser extent, the Brahms Intermezzo and Irish Tune – is characterized by the many individual strands that possess similar circulation rates.\textsuperscript{31} The other works all have a much greater degree of variance in this regard; the construction of individual voices often bear markedly different circulations to one another. MS2 belongs to this latter group, with its impressive array of voices requiring vastly different window sizes. Generally appearing more chromatic in the bass lines and less in the more active soprano lines, the required windows to reach eleven pitch classes ranged from 50 to 120 attacks, with several voices only achieving smaller maximum classes. Compared to the more chromatic music studied, even the most chromatic lines were still relatively slow in this regard.

This is, however, only one measure of comparison, and various other trends can be observed. The Brahms Intermezzo and Andante Con Moto share the same fundamental distribution of their voices: faster cycling in soprano and bass parts, and slower inner voices. Both contain notably more limited bass samples, contributing to the higher pitch-class cycling. Three deductions connecting the two keyboard works can be made from the observation of their pitch-class circulation:

1) Upper voices are more chromatic

2) Inner voices are more likely to be diatonic but change pitch frequently

\textsuperscript{31} This was classified as when the vast majority of voices shared a similar rise slope contained within an average pitch-class discrepancy of 1.5 classes, notwithstanding a few outlying voices, such as the tenor solo in At Twilight.
3) Lower voices are also chromatic, but change pitch less frequently

As is shown in Figure 7.7, this behavior can be readily seen through comparing three voices of the Brahms Intermezzo through the same mid-sized window of twenty-eight attacks. The pitches collected in this window were then represented in Figure 7.8. In this example, the new pitch classes are demarcated by whole noteheads as opposed to ‘X’ noteheads, which indicate repetition. The upper and lower lines of the Intermezzo, both smaller data sets than the representative inner voice, contrast in the speed at which new pitch classes are included. As predicted, the small set of the low Voice 1 undermines its relatively confined pitch class circulation. Although the small maximum window of sixty-four attacks will eventually encompass all eleven pitches the line contains, as shown in this figure, this attack window focuses mainly on only four classes A, B, E and F#, with singular occurrences of D and D#. Voice 5, on the other hand, commences with a chromatic cluster that expands to form a nearly complete chromatic scale macroharmony in the same window, confirming it as the most chromatic line. Inner Voice 4 is found to draw on the notes of the diatonic G major scale, and oscillates exclusively between them. Being a substantially larger data set, the extended time at just five pitch classes in this sample alone (and perhaps beyond) draws down the average number for small- to mid-sized pitch-class windows, resulting in its more gradual incline. According to the circulations of Figure 7.6B, these traits are even more exaggerated in Andante Con Moto.
Both studied extracts, Brigg Fair and The Merry Wedding, and Australian Up-Country Song, produce some of the most diverse results. In a tonal setting, this may indicate two possibilities. Firstly, that certain voices feature more elaborate chromatic writing while others are more diatonically stable, as was seen in the Brahms Intermezzo; or secondly, that particular voices feature phrases across shifts in macroharmonies while others do not. As an example of the latter, two contrasting vocal lines from The Merry Wedding can be viewed using the same twenty-eight attack window. This is represented in Figures 7.9 and 7.10, with the solo soprano 1 and the basses shown with the phrases marked. Both voices contain the same macroharmony in their first phrase, however the soprano line appears in a changed harmonic context and collects a further three pitch classes. The bass window, however, goes through a further three phrases before a new pitch is added, greatly slowing
its circulation. Indeed, the next two phrases feature only six of the initial eight classes. From a vocalist’s perspective, the static nature of the bass part in this extract makes it much less chromatic in nature than its soprano counterpart.

Figure 7.9: Pitch Classes in *The Merry Wedding* (28-Attack Window)

These patterns are echoed in the other works, with the steadily descending tenor solo line of *Brigg Fair* cycling through ten pitch classes in a mere thirteen events, causing its steep rise. Looking at the other voices, the lows are free to cycle constantly through ten pitch classes, while the concurrently sounding middles (baritones) are strictly confined to the diatonic F major scale. These three macroharmonies are shown in Figure 7.11. Similarly, the *Australian Up-Country Song* contains a remarkably large spread through consistently small data sets, ranging from a strictly diatonic soprano (again F major) to a highly chromatic bass line. The mature Grainger choral profiles show no consistent pattern of faster or slower pitch-class circulation cycles attributed to specifically upper, inner or lower lines. Instead, published Grainger choral works are unified in that they do not appear to maintain any
hierarchy or predestined role dependent on vocal part, in the same way that the Brahms Intermezzo, the imitative *Andante Con Moto, At Twilight* and the Reger Fugue appear predestined.

**Figure 7.11: Macroharmonies in *Brigg Fair* (Maximum attack windows)**

Of more direct interest to this study are, of course, the *Marching Song* sketches. As noted earlier, the individual voices of sketches show radically different attributes – a finding consistent with the combined pitch-class circulation result. MS1 demonstrates the closest consistency in pitch class cycling by far, with only the baritone line as an outlier, it being the only part that disappears for a considerable length of time (sixty-six events) after making its first appearance. All the other voices, regardless of part, feature intensely chromatic writing from the performer’s perspective, cycling through the twelve tones generally every thirty-five to forty-five pitches. Unlike the published choral works, there is little to distinguish lower, upper and inner voices and, as observed in Chapter Three, the voices were already disrupted in terms of clear register hierarchy by the inclusion of numerous bass and soprano lines.

The Reger Fugue still possesses a slightly steeper rise in the two outer voices, averaging ten pitch classes at windows of fifteen events for the bass line, compared to eighteen in MS1. However, unlike the combined graph, the various MS1 lines begin to
overtake the Reger outer voices during the levelling off at windows of around twenty-five events, while all voices simultaneously surpass both of the slower inner fugue voices at this same point, excluding MS1’s baritone line. There are a couple of additional points of difference to take into account, specifically that in MS1 Grainger is writing parts with consistently high circulation levels across almost three times as many independent lines than the Reger Fugue. Also, in composing for an unaccompanied choir rather than keyboard, this imposes an impressive degree of difficulty on the performers. While the Fugue has a higher rate of pitch-class circulation overall, its twelve-tone theme does not continually feature in each voice. Although this disregards harmonic context, from a linear viewpoint this results in constituent parts that are, on average, slightly less embracing of twelve-tone chromaticism than those of MS1 when viewed as individual lines.

In considerable contrast, MS2 reflects its polyphonically complicated and lengthy nature with a wide range of circulation patterns. Like many of the other Grainger choral works, the voices with shorter fragments tend to limit the maximum number of pitch classes, generally affecting the largely absent lower men’s voices. Conversely, the much slower pitch-class cycling of the upper voices, expanding in some cases past the x-axis scale, indicates that the much slower shift in macroharmonic content also affects the individual lines, being much less prone to passing chromaticism. Voices only begin to guarantee covering all twelve tones at the seventy-seven event window mark – more than double the window size in MS1.

Figure 7.12 offers typical examples of the inter-voice circulation relationships evident in the Marching Song sketches (7.12A/C) and the Reger Fugue (7.12B) through examination of windows covering two simultaneous, yet independent voices from each of the scores. Each example is subdivided into two phrases to indicate possible macroharmonic
shifts, effectively providing three representative snapshots that the above method would consider. Initial instances of a pitch class in each voice (i.e. what would be counted by the system) are marked with an accent.

**Figure 7.12A: Paired Voices in MS1: b.11-14**

**Figure 7.12B: Paired Voices in Reger: Fugue: b.14-17**

**Figure 7.12C: Paired Voices in MS2: b.33-35**
Several trends are clear: as the high pitch-class circulation predicted, both of the voices in the short MS1 extract contain the twelve pitch classes within this small window. This is also the case for the Reger Fugue, except for one missing pitch in Voice 4, and both extracts feature ten pitch classes in the first phrase. In strong contrast, MS2 is completely diatonic, remaining in Eb major even though it required slightly larger windows to capture the phrasing than the other works. While macroharmonic content is discussed in greater depth in Chapter Eight, it can be observed here operating at a variety of levels. Signified by the connecting arrows, both voices of MS2 draw on the same seven-pitch classes very rapidly, indicating that the diatonic outcome of the pitch class circulation for this snapshot is, unsurprisingly, the same collection of diatonic pitches.

The more rapid circulation of the Fugue and MS1 connects their respective two voices in a somewhat different way. In the Fugue, of the ten pitch classes present in b.14-15, five of these are common to both voices, while the remaining five must wait until the second phrase to occur in the opposing voice. This process is more exaggerated in the MS1, where there are only three common tones and seven-pitch classes crossing over into the second phrase. This suggests that although the rate at which the macroharmonies shift in each MS1 voice is comparable to the Fugue (in that combined they both include ten pitch classes per phrase), the distribution is slightly more lopsided in the MS1. The underlying macroharmonies of each voice are more distinct and the cycling process ‘exchanges’ more pitch classes within the context of the larger window. In other words, the voices in MS1 appear to be less in sync with one another and draw on different collections of pitches at different times.

It is worth considering whether the findings noted above reflect any wider democratic values Grainger attached to the *Marching Song*. One constant thread observed
through most of the choral works was the lack of consistent circulation levels in any particular voice type. Lower, upper, inner and solo voices all display a considerable variety of circulation rates on the diatonic/chromatic spectrum. Although this principle is not directly apparent in MS1, it can be argued that it takes democratic independence a step further, with evidence that the macroharmonic content of individual voices are more independent of their neighbours. Furthermore, the high degree of pitch-class circulation in MS1 and its constituent voices prohibits any single voice predominating, with either clear diatonic or strikingly melodic lines – a process to which the other choral works were more susceptible.

Considering the pitch-class circulation divide between the two Marching Song sketches, there was strong evidence that they are fundamentally different works when viewed through this lens, despite very similar voice crossing, tempos, rhythms and other textural aspects. MS1 was found to be the anomaly, being closer in circulation to the Reger Fugue, and by extension closer to free atonality, than any of his other choral works. The trends observed in MS1 also remarkably anticipate the later characteristics that would be observed in Free Music No.2. The fact that these works are from opposing ends of Grainger’s compositional career link the 1902 Marching Song sketch to his late experiments through a horizontally-focused and athematic approach to polyphony.
7.5 Paired Relationships Methodology

Fundamentally, the paired pitch-class method shows the likelihood of any given pitch class being consecutively followed by another in a given work, and is a more sophisticated method than simply examining pitch-class distribution. Similarly, the system can also be applied to consecutive intervals, provided they are compounded into modulo 12 form, and thereby depicting “in which sequence intervals are likely to occur.” The idea of using these methods to explore a piece in terms of interval pairs is a direct adaptation of Jan Beran’s theory. Although the paired pitch-class concept is more thoroughly explored in Beran’s chapter on circular statistics, examination of both pitch class and intervals can utilize the same fundamental system.

In terms of pitch class, this method is an effective test for revealing inequalities, specifically reinforced and avoided relationships, symptomatic of tonal language or any other pitch-affecting compositional device. Pitches of significance in a diatonic work – for instance, those of the tonic or dominant, or distinctive thematic intervals – will demonstrate greater prominence while other relationships are minimized or omitted entirely. From an intervallic perspective, the system summarizes the contours of the constituent polyphonic lines at the smallest possible level, preserving directional information, i.e. whether an interval moves up or down. A limitation of the paired pitch relationships is that, unlike the interval counterpart, the data becomes directionless. For example, leaps from two pitches (e.g. C to Eb) appear equivalent regardless of whether they exist as a major third up and minor sixth down. Nevertheless, stepwise motions and smaller leaps do tend to make up

32 Beran, 70.
33 See Beran, 69-72.
34 See Beran, 187-204.
the significant majority of motions, particularly in a downward direction, meaning the paired pitch graphs do, in fact, imply a roughly directional element. In any case, this limitation does not affect their primary purpose, which is to outline the various strengths of immediate pitch-class relationships.

The results of both analysis methods are represented by bubble graphs, where the given co-ordinates represent the first and second pitch classes or intervals in each pair (x-axis and y-axis respectively), and the diameter of each bubble is proportionate to the frequency of the relationship in question. Similar to the pitch-class circulation analysis, the data required certain parameters to be determined prior to analysis. Firstly, in the paired pitch-class analysis, all horizontal events were included, encompassing pitches that remained static. While it would have been possible to omit this data and focus only on non-unison motion, it was considered germane to observe which pitches remained present in the texture over substantial periods, particularly in complex polyphonic situations. As is typical in this study to avoid bias, extended lengths of duplicated data (i.e. voices that merged) were generally omitted in both forms of analysis. The only qualification for this applied to paired motions that led to a merge and the unison interval immediately after, or conversely those that resulted in division and the unison prior. In other words, any pitch class pairs that possessed at least one independent unmerged pitch class were included. Unlike the circulation graphs, it was vital for silence to be considered so as to take into account the contextual shift that occurs when voices exit and re-enter the music. As such, would-be consecutive pairs separated by rests in the music were necessarily omitted, as their linear relationship was likely to be compromised. Both processes combined all voices

---

into one continuous stream of valid pitches and intervals. After one voice concludes, the next was added. This method did not consider the voices individually, but it did retain their consecutive data, rather than requiring the linearization process of the circulation graphs.

Finally, as the data was permutated to a central pitch (0), the pitch classes are discussed in the abstract. Therefore, the numbers on the graph axis are not consistent in terms of pitch class value; rather, they represent semitone displacement, preserving the intervallic relationship to the central pitch (for e.g. 7 = perfect fifth; 8 = minor sixth). In conventional tonal music, one might expect 0 to refer to the tonic, but this is not always guaranteed, especially in works that may feature extended modulation. Stemming from this, the graphs produced in the following section were more usefully examined in terms of the frequency and equality of pitch-class relationships (or lack thereof), rather than risk reading too much into the specific values. This encourages a global view of the work, and as Beran states, “the connections visualize which notes are likely to follow each other.”

7.6 Paired Pitch Class Distribution

The sample of works as used above is represented in Figures 7.13, A-J. Due to the relatively common static data, and tendency for smaller intervals, the common feature of these data sets is a central diagonal cluster. Further still, the line $x = y$ plays a major role in all studied works. However, as outlined later, most pieces show distinct inconsistencies along this line, with data concentrated in certain points, such as perfect fourths [5, 5] and perfect fifths [7, 7], and largely absent in others such as the tritone [6, 6]. This often reflects the existence of a tonal hierarchy where not all pitches have equal prominence. Following

---

36 Beran, 196.
37 The diameters are normalized so that the largest ‘bubble’ in each graph is consistent and the others are proportionately diminished.
this, there is frequently a consistent aversion of motions along both the lines \( x=6 \) and \( y=6 \) (to and from a tritone away from the central pitch), while prioritized motions in the non-static data \( (x \neq y) \) are, again, more likely along lines of tonal relevance. This is also evident through the absence of numerous data points, where a large proportion of combinations do not occur at all on the 12 x 12 grid.\(^{38}\)

\(^{38}\) There are 144 potential pitch class relationships in the chromatic scale.
Figure 7.13A: Brahms: Intermezzo Op.119, No.2

Figure 7.13B: Grainger: Andante Con Moto
Figure 7.13C: Grainger: *At Twilight*

Figure 7.13D: Grainger: MS1
Figure 7.13E: Grainger: MS2

Figure 7.13F: Grainger: *Brigg Fair* (Extract)
Figure 7.13G: Grainger: *Irish Tune*

Figure 7.13H: Grainger: *The Merry Wedding*
Figure 7.13I: Grainger: *Australian Up-Country Song*

Figure 7.13J: Reger: Fugue Op.129, No.2
From initial observations, a wide range of profiles were generated, with extreme characteristics noted in *Brigg Fair*, MS1 and the Reger Fugue. It is to be expected that *Brigg Fair* with its low sample size has the most sporadic appearance, concentrating its data on very few relationships. However, as discussed below, such qualities are also evident in all of Grainger’s post-*Marching Song* choral works. Both *Marching Song* sketches, but particularly MS1, appear at the opposite end of this spectrum, exhibiting a much greater equality in static motions, and more frequent distribution in non-static relationships. This is also true of the Reger Fugue, however its main point of difference is the greater diameter of the circles, indicating that the static frequencies are more commensurate to the non-static motions.

Examining the works chronologically, both the Brahms Intermezzo and *Andante Con Moto* share strong static presences including classes 0, 5 and 7 while particularly omitting 6 and 9. There is also evidence of modulation in the *Andante Con Moto*, with its additional predominant static values at \([3, 3]\), \([8, 8]\) and \([10, 10]\)^39 indicating that although the piece begins and ends in G major, the central section of the piece switches to the relative E minor, consequently changing the central pitch to E. As expected, the data for both of these works shows strong tonal relationships, with most data centered around the seven diatonic pitch classes, both as sustained notes and in their interactions. Conversely, a sizeable quantity of relationships is either infrequent or omitted entirely, as later quantified in Figure 7.15.

There is little fundamental difference between the two graphs, with the *Andante Con Moto* placing a slightly higher emphasis on stepwise and small leap motions, both to and from higher frequency points. *At Twilight* appears to fall somewhere in between these two works, strongly resembling the Brahms profile but with the stronger stepwise motions of the *Andante Con Moto*. Considering these three works traverse changes of medium and

---

^39 3, 8 and 10 are the tonic (0), subdominant (5) and dominant (7) displaced by a minor third (three semitones).
composer, it indicates that pitch-class relationships are unified by the broader musical language employed. Further, this links *At Twilight* to Grainger’s earlier compositional efforts.

In contrast, analysis of both the *Marching Song* sketches reveals a markedly stronger central diagonal line with a high degree of consistency, making the central pitch [0, 0] somewhat arbitrary. This is particularly the case with MS1, with only the [6, 6] relationship noticeably smaller than the rest. Further, the data for MS1 distributes evenly on either side of this line to a much greater extent, with a significant spread running parallel to the $x=y$ line, demonstrating that the likelihood of non-static pitch motions is not based on tonal hierarchies. Instead, they are governed simply by the proximity of one pitch to another – a principle essential to the gliding tones of the later *Free Music* pieces. The stepwise motions are therefore the strongest, tapering out consistently towards combinations involving a tritone separation. Additionally, the number of unexplored pitch-class relationships is greatly reduced in both graphs, showing a more even distribution. MS2 exhibits a slight regression in these characteristics, but still shows the tapering effect and high proportion of paired pitch-class distribution. These linear results could be achieved through careful systematic determination to ensure such equality. Conversely (and much more likely in this case), this could also be achieved through a disregard for harmonic governance and a preference for autonomous polyphonic lines. This result presents strong evidence that Grainger developed a style of composition where the motions of each part were not directly dependent on a harmonic framework. Rather, the opposite appears to be the case: that the
vertical harmonies are the result of independent, localized motions of melodically driven voices, evidence of “coordinated mass movement.”

The post-Marching Song choral works show a marked change in style. Not only do they revert to the unequal static proportions and significant numbers of omitted relationships, but they also feature a more economical treatment of distributions, presenting far fewer one-off relationships in favour of strongly repeated connections. As noted earlier, the Brig Fair extract is the most obvious instance of this, with 65.97% of potential pitch class relationships ignored, while showing a tendency for leaping relationships, particularly involving the most frequent pitch classes (0, 3 and 7). While this is only a brief extract, the larger examples that follow share the same characteristics. Symmetry along the diagonal unites Brig Fair, Irish Tune and the Australian Up-Country Song, often creating squares of reciprocal pitch class relationships. Clear examples of this phenomenon appear in the Irish Tune (Figure 7.13 G) between pitch classes 5 and 9, with high frequency pairings separated by a tone to create a 9 x 9 grid almost completely devoid of interim connections. A more inclusive variant appears in Australian Up-Country Song (Figure 7.13 I) between pitch classes 4 and 7, showing that each pitch class within this window connects strongly with every other. The Merry Wedding (Figure 7.13 H) stands out in terms of its lopsidedness, preferring motions which head towards slightly higher (or significantly lower) pitch classes, especially from 2 and towards 9. Each of these works, while sharing many similar features nevertheless have distinctive profiles that are considerably sparser and more deliberate than the earlier Grainger works.

Like these late choral works, the Reger Fugue demonstrates symmetrical box relationships of motion, but in a more intense and frequent fashion, causing them to

---

overlap and appear as a series of clustered stepwise and minor third relationships along the diagonal, involving pitch classes 0-2, 2-5, and 7-10. This effect corresponds to the relatively infrequent static pitch class levels at 1, 6 and 11. Combined with the higher motion proportions, this result suggests that the Fugue changes pitch classes frequently in a predominantly stepwise fashion, but those that appear less regularly lack the same opportunities for motion. Therefore, like MS2, it is noticeably less equal in its overall pitch movement than MS1. Overall, by virtue of having large distributions, these three works limit the observation of isolated pitch-class pairs that are evident in other examples. Essentially, they are characterized by any given pitch being most likely to move in either direction to its immediate neighbours, with the probability of doing so decreasing to the unlikely tritone relationship.

All the data can be isolated and presented in column graphs for effective reference and comparison. Figure 7.14 shows the proportions in each work for static, stepwise and leap motions, while Figure 7.15 indicates the percentage of null co-ordinates (i.e. pitch-class relationships that do not occur), single occurrences of a relationship, and those with two or more appearances.
Figure 7.14: Distribution of Motions in the Studied Works

Figure 7.15: Co-ordinate Frequency Indication in the Studied Works
Figure 7.14 contains two visible trends. The first is a general decline in static percentage over time, resulting from either a gradual leaning towards more “active” lines or more simultaneous attacks between voices (i.e. more motions per event), although there is a slight resurgence in the Australian Up-Country Song. However, the Reger Fugue continues this trend to confirm it is indeed the outlier with the lowest levels of static motion. The second observation is the rise over time in stepwise motion, taking over most of this reduction in static. Again, this is epitomized in the Fugue, which also contains the most stepwise motion. Due to this inverse relationship, proportions of leaps are generally quite consistent, especially between Grainger’s choral works. The Marching Song sketch profiles in Figure 7.14 are very similar, with near identical static levels, and only incremental differences in steps and leaps. However, an interesting conclusion drawn from the graph is that they are not isolated. Surrounding works, particularly At Twilight, share these proportions which suggest that the Marching Song profiles are among the most balanced of the surveyed works, having moderate values in all variables.

Figure 7.15, on the other hand, more dynamically contrasts the Marching Song sketches to all the other sections. Both sketches, and to a lesser extent the Fugue, have extremely high multiple occurrence levels. Combined with the extremely low null and single occurrence levels, this indicates that for these sketches, the connections between pitch classes are deliberately widespread and are more than incidental anomalies, in that the numerous relationships are not randomly occurring but reinforced throughout the texture. Although there is a substantial degree of static motion indicated in both sketches, this does not impact on the variety of connections made. Furthermore, it is important to observe that the next closest piece in this regard, the Reger Fugue, has a static motion percentage less than half that of the sketches. Thus it achieves less with its relatively greater number of
opportunities for new pitch-class connections, instead mainly focusing on stepwise motion. Unlike the pitch class circulation analysis, when viewed from this perspective the two Marching Song sections are nearly identical and, in terms of their pitch-class relationships, distribution is more liberal than even the Reger Fugue, both covering over 80% of the potential 144 connections.

As with the circulation process, an adapted version of this process can allow a glimpse into the pitch-class relationships of the Free Music No.2, as realized in Figure 7.16. While there were too many differences in measurement to allow for quantitative comparison with other works (i.e. that the data was collected in quarter-tones and fixed time increments rather than semitones and attack events) the resemblance to MS1 was clearly evident, sharing a similarly even spread of pitch-class equality and tapered neighbouring motions. Although a lack of wider leaps results in a greater percentage of potential relationships being omitted (38.19%), this is largely due to the small incremental measurements selected; a wider time measurement would result in the potential for further pitch-class travel. Ultimately, the meandering polyphony evident in the Marching Song sketches appears here as a precursor to that of the unrestrained Free Music.
The *Marching Song* sketches demarcate two contrasting approaches in the works preceding and post-dating it. *Pre-Marching Song* works all contain very similar profiles with moderate levels of null, single and multiple occurrences, confirming the minimal difference between the Brahms Intermezzo and the early Grainger works. On the other hand, the post-*Marching Song* Grainger choral works uniformly possess a high degree of null co-ordinates, and while this high rate impacts on the proportions, the low single-occurrence values indicate that particular pitch class relationships are indeed more predominant within the texture. This suggests a substantial compositional shift in this regard, from an early
distribution evocative of the Brahms Intermezzo to a new, more economical choral texture. According to this analysis, equality is most embodied in MS1, which not only cycles through chromatic pitches rapidly, but also replaces the uneven demands of tonality with an alternate system based on proximity and linear velocity. Anticipating the attributes of Free Music No.2, a work liberated from pitch quantification, this system results in a greater and more consistent spread of pitch-class relationships.

7.7 Paired Interval Distribution

The final form of analysis undertaken in the horizontal pitch-class category is paired interval distribution. Rather than considering pitch-class relationships, or indeed direct tonality, it is the close-range examination of the horizontal component of textural ‘weft.’ As the title suggests, it describes the frequency of intervals following one another, with direction now explicitly taken into consideration and negative values representing descending intervals. Unlike the paired pitch-class analysis, the intervallic counterpart did not require consideration of static zero values, and any incidence of double or single unisons featuring in a pair were omitted. In this vein, Beran advises: “repetitions of a note – or transposition by an octave – are less interesting.” Like the paired pitch combinations, bubble graphs were used to portray first and second intervals in the pair (x/y-axis) with frequency as diameter. Yet by incorporating direction, the process quadrupled the number of possible outcomes in modulo 12, ergo it became proportionally difficult to consider and compare graphs via individual values. Fortunately, as illustrated in Figure 7.17, the additive combinations of successive intervals resulted in regions of significance that could be considered to highlight important interval traits.

41 Beran, 70.
The most obvious division of the data is into the four quadrants, representing the types of motions outlined below.

**Quadrant 1 (Q1):** Intervals with negative to positive motion

**Quadrant 2 (Q2):** Intervals with only positive motion

**Quadrant 3 (Q3):** Intervals with only negative motion

**Quadrant 4 (Q4):** Intervals with positive to negative motion
Intervals in Quadrants 2 and 3 always resulted in net positive and negative motion respectively. In Quadrants 1 and 4, the net sum of displacement depended on which side of the negation diagonal they fell; those below resulted in negative and those above, positive. Points along the negation diagonal consisted of matched opposing intervals leading back to the original starting pitch, and resulted in a net motion of zero. In Quadrant 1, this indicated a down-up motion, and in Quadrant 4 an up-down. Of less importance is its counterpart; the consistent diagonal, where successive identical intervals in the same direction were paired. However, in practice this is mostly confined to stepwise motion or smaller leaps, particularly in a choral context, as continued large intervals in the same direction would quickly risk exceeding range limitations or affecting melodic continuity. Perhaps at the broadest level, the division of interval pairs could be separated simply into those that result in positive motion and negative motion, excluding those along the negation diagonal, portrayed in Figure 7.17.

Surveying the initial results and trends of paired pitch-class analysis led to another important means of classifying the data. Throughout many of the works, there were often primary clusters of purely stepwise interval pairs, and a secondary division evident consisting of intervals involving small leaps up to a perfect fourth. In contrast, intervals that involved wider leaps were often considerable outliers and were grouped together, allowing the pieces to be divided meaningfully according to the maximum interval in the pairs. The stepwise pairs often presented the most concentrated results, and were further filtered into profiles compiling each of the sixteen possible combinations for comparison. The interval pair bubble graphs were firstly produced in Figures 7.18, A-J and the above aspects were quantified and used to interpret the graphs beyond the observational level.
Figure 7.18A: Brahms: Intermezzo Op.119, No.2

Figure 7.18B: Grainger: *Andante Con Moto*
Figure 7.18C: Grainger: *At Twilight*

Figure 7.18D: Grainger: *MS1*
Figure 7.18E: Grainger: MS2

Figure 7.18F: Grainger: *Brigg Fair* (Extract)
Figure 7.18G: Grainger: *Irish Tune*

Figure 7.18H: Grainger: *The Merry Wedding*
Figure 7.13I: Grainger: *Australian Up-Country Song*

Figure 7.18J: Reger: Fugue Op.129, No.2
The overall shape of the data distribution shows important trends in the intervallic pairing. As with the pitch-class method, certain works can be grouped together from the outset, with quadrant proportions isolating the more lopsided works. As quantified in Figure 7.19, the Brahms Intermezzo and \textit{Andante Con Moto} are again linked with prominent Q1 and Q4 levels, i.e. quadrants involving pairs of opposing motion. Furthermore, as seen from their respective graphs, this consists of a large variety of pairs, forming a wide distinctive spread along the negation diagonal. Most other works share a healthy preference for Q3, with an inverse relationship evident between Q2 levels and the combined Q1/Q4 levels. Therefore, the higher Q3 and generally higher Q2 variables indicate significance toward successive intervals in the same direction, signifying a predilection for wider ranges to be traversed.

It is curious that MS2, \textit{Australian Up-Country Song}, and the Reger Fugue share nearly identical profiles here, while MS1 closely resembles the \textit{Irish Tune} and the \textit{Merry Wedding}. Such grouping continues with \textit{At Twilight} and \textit{Brigg Fair}, being the only two works with Q2 values lower than Q1 and Q4. Given that many of these works are considerably unrelated in the other forms of analysis, it is evident that intervallic pairing is independent from the other compositional variables.
Classifying interval pairs based on their maximum size (Figure 7.20) reveals considerable preferences towards smaller intervals. The Brahms Intermezzo is the only studied work to not follow this trend, containing a strong emphasis towards small-leap pairs rather than steps. MS1 and the Reger Fugue show similar results, while the other choral works all possess fairly unique combinations. One feature, however, unites the published works for choir; their lower proportion of wide-leap interval pairs lies between 9-14%. This is not the case in all keyboard works and also both *Marching Song* sketches with 15-20% respectively, reflecting the latter’s high pitch-class connectivity observed in the previous section. Otherwise, small leaps generally oscillate freely in Grainger’s choral music, between 30-40% and there is no evident pattern between higher or lower leaps versus step levels and more variance between works. This is somewhat surprising, as often the most striking differences in the bubble graphs were displayed on the stepwise level; however, this necessitates closer examination of the specific co-ordinates below.

To examine the distinctive combinations of stepwise interval pairs, the sixteen possible combinations were graphed in Figures 7.21, A to F. For brevity, Figure 7.21 E presents the average distribution of stepwise pairs in the published Grainger choral works, resulting in clear trends, but each are considered separately in Figure 7.22. Overall, data in Q1 and Q4 exhibit significantly fewer combinations, which are mainly confined to points along the negation diagonal. Q2 most frequently includes pairs commencing with, or at least including a whole tone, leaving ascending chromatic motion the rarest combination out of the relatively rich Q2/Q3 collections. However, in Q3, descending chromatic motion is relatively common and this quadrant also includes the three most frequent combinations, involving pairs with descending whole tones.
Figure 7.21A: Stepwise Pairs of Brahms *Intermezzo*

![Bar Chart for Brahms Intermezzo](chart.png)

Figure 7.21B: Stepwise Pairs of Grainger *Andante Con Moto*

![Bar Chart for Grainger Andante Con Moto](chart.png)
Figure 7.21C: Stepwise Pairs of Marching Song Section 1

Figure 7.21D: Stepwise Pairs of Marching Song Section 2
Considering that MS1 contains a higher percentage of stepwise intervals (shown in Figure 7.20) the individual profiles of the Marching Song sketches (Figures 7.21 C and D), are remarkably similar. Yet despite the similar contours, the MS1 does place a greater emphasis on the ascending chromatic [1, 1] pair, and is more balanced in its distribution of Quadrant 2 and 3 pairings. Overall both sketches match well to the published choral works (Figure 7.21 E), but in terms of discrepancies, both Marching Song sections share a predominant descending whole tone preference [-2, -2].

Unlike the other sections of this chapter, here there is evidence of a generalized stepwise profile for Grainger’s choral works that is also largely upheld in the Marching Song sketches. The emphasis on the inner quadrants and interval pairs with tones rather than semitones with a strong aversion to other pairings provides an excellent understanding of the connections that occur on a horizontal level. It is also an interesting finding that some stepwise motions are strongly avoided across all the works, specifically [-2, 1], [2, -1] and [1, -2].

By way of contrast, the Brahms Intermezzo and Reger Fugue both feature considerable emphasis in the typically depleted quadrants. The Intermezzo (Figure 7.21 A) is most affected by its strong leap preference, which results in fewer stepwise pairings (see Figure 7.20). Additionally, the usually common Quadrant 2 now features the smallest proportions, indicating that ascending stepwise combinations are rare. Some of these features are exaggerated in the Andante Con Moto (Figure 7.21 B), although in this piece there are more stepwise combinations overall, negated chromatic motions ([−1, 1] and [1, −1]) appear as the two most frequent pairs, again at the expense of Q2/Q3 frequencies. The consecutive chromaticism of the Fugue is shown to be its foremost characteristic, with [1, 1] and [−1, −1] predominating over all other combinations, with an additional increase slight
increase in negated chromatic interval pairs. Similarly, the frequency of consecutive tone-
motion, [2, 2] and [-2, -2], is diminished. The works composed in the keyboard medium
therefore differ substantially from their choral counterparts in this regard.

In order to summarize the quantified stepwise discrepancies between profiles,
Figure 7.22 displays the average differences of all stepwise motions between the MS1 and
every other work. Unsurprisingly, the low values of MS2 mark it as the most similar profile,
followed closely by the remaining choral works, with the exception of the simplistic Brig
t Fair extract. Following this, the chromaticism of the Reger Fugue places it slightly ahead of
the other keyboard works, with the Brahms Intermezzo being the most foreign profile. As
such, despite the difference of pitch-class circulation, the two Marching Song sketches are
closely related from this perspective, and to a greater extent than the pitch-class pairings.

Figure 7.22: Average Differences in Stepwise Profiles Relative to MS1
Figure 7.23: Negative, Positive and Negated Interval Pairs

Figure 7.24: Other Specific Plot Characteristics
To fully consider the characteristics of the interval pairing process, Figures 7.23 and 7.24 display the remaining categories of interval pairs. It should be noted that the values in Figure 7.24 are unrelated and do not add up to 100%. Figure 7.23 represents the proportions of net motions that are neutral, positive or negative. As was evident in their stepwise profiles, Brahms and Andante Con Moto both share high negation diagonal rates, confirming the observation that most negated data is stepwise. Compared to the consistent diagonal (in Figure 7.24) there is a roughly inverse relationship between the two diagonals. Works such as MS1 and the Reger Fugue have lower negation diagonals and higher consistent diagonals, with the opposite relationship existing for the Brahms Intermezzo and Andante Con Moto. Again, as observed earlier, this is reflected at the stepwise level. There is no such clear relationship between the negative and positive relationships overall as they appear fairly balanced, with the exception of the limited Brigg Fair extract. The remaining consideration is the examination of the interval pairs that change direction, which again shows the Intermezzo as a significant outlier. Overall, there is a relatively consistent use of negative and positive values in the other works, but generally these are lopsided in favour of positive net values; the changes in direction tend to result in a higher pitch.

Intervallic pair analysis uncovered a variety of subtle differences between the works, as well as finding several significant uniting trends. However, ultimately it served to highlight the similarity between the Marching Song sketches, while in some respects countering the previously observed correlations between MS1 and the chromatic Reger Fugue. It can be quantified that the pairings of stepwise motions involving tones are more frequent, and similarly a spread of wider interval pairs more aligned with keyboard music characterize the Marching Song sketches and shed new light on the chromatic pitch class circulation findings. To this end, rather than obtaining the high pitch-class circulation cycles
similar to the strict chromatic motion and thematic material characteristic of the Fugue, it supports the hypothesis that the individual voices operate on democratically and macroharmonically independent melodic paths.

Conclusions

The three strands of analysis outlined in this chapter denote important horizontal connections able to be made through viewing the data through the modulo 12 lens. Considering pitch-class circulation demonstrated that there is a considerable discrepancy between the two Marching Song sections, and placed MS1 much closer to the extremely rapid circulation typical of atonal, and ultimately, free music. Readapting this process to individual voices indicated even higher levels of consistent chromaticism from a linear perspective, and paved the way for the trichord analysis in Chapter Eight.

Paired pitch-class analysis created distinct combination profiles that served to highlight and measure the bias effect of tonality and illustrated how the Marching Song pitch classes were allowed to connect freely, unifying both sections in their dedication to achieving the highest number of possibilities. Most importantly, it was able to make a link between the MS1’s remarkably equal approach to pitch and tapered sliding motions that would again become evident in the later Free Music No.2. Finally, the intervallic pair analysis was able to distinguish between significant and less significant parameters, indicating common elements of a typical profile for Grainger’s choral music, emphasizing consistent ascending and descending motion, and leading to wider ranges being traversed in the vocal lines. It also enabled the close correlation between the two Marching Song sections, suggesting that despite some substantial differences in certain respects, their dense and complex texture fostered a similar compositional style in terms of the horizontal weft.
Chapter 8

Vertical Elements of Texture

This chapter examines intervals and pitch-class relationships with an emphasis on the vertical dimension. Like the parallel study of the horizontal dimension in Chapter Seven, this analysis subdivides into three sections: trichord frequency, paired pitch-class relationships and consonance levels. While other vertically-oriented chapters deal with considerations of texture often by taking the entire sonority into account, either in terms of density (Chapter Four) or structure (Chapter Nine), here sonorities are broken down into a series of components, specifically intervals, pitch classes, and trichords, in order to reflect the internal aspects of vertical texture. Standard deviations are applied to each of the above methods, offering comparative observations between what are harmonically and polyphonically disparate works. This vertical intervalllic analysis serves to measure equality, whether it is applied to trichord or pitch-class relationship distributions, or the ratio of dissonance to consonance in each sonority.

As with the horizontal counterpart, the analysis in the first two sections (trichord and paired pitch-class analysis) is indebted to the work of Dmitri Tymoczko and Jan Beran respectively, and where applicable continues their processes as outlined in Chapter Seven. As such, the fundamental concepts and justifications are not repeated here. However, the third section (consonant proportions) was mostly developed independently in order to fulfil its specific objectives in measuring consonance across multiple mediums, densities and musical languages. Due to the immediacy of vertical sonorities, the methods applied vertically were more sensitive to the impact of tonality. In contrast, the horizontal component often considered pairings over multiple changes of harmony, so this was not as
evident in the previous chapter. Therefore, the methods were of great use in determining whether, and by how much, the *Marching Song* sketches truly adhered to democratic and free music principles, relative to the wide variety of other works.

### 8.1 Trichord Methodology

Having established the rates of macroharmonic change for the studied works in Chapter Seven, and ascertained that MS1 is markedly close to the Reger Fugue in its high pitch-class cycling, the second and final stage in Tymoczko’s process was to determine the internal structural makeup of these sonorities through the examination of their trichords, using Allen Forte’s list of prime forms of pitch-class sets. Commenting on this kind of process, Nicholas Cook states that “the aim of set-theoretical analysis ... is to provide the same kind of insight into the underlying structure of atonal music that Schenkerian analysis provides into tonal music.” With this objective in mind, the first section of this chapter’s analysis is the counterpart to the more general pitch-class circulations considered in Chapter Seven.

Like the Schoenberg Klavierstücke, Op.11, No.1, Tymoczko found that the Reger Fugue was an example that “circulates quickly through the twelve pitch classes, while also abandoning clearly articulated macroharmonies.” However, he also established that in developing true atonality, composers such as Schoenberg rejected “harmonic consistency ... the very idea that harmonies should be structurally similar to one another.” This, he postulates, is the last remaining “important step from Reger to Schoenberg” separating

---

3 Tymoczko, 182.
4 Ibid., 183.
5 Ibid., 182.
“post-Wagnerian chromaticism”⁶ and atonality. He theorises that the differentiation between Reger and Schoenberg lies in how the latter undertakes “the radical step from “everything is permitted” to “everything is permitted at all times.”⁷ Therefore, any combination of internal structures is within the palette of Schoenberg, while even the highly chromatic Reger Fugue is bound by particular composite structures. Given MS1’s similarly high pitch-class circulation and its unique avoidance of exact vertical structures, discussed in Chapter Nine, the same question arises as to where it fits on the spectrum between tonality and atonality. The examination of trichord frequencies as used by Tymoczko allows such a positioning.

All nineteen possible trichord pitch-class sets, according to Forte’s list of three-note pitch-class sets,⁸ are illustrated in Figure 8.1. They are listed with their cardinality⁹ and ordinal number signifying the chord type; the system of labelling generally meant that lower numbers contained closer and more dissonant collections while the larger numbers reflect more common triads (3-10 to 3-12). Although the Forte classifications were originally designed for freely atonal music, due to the tonal nature of much of the studied music, it should be noted that this list includes the commonly added inverses (listed as X-XB) in a similar fashion to Tymoczko,¹⁰ thereby distinguishing sets that were related by inversion. This avoids the over-simplification of Forte’s original sets that, as musicologist Larry Solomon observes, causes it to become “impossible to distinguish major from minor,”¹¹ with [047] (major) and [037] (minor) being regarded as identical.

---

⁶ Ibid., 181.
⁷ Ibid., 183.
⁸ Forte, 179.
⁹ The number of pitch classes involved - in this case only “3” as only trichords were considered, being the smallest possible collection involving more than one interval.
¹⁰ Tymoczko, 182.
To identify these “microharmonies” the same modulo 12 data from the combined-voice pitch-class circulation in Chapter Seven was used, representing consecutive attacks.\textsuperscript{12} Then each group of three unique pitch classes was converted to its normal order (represented in Figure 8.1) according to Forte’s two requirements.\textsuperscript{13} By dividing the music into these trichords, the resulting distribution reflected whether certain internal structural patterns were predominant, for instance the major/minor triads of 3-11 and 3-11B, or whether a more equal approach prevailed, implying an unrestricted manner of internal vertical construction. To provide an extreme outlier, this process was applied to samples of randomised music, while also being applied to the combined data of Grainger’s choral works in order to identify consistent trends. Additionally, for this section of analysis, the \textit{Free Music No.2} was approximated by randomly rounding the quarter tones through a series of three trials. The proportion of each work dedicated to each of the nineteen trichords was graphed as Figures 8.2, A to N.

\textsuperscript{12} Randomly ordered in the case of simultaneous attacks.
\textsuperscript{13} Requirement 1: “The normal order is that permutation with the least difference determined by subtracting the first integer from the last.” Forte, 4.
Requirement 2: “If the least differences of the first and last integers is the same for any two permutations, select the permutation with the least difference between first and second integers.” Forte, 4. For further information on the permutation process as outlined by Forte see Cook, 133.
Figure 8.2A: Brahms Intermezzo Op.119, No.2

Figure 8.2B: Grainger Andante Con Moto
Figure 8.2C: Grainger At Twilight

Figure 8.2D: Grainger MS1
Figure 8.2E: Grainger MS2

Figure 8.2F: Grainger *Brigg Fair*
Figure 8.2G: Grainger Irish Tune

Figure 8.2H: Grainger The Merry Wedding
Figure 8.2I: Grainger *Australian Up-Country Song*

![Graph showing Australian Up-Country Song](image)

Figure 8.2J: Grainger Combined Choral Works

![Graph showing Combined Choral Works](image)
Figure 8.2K: Free Music No.2

Figure 8.2L: Reger Fugue, Op.129, No.2
Figure 8.2M: Schoenberg Klavierstücke, Op.11 No.1

Figure 8.2N: Randomised Samples
8.2 Trichord Analysis

As the graphs in Figure 8.2 illustrate, works based on tonality were found to prioritize certain internal structures, plainly evident through strong peaks and troughs in the data. Predominant trichords typically occupied at least 10% or more of these pieces. This includes all of the studied Grainger pieces and is true even for works with high pitch-class cycling such as MS1 and the Reger Fugue; thus replicating Tymoczko’s results. Due to the consistency, the combined graph of Grainger’s choral graph (Figure 8.2 J) shows these averaged characteristics clearly; spikes tended to occur at 3-7/B and 3-11/B. Meanwhile, Figure 8.1 shows that this corresponds to the major/minor triad (3-11/B) and partial seventh chord formations (3-7/B). Only Andante Con Moto presented any alternative to this model, which had additional peaks at 3-2 and 3-4. Conversely, the more chromatic trichords 3-1, 3-3/B, 3-5/B, and 3-12 were among those most eschewed, although statistically the symmetrical nature of the augmented triad 3-12 reduces its likelihood of occurrence by two thirds, as witnessed in the randomly generated trichords. Overall, there is a generally ascending line visible in these tonal plots corresponding to wider trichords as more utilised structural fragments. MS2 was found to be an archetypical example of these tonal characteristics, confirmed by its close resemblance to the combined choral work graph.

As observed by Tymoczko in relation to another of Schoenberg’s Klavierstücke, the more balanced plot of Schoenberg’s Klavierstücke op. 11, no. 1 (Figure 8.2M) represents “a much more even distribution of chord types,” which is also consistent with the Free Music No.2 realisations. That said, compared to the randomised trichords, in both of these atonal

---

14 As observed by Gregory Danner when he states that “the first 18 sets contain 12 entries for each set ... The last pitch-class set (3-12) is the augmented triad and is unique in that the permutations simply replicate the original set. For this class there are only four entries.” Gregory Danner, “The Use of Acoustic Measures of Dissonance to Characterize Pitch-Class Sets,” Music Perception: An Interdisciplinary Journal, No.1 (1985): 106-7, doi: 10.2307/40285324.

15 Tymoczko, 183.
works there is a slight but descending line as the set numbers ascend, indicating that despite their atonal or structurally liberated nature, a preference for more dissonant internal structures exists. As can be expected, the randomised music distributes the chord types more evenly at between 5-7% each, with the augmented 3-12 residing at a third of this figure at around 1.5-2% as expected. These graphs show there is a clear divide between tonal and atonal works, reflecting the influence of tonality that unites even the most chromatically dense work through these internal structures. Further, true equality appears to be evaded even when the tonal system is completely disregarded, prioritizing closer trichord relationships, compared to randomly generated sonorities.

In relation to the two extremes, peaked and balanced, MS1 for the first time in this dissertation is clearly closer to the former with its considerable inequalities, yet it also stands out in two important respects. Firstly, there is a lack of 3-11/11B predominance, and it is the only tonal example that creates noticeably larger peaks elsewhere, specifically at the more dissonant 3-7/7B. Secondly, while the graphs of most other works possess highly jagged lines, there is a curious lack of peaks and troughs in MS1, particularly for the closer trichords, which instead follow a remarkably steady decline over eight consecutive sets. This indicates that formations, consisting of two adjacent chromatic pitches and a third note, appear with gradually less frequency as the distance from the third note increases, indicated in Example 8.1.

Example 8.1:

\[
\begin{array}{cccccccc}
3-2 & 3-2B & 3-3 & 3-3B & 3-4 & 3-4B & 3-5 & 3-5B \\
\text{4.8%} & \text{4.6%} & \text{4.2%} & \text{3.6%} & \text{2.8%} & \text{2.8%} & \text{2%} & \text{1.6%}
\end{array}
\]
This subsequent lack of distinct troughs in MS1 gives a greater proportion of data to the typically less frequent chords, and thus is also a contributing factor in limiting the peaks, with slightly lower maximums than most other choral works. Overall, despite the complicated polyphony and high pitch-class circulation, MS1 is largely linked with the Reger Fugue in its adherence to clear internal structuring preferences. While the aggregate of these trichords constantly generates a stream of non-identical sonorities in MS1, as explored in Chapter 9, it nevertheless suggests that individually they contribute to the textures that Grainger’s ear “yearned [ed] for harmonically.”

Examining the standard deviations of these graphs provides a quantitative measure of their equality for comparison, determining the closeness of the data spread, with lower deviation values indicating greater equality. Illustrated in Figure 8.3, this method confirms that MS1 is indeed the most balanced of the tonal works, exceeded considerably by Schoenberg’s Klavierstücke and the Free Music No.2 but with almost half the deviation of the heavily diatonic Irish Tune. However, the significant decline between MS1 and these works indicates that internal structural idiosyncrasies prevent it from breaking the barrier in this regard, placing it not particularly far from earlier works like the Brahms Intermezzo and Andante Con Moto. Interestingly, it does lie roughly halfway between the Reger and the Schoenberg, placing it closer to the atonal model than the high pitch-class circulation of Reger’s post-Wagnerian chromaticism.

---

16 Grainger to Parker, 28 August, 1916, 11.
Figure 8.3: Standard Deviations of Trichord Distribution
Several other pertinent observations can be made from Figure 8.3. The wide gap observed between MS1 and the atonal works is echoed between the latter and the randomised trichords, confirming the observation that even in harmonically and structurally emancipated music there may still exist slight structural tendencies, as opposed to true equality. In contrast to MS1, MS2 and the other choral works generally lie towards the opposite end of this spectrum, being more internally consistent and quantitatively showing that MS2 contains a similar distribution to the early *At Twilight*. This point of contrast with MS1 suggests that the latter is the anomaly from this perspective. Additionally, the hypothesis of transition is not supported by this analysis, with *Andante Con Moto* lying closer to MS1 than either piece to *At Twilight*.

Overall, the findings of this analysis show all of Grainger’s chorus works as fairly conventional and consistent. Despite their wide level of disparity in voice crossing, chromaticism and pitch-class cycling, the tonality on which these works are based greatly affects their internal structures. It appears to be an inescapable influence that can be stretched, but ultimately remains clearly observable until the dictum that “everything is permitted at all times”\(^\text{17}\) comes into effect. This stretch is most visible in MS1, which remains clearly prone to specific trichord formations, despite exceeding the Reger Fugue in terms of trichord equality, and fails to overcome this last bastion of compositional order. Only with *Free Music No.2* is Grainger able to surpass Schoenberg in this regard. For all the innovative qualities of the *Marching Song* sketches, their dependence on tonally-based trichords shows that Grainger did not completely break free of the influence of tonality in the vertical realm.

\(^{17}\) Tymoczko, 183.
8.3 Paired Pitch-Class Methodology

An alternative method of examining the inner relationships in vertical construction is to consider vertically-adjacent pitch-classes in pairs, creating a counterpart to the horizontal pairings examined in Chapter Seven, and likewise based on the theories of Jan Beran. The previous section’s finding of significant tonal inequality in trichord distribution provides strong empirical evidence of Beran’s claim that music “based on scales ... is usually not equally distributed,”¹⁸ and suggests that the analytical results of vertical pitch-class relationships would be just as reflective of this fact, if not more so, than the horizontal component. The methodology used here is fundamentally identical to the horizontal orientation of the pitch-class relationships, with the data converted into modulo 12 form and cycled to place the most frequent pitch occurrence as “0.” The paired data was again represented in the form of bubble graphs, with the lower pitch of the pair designated to the x-axis and the upper pitch designated to the y-axis, with diameter representing relationship frequency. This showed the likelihood of any consecutive pitch combination occurring throughout the pieces, indicating the extent of pitch-class relationships affected by tonality and further, determining which classes are most likely to begin with.

Despite the similar process, certain characteristics of the vertical data had important ramifications for the resulting patterns. Firstly, unlike the horizontal process, it was necessary to omit unisons as they were not a technical factor in sonority construction. Ergo any data points occurring along the central diagonal line (representing a pair of identical pitch classes) are spaced either an octave apart, or at multiples of the octave. Secondly, while the horizontal process was able to be expanded into paired interval distributions, the sorting of vertical data into the low-high order ignored voice crossings and meant that the

¹⁸ Beran, 64.
data became directionless; there were no negatives as intervals were consecutively stacked.

As a result, this aspect was not able to be considered in this analysis.

The sample of works was similar as for the horizontal component, with only a few exceptions. Although Schoenberg’s Klavierstücke was unable to be examined horizontally due to its lack of clear polyphony, it was able to be included in this section from a vertical perspective. Conversely, due to its quarter tone nature, the *Free Music No.2* was omitted from this analysis, and instead a randomised sample was provided and calculated as a relative benchmark for equality. These works are presented in Figures 8.4, A to N.
Figure 8.4A: Brahms Intermezzo Op.119, No.2

Figure 8.4B: Grainger *Andante Con Moto*
Figure 8.4C: Grainger At Twilight

Figure 8.4D: Grainger MS1
Figure 8.4E: Grainger MS2

Figure 8.4F: Grainger *Brigg Fair*
Figure 8.4G: Grainger *Irish Tune*

Figure 8.4H: Grainger *The Merry Wedding*
Figure 8.4i: Grainger *Australian Up-Country Song*

Figure 8.4j: Reger Fugue, Op.129, No.2
Figure 8.2M: Schoenberg Klavierstücke, Op.11 No.1

Figure 8.2N: Randomised Sample
8.4 Paired Pitch-Class Analysis

Unlike the trichord analysis, the analysis of vertical pairings across the studied works yielded results that were highly individual. The most common shared feature was the absence of the diagonal central line, a by-product of omitting unisons and the inverse of the horizontal equivalent of static motion. Similarly, combinations in these graphs tended to become more frequent as they move away from this unison line; an unsurprising observation as this implies interval relationships like thirds, sixths, and even tritones are more vertically common than seconds. This trend is clearest in the widely-spread pieces like the Reger Fugue and Marching Song sketches, but in more concentrated and sparse pieces, such as Brigg Fair and Irish Tune, this effect produces very sporadic, asymmetrical graphs heavily dependent on specific coordinates displaced from this central line.

Falling between these two extremes, Andante Con Moto and the Brahms Intermezzo both share similar profiles, albeit preferring different points. Their distribution encompasses a large but not exhaustive range of pair combinations, often grouped in clusters highlighting a select group of frequent formations. They are also distinct in that they share large [0,0] coordinates as well as other major pairs along the diagonal, signifying that these textures do utilize octave significant doubling. This feature can be seen in Figure 8.3, which represents the most frequent pairings in both of these works. Octave relationships, pitch-class pairs outlining common diatonic harmonies and the presence of leading tones are evident in both instances (as previously noted, Andante Con Moto is technically in G major although its central pitch is from the relative E minor).
At Twilight also shares the characteristic of prominently featured pairings, with certain patterns that can be observed in its symmetrical appearance, particularly the strong predominance of the perfect fourth above the central pitch along the lines $x=5$ and $y=5$. However, a transition can be seen occurring here in Grainger’s development and these characteristics serve as an important link between the earlier keyboard works and the Marching Song sketches. Although the clusters and omissions are still important features of At Twilight, their distribution is wider and the disparity between frequent and infrequent pairs is more smoothly graduated. Additionally, it shows a significant reduction in unused pitch combinations. In contrast to the previous section, from an observational standpoint, At Twilight appears to uphold the transitive hypothesis in this regard.

In both of the sketches, but more noticeably in MS1, almost all possible pitch relationships occur at some point. Further, distribution is clearly based on the distance from a given pitch, with interval relationships between the minor third/major sixth marking the boundaries for the bulk of frequent occurrences in both works. Most significantly, the equal distribution of pairs reinforces the tendency of the work to encompass all pitches equally, and cycling the data to a different central pitch would produce minimal changes, particularly in MS1. Combined with its horizontal pitch-class circulation, this vertical result signifies the
relinquishment of tonal predominance and completes the shift towards it as anticipated in *At Twilight*.

In striking contrast, the later choral works are even more concentrated than the early keyboard works. They are marked by a considerable neglect of numerous pitch-pairs and most of those included are minimal. While the smaller sample sizes of *Brigg Fair* and *Australian Up-Country Song* may have contributed to this effect, it is still evident in the larger *Irish Tune*. For the *Irish Tune*, this result was to be expected, given its status as the slowest piece in terms of pitch-class circulation and limited maximum number of ten pitch classes, as observed in Chapter Seven. This data indicates that the internal construction of the choral sonorities is quite consistent in Grainger’s published choral output. Further, it is noticeable that *Irish Tune* and *Australian Up-Country Song* share similar predominant co-ordinates and profiles, outlined in Figure 8.4, giving rise to specific interval pairings that prioritize the same diatonic thirds and fifths.

**Figure 8.4: Common Pitch Class Pairs**

**Grainger Irish Tune**

\[
\begin{array}{cccccccc}
\text{F} & \text{G} & \text{A} & \text{B} & \text{C} & \text{D} & \text{E} & \text{F}\\
& & & & & & & \\
\end{array}
\]

Central Pitch: Eb

**Grainger Australian Up-Country Song**

\[
\begin{array}{cccccccc}
\text{F} & \text{G} & \text{A} & \text{B} & \text{C} & \text{D} & \text{E} & \text{F}
\end{array}
\]

Central Pitch: F

As could be predicted, the highly chromatic and atonal works had an extremely wide spread, being similar in appearance to the *Marching Song* sketches. Yet even outside the grip of conventional tonality, patterns can still be observed. The Reger Fugue, despite some
of the most equal distribution of its occurring frequencies, still avoids vertical interval relationships of a second, and to a greater extent than MS1. The Schoenberg Klavierstücke contains a concentrated line a major third above the lower pitch, which suggests this relationship is an essential contributor to sonority construction, but also that it applies across a variety of pitch classes, as shown in Figure 8.5. The randomised vertical pairs show the likelihood of closer intervals, fading gradually in likelihood to the octave. Additionally, the extreme pitch-class equality, and near total lack of absent pairs, provide an extreme for comparison of the studied works.

Figure 8.5: Frequent Pitch Class Pairs

Schoenberg Klavierstücke

\[ \begin{array}{cccccccc}
\flat 8 & \flat 8 & \flat 8 & 8 & \flat 8 & \flat 8 & \flat 8 & 8 \\
\end{array} \]

Central Pitch: G#

Deeper comparative analysis is possible in a similar fashion to the horizontal pairings. Placing the coordinates into ‘null’, ‘single’ and ‘multiple occurrence’ categories can effectively summarise the broad array of data, and assist in confirming the visual observations above. Additionally, calculating the standard deviation between occurring pairs allows a more accurate method to assess the idea of distribution equality throughout these pieces. Two methods are shown in Figures 8.6 and 8.7 respectively.
Figure 8.6: Co-ordinate Frequency Indication in the Studied Works
The results in Figure 8.6 show that although null and multiple occurrence rates vary greatly, the rate of single occurrences are similarly low for all the works, implying a general trend that, in every piece, a small percentage of chord pairs consistently appear in an incidental context. However, despite the disparity between the outer variables, the overall profiles readily allow for grouping. Similar profiles exist between Andante Con Moto and the Brahms Intermezzo, confirming the imitative qualities of the former in this respect, which are also echoed later in The Merry Wedding. The other post-Marching Song sketch choral works also share high null co-ordinate proportions and low multiple occurrence values, indicating that only a few select pairs are emphasised in these works, in immediate and stark contrast to the preceding sketches.

Strongly evident, however, is the transitional nature of At Twilight, with null and multiple occurrence levels almost exact halfway between Andante Con Moto and MS1. Most significantly, these proportions did not then carry through at all to his other choral works after the Marching Song sketches, giving further credence to its intermediate nature. Curiously, the Reger Fugue was not too dissimilar from At Twilight in its values, being less extreme in this regard than its graph suggested. Only the Schoenberg Klavierstücke was able to match the Marching Song sketch profiles and all of these results are still substantially below the true equality provided by unstructured, randomised intervals, featuring virtually no omissions or even single occurrences.
Figure 8.7: Standard Deviation of Occurring Pairs in the Studied Works
Ignoring the null co-ordinates, finding the standard deviation of occurring pairs allows more specific comparison between works; a lower standard deviation indicates that the pairs are more evenly distributed, while higher deviations mean the data is more heavily concentrated in a few pairs and weakly spread in others. Being more specific than the previous process, it allows more concrete rankings to be made. Viewed through this light in Figure 8.7, many of the earlier findings are repeated, specifically the *At Twilight* deviation falls between *Andante Con Moto* and MS1, which contrasts with the much higher deviations of the other choral works. The later choral works are generally highly specific in their selection of intervals although *The Merry Wedding* proved to be more of the exception in this regard and closer to the early keyboard works. MS2 is shown to be slightly less evenly distributed than the Reger Fugue and Schoenberg Klavierstücke, but these are in turn surpassed by MS1, which falls closest to the deviation value of the randomised sample.

Examining the pairing of intervals provided an important insight into the inner workings of chord construction. Considering previous findings, they show that the use of a wide range of intervals is not necessarily related to high pitch-class cycles, as the slowly modulating MS2 demonstrated through its similarity to the chromatic MS1. Conversely, even the atonality of Schoenberg can be seen to prioritise certain intervallic relationships, causing MS1 to be closer to unstructured music in terms of pitch relationship equality. Secondary hypotheses – such as the resemblance of Grainger’s early keyboard music to that of his repertoire, and the undergoing of a transition in the lead up to the sketches – were also validated, in particular contrast to his later works.
8.5 Consonant Proportions Methodology

The final section of this chapter deals with a qualitative examination of each work’s sonorities, creating a consonance profile for each chord. There exist numerous methods available of weighting dissonance in chords; particularly relevant to the present discussion was Gregory Danner’s measurement of acoustic dissonance for trichord sets over a two-octave range.\textsuperscript{19} However, various attempts at creating a meaningful weighting across keyboard and choral works quickly grew cumbersome and problematic when applying these methods to dense and dramatically varied textures. A simpler but more approximate solution was devised; rather than attempting to weight intervals by granting values of auditory dissonance, it would merely label the qualities of intervallic relationships as dissonant or consonant. This data was then able to provide an outline of the degree of consonance throughout a piece, with the objective here to observe particular vertical characteristics rather than impose any direct harmonic theory. These characteristics included the alternation of consonant and dissonant chords, the extremes of relative dissonance reached, and the average proportions regarding a work’s level of consonance.

For the calculations, compounded intervals were simply designated either consonant ( thirds, fourths, fifths, sixths and octaves) or dissonant (seconds, tritones or sevenths), with unisons ignored. One of the major weaknesses of this system is that it does not attempt to further weight these sonorities, for instance there is clearly a greater aural effect on minor seconds as opposed to major seconds,\textsuperscript{20} but it gives some idea of the degree of chromaticism in the works. To avoid any automatic 0%/100% consonant classifications, only sonorities with two or more intervals were considered to avoid strongly biasing the data.

\textsuperscript{20} This effect can readily be observed in the table of dissonance values in Danner, “The Use of Acoustic Measures of Dissonance,” 107-8.
resulting in at least three pitch relationships per chord, rather than just one. Further, the intervals between all pitches in a sonority were considered, not just adjacent relationships, as demonstrated in Example 8.8. The other inherent flaw with the calculations was that it regarded augmented triads as consonant, as they comprised only consonant intervals (two major thirds and a minor sixth). To compensate for this, every instance of an augmented triad was given the same profile as the diminished triad, thereby considering the minor sixth dissonant in the augmented context. Again, while this involved approximation, it nevertheless preserved the integrity of the purely consonant sonorities.

Example 8.8: Constituent Intervals and Consonant Proportions

![Diagram of intervals and consonant proportions]

Through this method, it was possible to differentiate between totally consonant and mostly consonant sonorities with any number of tones, for instance major chords and dominant sevenths respectively, and more chromatic configurations. This process was repeated for each valid event and plotted in Figure 8.9, A-L. Again, due to their quarter tone nature, the Free Music pieces could not be meaningfully adapted for this study of consonance, and thus were omitted. However, the six-voice randomised sample from the previous section was able to be included.
Figure 8.9A: Brahms Intermezzo Op.119, No.2

Figure 8.9B: Grainger *Andante Con Moto*
Figure 8.9C: Grainger At Twilight

Figure 8.9D: Grainger MS1
Figure 8.9E: Grainger MS2

Figure 8.9F: Grainger Brigg Fair
Figure 8.9G: Grainger *Irish Tune*

![Graph of Grainger Irish Tune](image)

Figure 8.9H: Grainger *The Merry Wedding*

![Graph of Grainger The Merry Wedding](image)
Figure 8.9I: Grainger *Australian Up-Country Song*

Figure 8.9J: Reger Fugue, Op.129, No.2
Figure 8.9K: Schoenberg Klavierstücke, Op.11 No.1

Figure 8.9L: 6-Part Randomised Sample
8.6 Consonant Proportions Analysis

On first glance, many of these graphs are similar in that they tend to oscillate wildly; however, on closer inspection, several distinctive characteristics serve to differentiate the graphs. Most broadly, pieces may be categorised into those that tend to rapidly alternate between total consonance and a few regular levels of dissonance, and those that meander more freely. The latter thus occupy a markedly different array of proportions and go through prolonged dissonant periods before a clear consonance returns. Note that the simplistic opening of MS2 is restricted in its oscillation, but the majority of the work is not, and the *Brigg Fair* example cannot be placed strongly in either category due to its smaller sample size.

<table>
<thead>
<tr>
<th>Regulated Oscillation</th>
<th>Unregulated Oscillation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brahms Intermezzo</td>
<td><em>At Twilight</em></td>
</tr>
<tr>
<td><em>Andante Con Moto</em></td>
<td>MS1</td>
</tr>
<tr>
<td><em>The Merry Wedding</em></td>
<td>MS2</td>
</tr>
<tr>
<td><em>Australian Up-Country Song</em></td>
<td><em>Brigg Fair</em></td>
</tr>
<tr>
<td>Reger Fugue</td>
<td><em>Irish Tune</em></td>
</tr>
<tr>
<td>Schoenberg Klavierstücke</td>
<td>Randomised Sample</td>
</tr>
</tbody>
</table>

It was observed that all the studied keyboard works fit into the regulated category while most of Grainger’s larger choral works do not. While the division suggests that medium is a major influence, when considering the other parameters it is more likely a direct result of the more limited number of tones in the keyboard works. They generally possess lower voice numbers and thus a smaller range of proportions is available.
Furthermore, this trait appears regardless of the degree of chromaticism in the work, uniting the Brahms Intermezzo, Reger Fugue and Schoenberg Klavierstücke. Although the latter starts and ends with continual dissonance, the central section notably features the rapid alternation between dissonance and consonance. Examining the Klavierstücke reduction of b.42/43 (Ex. 8.3) shows a particularly vivid instance of this process at work. It also highlights the relative vertical sparseness of the linear texture, with harmonic structures contained in dyads and triads, and thus increasing the likelihood for structures only using consonant intervals while totally removed from any tonal context.

Example 8.3: Event Reduction, Klavierstücke b.42-43

Another important aspect, considering that the immediate repetition of events was removed, was the appearance of lengthy plateaus of consonance, particularly in the keyboard works. Interestingly this included the Reger Fugue, where several highly chromatic passages are nevertheless comprised of a lengthy series of vertically consonant sonorities, as shown in Example 8.4. Combined with the trichord analysis, this implied that the extreme chromaticism Tymoczko observed was primarily horizontally-orientated in the relationship between chords rather than within them, and was another related contribution to his observed gap between Reger and Schoenberg’s music. Together, these two observations mean that a high degree of pitch class circulation did not necessarily translate into constant dissonance, nor that atonality would guarantee any aversion to vertical consonance.
Contrasting to these characteristics are the *Marching Song* sketches, and to a lesser extent *At Twilight*. Characterised by a less-centred unpredictable line, these works show a marked decrease in moments of total consonance and feature lengthier periods between them, implying greater expanses of unresolving dissonance. The major cause of this kind of profile is evident in the dense textures and independent wandering lines Grainger uses, which cause the voices to ‘agree’ less, in a harmonic sense. Therefore, they are much less prone to arriving at triadic harmonies and instead maintain a stream of dissonance, evident in passages such as Example 8.5 from MS1, reduced in Example 8.6.

Example 8.5: MS1, b.11-12

---

The comparative six-part random sample, based on the same random data used in the previous section, oscillates around an average value of 57% – extremely close to the expected 58.33%, given the 7:5 consonance-dissonance ratio of the twelve intervals. Six voices were chosen, being roughly the average number of tones present in both *Marching Song* sketches (calculated in Chapter Four). At this level of density, 100% consonance proved unlikely in a randomised texture, and the line oscillates between 40% and 80%, although occasionally such extreme values do occur. From an observational viewpoint, the randomised sample graph is most similar to MS1, with the large number of voices causing a wide variety of values that similarly do not feature the dissonance-consonance pattern applicable to the other works, even including the Schoenberg Klavierstücke.

To draw more accurate conclusions, the pieces were compared in their totality from several angles, which best defined these observed characteristics. Specifically, this included the average level of consonance for each work, the proportion of 100% consonant sonorities, and the degree of oscillation. This latter factor required considering the absolute value of the shifts in consonance, ignoring which direction the plotted lines headed. Instead it measured whether a piece veered sharply between dissonance and consonance, or was more subtly graded in its proportions. All three of these parameters are plotted for each piece on the same graph in Figure 8.9.
Figure 8.9: Average comparisons between works

- **Average Level of Consonance**
- **Average Difference Between Levels**
- **100% Consonance Proportion**
Figure 8.9 reinforces the previous observations, in that both MS1 and MS2 are generally low in all aspects, and MS1 is always lower of the two. Compared to the other Grainger choral works, the *Marching Song* sketches are less consonant, and more consistently so. Most dramatically, they feature total consonance at roughly one-third the levels of the post-*Marching Song* choral works. They are only matched or surpassed by the Schoenberg Klavierstücke, which has a much lower level of average consonance, and similar level proportion of total consonance. However, its oscillations are considerably wider and more regulated, largely as a result of its sparse texture, whereas the *Marching Song* sketches contain a more consistent stream of dissonance.

The six-part randomised sample shows that the Schoenberg Klavierstücke was not far away from the consonance levels produced in a randomised work, echoing Tymoczko’s somewhat controversial observation that “statistically speaking, atonal music is often remarkably similar to random notes, and listeners perceive this fairly accurately.”

Compared to this random sample, both *Marching Song* sketches are much more consonant, albeit with the observed persistence of mild dissonance levels. The most distinctive feature of the random profile lies in the fact that with no obligation to include consonance as a textural contrast, the random sample at the six-voice level reaches an extremely low total consonance proportion of only 0.86%. There is considerable difference between these results and those of the Reger Fugue at the other end of the spectrum. Ironically, for one of the most chromatic studied works, it has the highest levels both of consonant intervals and total consonance. This frequent return to total consonance represents another critical point of difference between the chromatically similar Fugue and MS1 in confirming that the

---

*Tymoczko, 185.*
former’s chromaticism is primarily horizontal in nature via chromatic motion, rather than vertical as dissonant sonorities.

Further supporting the transition hypothesis, At Twilight is the next closest piece to the Marching Song sketches in all three aspects, falling midway between the Andante Con Moto and MS1 values, and the imitative nature of Andante Con Moto can be seen in its remarkably similar profile to the Brahms Intermezzo. Outside of this, the other choral works are fairly consistent, but with slightly lower values of total consonance and a narrower average difference than most keyboard works. In terms of consonance distribution and behaviour, the various hypotheses involved in this research are generally well supported by these findings, in a similar fashion to those observed in pitch-class pairing.

Conclusions

This chapter found that compared to the previous discussion focusing on vertical components, there was generally a greater level of congruency evident between the Marching Song sketches and Grainger’s other choral pieces. Examining qualities of the internal structure, through the lens of trichords, revealed that free atonality meant a fundamental change of microstructure that Grainger was unable to adopt in his conventionally-notated music, and particularly the Marching Song sketches. However, MS1 was still found to be the closest to a randomised model out of the notated Grainger works. Although reliant on common triads and partial seventh formations, it also included a wider selection of other more dissonant formations, which were more frequently observed in the atonal works.

The manipulation of the vertical data into paired pitch classes showed that connections were more likely based on wider intervallic separation. As with the horizontal
method, both sketches showed significant levels of equality in their indiscriminate spread of relationships. This profile was dramatically reversed in Grainger’s later choral music, which prefers a select number of specific diatonic formations.

Finally, Grainger’s use of dissonance in *Marching Song* sonorities, although not as severe as Schoenberg’s Klavierstücke, still shared important randomised characteristics with its persistence in refraining from total consonance, particularly in MS1. Most importantly, MS1 considerably exceeds what was identified as the extreme vertical consonance of the Reger Fugue. This indicates that the Fugue’s chromatic relationships observed in Chapter Seven were more a result of inter-sonority relationships, whereas MS1’s chromaticism was more pervasive, spread between both horizontal and vertical dimensions.

The mixed results of this analysis point towards MS1 as occupying the gap Tymoczko observes between the languages of Reger and Schoenberg. While this “radical step of rejecting harmonic consistency”23 was not entirely achieved by the young Grainger, his polyphonic independence in the *Marching Song* sketches made important structural changes to pitch-class equality and the overall handling of dissonance, moving closer to the precipice of atonality than the post-Wagnerian efforts of Reger.

---

23 Tymoczko, 183.
Chapter 9

Vertical Structure Repetition

The vertical component of texture is the entire focus of this chapter. While vertical patterns and proportions have been variously examined in the previous chapters, just one particular aspect is of interest here: vertical structure repetition. Briefly, this aspect considers the total “stack” of intervals in each vertical formation, and tests for its repetition throughout a given work. This concept of interval stacks best reflects Grainger’s interest in “each moment for its momentary proportions, for the patterns created by the movements”\(^1\) which, according to him, was the primary symptom of his “special style.”\(^2\) In a 1916 letter to his biographer D.C. Parker, he states:

I believe that any originality that may exist in my “texture” can be brought home to the particular blend of horizontal and perpendicular that has always been my fate from my earliest childhood’s composings beginnings ... My chords grow out of the moving paths of my polyphony, but I listen to the result as a chordal result rather than a polyphonal result ... Where my partwriting produces dischords and collisions it is not because my mind is so centered on polyphony that I ignore the harmonic results, on the contrary, I instinctively choose partwriting that will result in a harmonic clash, because that is what my ear yearns for, and yearns for harmonically.\(^3\)

In this light, Grainger’s definition of texture is suggested by Gillies to be a kind of musical fingerprint,\(^4\) and Grainger cited Fryderyk Chopin and Cyril Scott as composers readily identifiable by the aural result of their textural choices. To examine this in closer detail, the specific objective of this chapter is to test for exact structural repetitions in Grainger’s chorus music, the most tangible manifestation of a predilection for particular

---

1 Grainger to Parker, 28 August, 1916, 12.
2 Ibid.
3 Ibid., 11.
sonorities. These repetitions may be summarised as a specific collection of intervals that may be repeatedly arrived at in any transposition, and the term “sonority” as used in this chapter treats all transpositions as equivalent. Repeated sonorities may be viewed both in terms of frequency in a given piece, or more broadly as applied to a composer’s output. While the latter method is the most logical means of directly verifying Grainger’s weft aesthetic, it also suggested itself independently at an early stage of this research. While preliminary harmonic analysis of works such as *Australian Up-Country Song* failed to reveal much of interest beyond embellishing chromaticism, it was noted that this relative poverty of harmonic variety brought into relief a vast array of intervallic structures that rarely repeated, and those that did usually occurred in sparse opening textures. Ergo, the low frequency structural repetition warranted further investigation.

Although only a purely vertical concept is explored here, the examination of sonority required multiple aspects to be considered. Beyond identifying levels of repetition within each piece, a combined process examining all of Grainger’s choral works was devised to determine if any particular sonorities stood out as particularly idiosyncratic. Additionally, it was essential to create randomised polyphonic textures to act as a benchmark, helping to compare the deliberate extent of structural repetition. While naturally rare in a randomly generated context, in reality structural repetition is a frequent event in music, and may be caused by multiple factors aside from the idiosyncrasies of personal choice outlined above. Repetition may be caused by structural or technical elements such as large-scale formal repetition, thematic and motivic obligations, and a low number of voices present within the texture. This last point is shown later to be the particular cause of the higher-than-expected

---

5 However, medium is a critical factor in this form of analysis, so it is only feasible to compare works scored for the same instruments.
repetition results in Grainger’s chorus works such as MS2 and Australian Up-Country Song. In these works, two and three voice textures unite the openings and thereby increase the probability of identical vertical structures occurring. It was also interesting to see that the highly chromatic works had some of the highest levels of repetition, suggesting sonority was an important unifying mechanism in the absence of tonal conventions.

The crux of what this chapter aims to illuminate using these elements has precedent as a concept expressed by the American composer Philip Glass. Glass recounted the revelation he experienced under his teacher, Nadia Boulanger, in an interview with his cousin, Ira Glass. He discusses the difference between what he calls ‘style’ (texture) and ‘technique’ (theoretical rules). The ideas resemble those of Grainger’s quoted at the outset of this chapter:

We were having a lesson and I had come in with my harmony. We came to a place in the music and she said, it’s wrong here. And I said, Madame Boulanger, it’s correct. I cited the rules of voice leading and said that all these things are correct and there’s nothing wrong with this. And she said yes, [...] but if Mozart had done it he would have done it like this. And she plays it [in] the correct version, which was that perhaps the soprano was in the - the third was in the soprano instead of the root of the chord [...] whatever I had done I’d done it wrong. And I looked at her and I said but look, the rules are right here. And she said yes, but it’s still wrong. I was astonished … it was at that moment that I understood what she was teaching me. I realized that she was teaching the relationship between technique and style.

For example, now let’s put the question another way. If you listen to [...] a measure of Rachmaninoff and then a measure of Bach, you know which is which [...] immediately. And the question is well, why do you know that? They both are following basically the same rules of harmonic, of voice leading. But what happens is that you have [...] recognized that Rachmaninoff will always solve a certain problem in a certain way. You may not say that to yourself, but your ear will tell you that. And that Bach will do it in his way. And you say, oh, that sounds like Bach or that sounds like Rachmaninoff or that sounds like Stravinsky … You’re hearing the predilection of the composer to resolve a technical problem in a highly personal way.6

To explore this theme, this chapter is divided into four main sections. Firstly, the complex methodology used for undertaking an examination of vertical structures is outlined, resulting in the creation of graphs that reflect parameters based on unique and repeated sonorities. Following analysis of these initial graphs, the study draws upon randomised samples as an effective means of comparison, thereby determining the degree of repetition that might naturally occur in fundamentally unstructured music. Finally, by drawing on Grainger’s choral works, evidence of a vertical fingerprint is sought to further understand his compositional process in light of his claims, quoted above.

9.1 Methodology for Examining Vertical Structures:

The vertical component of weft is in many ways easy to define as it focuses on a relatively low number of voices, as opposed to horizontal lines that may contain thousands of data points and a greater number of challenges, such as linear interruptions and merging. Vertically, the concept of distinct voices is less important, enabling a greater consistency with regards to the data refinement for analysis. In order to consider the intervals in a vertical structure, any unisons were disregarded, such as instances of merged voices; conversely, every momentary voice subdivision was valid and included. The horizontal complications of voice crossing are thankfully able to be overlooked, as sonorities are examined purely in terms of pitch height rather than harmonic function, resulting in a consecutive ‘stack’ of intervals for each vertical event as outlined in Example 9.1.
Example 9.1: Sonority Interpretation

For the keyboard works, which contained minimal crossing, this interpretation of the data reflected the standard vocal hierarchy (e.g. the lowest interval was always between the lowest two voices in the score). On the other hand, such a hierarchy could not be assumed with any degree of accuracy in the complicated chorus works. Furthermore, while the conversion of data into modulo 12 form was used extensively in the horizontal aspect, this analysis needed to resist the compounding of intervals because, from a sonority perspective, there is a great difference between two pitch classes spaced one octave apart and three octaves apart. This retention of true intervallic size was essential to explore Grainger’s conception of texture, as it focused on exact spacing rather than reductive analysis.

To incorporate the above requirements, the method for the analysis involved reordering the data so that the pitches were placed from lowest to highest, eliminating the sense of voice hierarchy and crossings. The interval distance between each neighbouring pair was then calculated, ignoring any zero values signifying unisons. The final stage for determining exact structural repetitions was simple, the interval profile for each chord was sorted to determine which whole combinations were repeated, and to what extent. These were plotted for every studied work including the Schoenberg Klavierstücke, Op.11, No.1. As
the *Free Music* pieces relied on approximation via the quarter-tone grid system outlined in Chapter Three, the resultant snapping to this grid made repetition inevitable in the opening slower moments of both works featuring only two lines. However, from a technical perspective, the freely hand-drawn nature of these works makes repetition much less likely and even a deliberate attempt at exact repetition of sonorities was inevitably only an approximate effort – this was an important point when examining the findings. The plots developed for this study consist of three lines with y-axis values ranging between 0%-100% described below. Note that the $x=0$ value in these graphs represents a single instance of a particular sonority, so $x=1$ indicates a single repetition meaning that the chord appears twice in a piece.

**% of Diversity in Chords with $n$ Repeats:** This measures how many different types of formations exist in a work, and to what extent they are repeated.

**% of (Actual) Chords with $n$ Repeats:** The actual number of chords as a percentage of the work – calculated as the product of the number of repeated chords and the respective number of repetitions.

**Cumulative Proportion of Repetitions (%):** The cumulative result of the number of events per repetition, that inevitably sums to 100%. The more gradual the rise of this line, the greater the role that repetition plays in the work.

Table 9.1 shows a simple example for a 100-event work, plotted in Figure 9.1. Here, sixty-five events are unique, ten repeat once and five repeat twice. Although the percentage of unique chords is only 65%, it occupies a larger figure in terms of diversity (81.25%). The difference between the two measurements helps to distinguish between works with
repetition concentrated in a few high frequency chords, as opposed to those that have high levels of more limited repetition.

Table 9.1: 100 Event Work Data

<table>
<thead>
<tr>
<th>No. of Repetitions</th>
<th>No. of Chords for Each Rep.</th>
<th>% of Diversity in Chords</th>
<th>% of Actual Chords</th>
<th>Cumulative % of Actual Chords</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>65</td>
<td>81.25</td>
<td>65</td>
<td>65</td>
</tr>
<tr>
<td>1</td>
<td>10</td>
<td>12.5</td>
<td>20</td>
<td>85</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>6.25</td>
<td>15</td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 9.1: 100 Event Work Plot

Figures 9.2, A to P, show the interaction of these three lines for each of the studied works, including all the romantic miniatures, the Free Music pieces and the Schoenberg’s Klavierstücke Op.11, No.1.
Figure 9.2A: Schumann Träumerei

Figure 9.2B: Chopin Prelude No.17
Figure 9.2C: Grieg Andantino Serioso

Figure 9.2D: Brahms Intermezzo Op.119, No.2
Figure 9.2E: Grainger *Andante Con Moto*

![Graph showing % of Actual Chords with n Repeats, % of Diversity in Chords with n Repeats, Cumulative % of Actual Chords over Number of Repetitions.]

Figure 9.2F: Grainger *At Twilight*

![Graph showing % of Actual Chords with n Repeats, % of Diversity in Chords with n Repeats, Cumulative % of Actual Chords over Number of Repetitions.]

367
Figure 9.2G: Grainger MS1

Figure 9.2H: Grainger MS2
Figure 9.2I: Grainger *Brigg Fair*

![Graph of Brigg Fair](image)

Figure 9.2J: Grainger *Irish Tune*

![Graph of Irish Tune](image)
Figure 9.2K: Grainger The Merry Wedding

Figure 9.2L: Grainger Australian Up-Country Song
Figure 9.2M: Grainger Free Music No.1

Figure 9.2N: Grainger Free Music No.2
Figure 9.2O: Reger Fugue, Op.129, No.2

Figure 9.2P: Schoenberg Klavierstücke, Op.11 No.1
9.2 Repeated Structure Analysis:

While there is a modicum of variation between all the graphs in Figure 9.2, they may be divided meaningfully into three broad categories: unique, repetitive and mixed. This was based on two factors, the proportion of unique structures and levels of high repetition. Works classified as unique possess a consistently steep descent of the constituent lines and have at least an 85% unique intervallic structure rate. At Twilight, MS1, and Brigg Fair fall into this category. These works contain no more than three occurrences of any single structure and while Brigg Fair is a shorter extract, the considerable length of the others makes them prime examples.

Of the unique works, MS1 is the most extreme case studied, with 204 of its 206 sonorities (99.03%) calculated as being unique by the analytical system. However, even the two repetitions (events 68-69 and 191-192) are the result of exceptional circumstances. Outlined in Figure 9.3, both are consecutive instances of an unchanged vertical sonority containing identical pitches – a state that would normally be removed through the process. Their inclusion was caused by both instances technically containing a moving voice, as circled in the excerpt, which was the usual trigger for defining a new event; yet these motions only resulted in a shift to doubling existing tones in other voices. As such, the sonority remains the same although the balance has been slightly adjusted, and it should be discounted as a repetition as it is a continuation of a single ‘event’ from a vertical perspective. Therefore, no repetitions functionally occur in MS1 and 100% of the sonorities employed are unique.

---

7 From a horizontal perspective, however, they are still entirely valid as events.
Repetitive works feature much lower unique rates, typically between 55-65%, indicating that a much larger proportion of the vertical structures are repeated. However, they are also marked by one or more rises in the black and red lines following the initial descent, often at considerably higher levels of repetition, signifying prominent sonorities. This category encompasses all of the keyboard works and notably one chorus work, *The Merry Wedding*. Factoring in the degree of repetition (the red line), these works have more repeated formations in the works than unique, regardless of the tonal/atonal language used, excepting the Brahms Intermezzo.

The mixed remainder combines a high unique chord percentage, often much greater than 80%, with distinct increases at the higher levels of repetition. This group consisted of the other Grainger chorus works and the *Free Music* pieces. Due to their low frequency, chords that repeated only once or twice were not as musically significant, despite almost always representing the largest proportion of repetition. Conversely, the belated rises observed in the repetitive and mixed works suggest the potential for important featured sonorities, despite the small number of sonorities in question.
Considering the repetitive and mixed works, establishing the specific structure of these higher repetitions was of great importance. As noted above, and in the randomly generated samples later in this chapter, the likelihood of repetition is inversely proportionate to the number of tones and the range of pitches in a texture. This creates the need to distinguish between cases of simple triads or single intervals resulting from momentary sparseness, and more distinctive “personal” sonorities. Uncovering these frequently used and complex sonorities makes an exponentially stronger case for evidence of a fingerprint within a composition’s texture; the more complex a formation, the more deliberate its construction, and the more recognisable the sonority as it appears throughout a work. However, the opposite is also true, and many of the mixed chorus works also possess areas of low tone densities (see Chapter 4). As such, gradually unfolding openings evident in MS2, Australian Up-Country Song and the Free Music No.2, and generally sparse textures such as in The Merry Wedding, result in large quantities of simplistic repetitions that do not convincingly serve as a textural fingerprint.

To explore the degree of complexity involved, the frequent sonorities are displayed for each applicable piece in Figure 9.4. For ease of comparison they have been transposed with C4 as the lowest pitch.

---

8 Although as Grainger suggests this may not necessarily be a conscious decision, but also a matter of subconscious taste or preference. Grainger to Parker, 28 August, 1916, 11.
9 With “frequent” defined here at a level of five occurrences or more.
Figure 9.4: Frequent Sonorities in the Repetitive and Mixed Works

Schumann *Träumerei*

Grieg *Andantino Serioso*

Grainger *Andante Con Moto*

Grainger *MS2*

Grainger *Irish Tune*  
Grainger *The Merry Wedding*  
Grainger *Australian Up-Country Song*

Reger Fugue, Op.129 No.2

Schoenberg Klavierstücke Op.11 No.1
Figure 9.4 confirms the low level of complex sonorities in Grainger’s chorus works, capitalising on the fluctuating number of tones. Higher repetition levels tend to attract only three distinct tones, epitomised in *The Merry Wedding* and MS2. Therefore, a large proportion of the repetition spikes observed in the chorus music of Figure 9.1 were allocated to intervallic structures that are more likely due to the limited variety of structural options, rather than through critical choices. Contrastingly, the *Andante Con Moto* and the romantic miniatures all contain wider sonorities, drawing on up to six pitches in a single structure. Similarly, those keyboard works from the twentieth century make use of high levels of repetition, and tend to make extensive use of wide single intervals and lopsided sonorities, as opposed to the clear tonal implication of most other frequencies in this chart. Therefore, the keyboard works generally appear to combine the high levels of repetition with more complex or distinctive formations, providing much clearer signs of compositional tendencies than the Grainger chorus works.

### 9.3 Comparison to Randomised Samples

It was strongly evident from preliminary analysis that sonority repetition in most studied works was a deliberate construct, even accounting for the limitations of pitch caused by tonality. However, to fully appreciate the above findings it was important to determine the degree to which repetition would naturally be expected to occur in an equivalent sample of randomised, unstructured music. This would provide a model for randomly occurring repetition in contrast to deliberate repetition, as given a large enough sample size, repetitions will become increasingly more likely. Therefore, comparison to
randomised samples provided a context regarding the extent to which repetition would normally be expected under similar, yet unstructured circumstances.

A program was devised that generated random chromatic and diatonic structures for four-part and six-part polyphony, as there were sufficient works studied with four and six voices for comparison. Each voice possessed the vocal compass average of twenty-five semitones derived from the ranges supplied by Théodore Gérod.\textsuperscript{10} Likewise, together the voices could span a total range of fifty semitones; a maximum implied in this same source (D2 to E6). Overlaps were systematically tested, distributing the voices equally at different widths, starting with complete overlap (with all voices sharing the same twenty-five semitone compass), then with a space of one semitone separating each of the voices, and so on. Note that the six-voice option only required five semitone spacings to reach the maximum total range as illustrated in Figures 9.5 and 9.6.

\textbf{Figure 9.5: Four-Part Maximum Spacings}

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{four_part_max_spacings.png}
\caption{Four-Part Maximum Spacings}
\end{figure}

\textsuperscript{10} Percy Grainger, “Methods of Teaching and Other Things,” 11-12. Also outlined in Chapter 1.
The proportions of unique sonority frequency for samples, each 1500 events long, was averaged for each degree of voice separation. The chromatic version used all twelve tones, while the diatonic strand was limited to seven, resulting in fewer structural possibilities and increased likelihood of repetition. As all the studied works fell somewhere between this spectrum of chromatic (MS1) and diatonic (Irish Tune), the area between the two lines in Figure 9.7 represented a space of realistic repetition for the tonal/atonal spectrum, where relevant music could be expected to fall without artificial vertical structuring. These results were plotted for four-part (Figure 9.7) and six-part scenarios (Figure 9.8).
Randomised polyphony within practical vocal ranges was generally shown to be relatively unlikely to involve repetition, even when only four voices were present. However, considering the four-part texture in Figure 9.7, the initial total overlap (x=0) encourages a significant degree of texture repetition, with a 36.9% - 67.6% probability that the generated chords are unique, depending on chromaticism. Therefore, one- to- two-thirds of sonorities are expected to repeat, which is similar to the levels observed in the repetitive keyboard works. However, this diminishes considerably as the registers spread out to encompass the available register, and the distance between chromatic and diatonic probability narrows to around 5%. As the voices approach equal distribution across the fifty semitone range, unique structures become substantially common at 84.9% - 90.2%, meaning only 9.8% -
15.1% are likely to be repeated. This low level of natural repetition is actually strongly at odds with the four-part keyboard works.

**Figure 9.8: Six-part Unique Vertical Structures at Various Degrees of Overlap**

Examining the six-part variant, Figure 9.8 demonstrates that increasing voices severely curtail the likelihood of repetition at all levels of overlap. Even with all six voices completely overlapping, this model shows a 92% - 98.9% probability of unique sonority generation, which increases to 99.7% - 99.9% at its maximum distribution. To put this in perspective, a freely meandering six-voice polyphonic work for mixed choir with 1000 events would be expected to have only one chord that occurs twice. This is, of course, randomly generated music – a series of random vertical structures without any coherent connection between them, but which serve to highlight that for actual musical textures
involving six or more voices, repetition is entirely caused by design. It also makes it possible to assume a 100% expectation for unique sonorities in textures involving vocal parts for seven or more voices, meaning that for the denser textures and relatively small sample sizes (<500 events), such as the Marching Song sketches, repetition in free polyphony is statistically unfeasible.

Using the same process for these figures, a more specific means of comparison uses the observed compasses of four- and six-part works (defined in Chapter Five) as the distribution points. Therefore, a likelihood of unique sonorities can be calculated for a piece that is chromatic and unstructured, but within the established ranges. This then allowed for comparison to the realised proportions calculated earlier in this chapter as shown in Figures 9.9 and 9.10.

Table 9.9: Actual and Randomised Unique Structures in Four-Part Works
Figure 9.9 shows the expectation and reality of unique structure levels in the four-part works. The highly randomised values (averaging 89%) suggest that the distance between voices is spread sufficiently enough to be comparable with the upper end of the spectrum in Figure 9.8, confirming that repetitions are naturally an infrequent occurrence. This contrasts with a consistently large gap averaging 32% between the realised keyboard works and their randomised counterparts, suggesting that repetition plays a significant role across composers and degree of chromaticism. This notably includes the Reger Fugue, with a result remarkably similar to the more conventionally tonal works. The visible exception is *Free Music No.1*, which matches to within 2% of its randomised value. The qualities of the piece, resembling “the outlines of mountain ranges, each independent and individualistic in itself,”\(^\text{11}\) and the inexactness of the graphical composition translate to the unstructured creation of vertical sonorities, despite its more limited register and overlapping tessitura. Further, the repetitions that do occur are roughly in proportion to what would be randomly expected in a four-voice scenario, making it indistinguishable in this regard from free music.

---

The same process was undertaken for the six-part works and displayed in Figure 9.10. As expected, the randomised distributions were much higher and narrower, uniformly ranging between 98.75% and 100%, levels roughly 10% higher than in the four-part equivalent. While Chopin’s Prelude No.17, as an earlier keyboard work, is higher in unique sonority proportions than its four-voiced keyboard counterparts at 68.75%, it also possesses a parallel rise in its randomised equivalent, maintaining the large 30.9% gap between the two lines. Grainger’s chorus works, on the other hand, reflect a much closer shift towards the randomised expectation, averaging only an 11% gap. Again, the Free Music No.2 attains the closest result with a 4.5% gap.

As the modelling suggested that seven or more voices will approximate a random value close to 100%, the other works with higher, less consistent voice numbers can also be compared (Table 9.2). The 11% gap also holds remarkably well for most other chorus works,
with MS2, *At Twilight* and *Australian Up-Country Song* between 87% and 89%. *The Merry Wedding* is the outlier with its low 60.91% unique average; though it possesses seven distinct voices, these are rarely all present in the texture, resulting in a 3.35 tone average. This outlier aside, the results prove that a change in medium from keyboard to chorus was accompanied by a shift in vertical texture to a generally more unique collection of sonorities. This is exemplified by MS1, as discussed earlier, which effectively contains 100% unique sonorities, confirming its identical quality to unstructured music and evidence of an entirely horizontal compositional method, where vertical structures are by-products rather than objectives. Therefore, this sketch achieves vertical liberation to a greater extent than even the *Free Music* pieces.

**Table 9.2: Unique Structure Proportions in Other Works.**

<table>
<thead>
<tr>
<th>Piece</th>
<th>MS1</th>
<th>MS2</th>
<th><em>At Twilight</em></th>
<th><em>Australian Up-Country Song</em></th>
<th><em>The Merry Wedding</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Unique Structures (%)</td>
<td>98.54</td>
<td>88.43</td>
<td>88.34</td>
<td>87.64</td>
<td>60.91</td>
</tr>
</tbody>
</table>

**9.4 Combined Analysis of Grainger’s Choral Music**

The final section of this chapter discusses the comparison of repeated vertical structures, using the gathered data from across all of Grainger’s chorus works. Effectively the same process used in the initial plotting, the objective in this analysis was to find evidence of choral textures that feature strongly across multiple works. Such textures would shed light on Grainger’s claim of selecting sonorities based on his aural yearning.¹²

---

¹² Grainger to Parker, 28 August, 1916, 11.
Given that many of these works had reasonable numbers of internal repetitions already extant, Figure 9.11 shows a decisive lack of any further substantial rise that may have been symptomatic of common sonorities. To illustrate this, chords that appeared in at least three of the seven works are listed in Figure 9.12, together with their total number of occurrences. While there were other frequent sonorities, most of these could be discounted by being heavily concentrated in one or two works. The reduced two or three voice textures
occurring in MS2, *Australian Up-Country Song* and *The Merry Wedding* were the major contributors in this regard as previously shown in Figure 9.4.

**Figure 9.12: Frequent Sonorities in the Grainger Choral Works**

<table>
<thead>
<tr>
<th>No. of Occurrences</th>
<th>No. of Works</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

In terms of identifying vertical structures that could potentially be labelled evidence of Grainger’s compositional fingerprint, a number of factors were considered. The primary factor was the complexity of the chord, both in the number of tones and intervallic sophistication (i.e. featuring tones outside the common triads or using patently large or small intervals). The number of tones was important because, as listed above, an increased number of voices dramatically reduces the likelihood of any given formation and the latter (intervallic sophistication) due to the striking auditory result. Distribution throughout a number of different works, and the number of repetitions, were also important factors. Considering these points, the highest level of repetitions uncovered in Figure 9.12 were less representative of distinctive texture due to their simplistic nature as simple triads with only three tones.

However, two chords stood out as potential candidates, both with eight occurrences across four of the seven studied works (marked with arrows in Figure 9.12). Both chords had at least four notes in their structure and, most interestingly, they are both seventh chords (minor and dominant seventh) united in third inversion. However, the frequency of these chords was bolstered by at least half of their appearances occurring in particular works (MS2 and *Irish Tune* respectively). Therefore, despite the evidence, it still remains a stretch
to consider these structures as distinctive textural elements across Grainger’s chorus writing, especially considering that the overall level of repetition is quite low. Figure 9.12 also shows the wide variety of structures Grainger employed, with five different versions of the simple major chord shown spaced between two octaves. The absence of a strong preference for any of these is also evidence that opposes the idea of a definable vertical texture in Grainger’s choral music.

The main point to be drawn from this part of the analysis is that, given the overwhelming variety of sonorities, there is relatively little statistical evidence of a consistent vertical fingerprint in Grainger’s choral music. While some interesting sonorities do occur across multiple works, at least half of the repetitions belong to a particular work. The occurrence of repetition in the choral music, which is minimal compared to the other studied works, therefore appears to be mainly localised and case specific. From the findings of this chapter, Grainger’s choral texture is marked by a constant generation of new sonorities, even when working within the confines of tonality and epitomised by the remarkably unstructured nature of MS1.

**Conclusions**

High levels of unique sonorities mark the majority of pieces within Grainger’s chorus repertoire, separating them from the keyboard works and narrowing the gap between their realised levels of repetition and the unstructured equivalent. Even the chorus works that do feature higher levels of repetition were found to do so only due to stretches of limited tones in an otherwise complicated texture. The most striking finding was that the generally low levels of repetition are taken to the extreme in MS1, which appears more structurally liberated than even the *Free Music* pieces (albeit with the quantitative handicap of
measuring the latter). Further, it was the only studied work to be completely unique, matching the expectations of unstructured and randomly generated music for a similar sample size. The implications of this result suggest this method of composition is indeed horizontally derived, with no preconceived structural tendencies imposed upon the voice leading. To a lesser extent, this is true of the other unaccompanied choral works, which confirms Grainger’s statement that his “chords grow out of the moving paths of [his] polyphony.”

The evidence in this chapter points to the strong possibility that, for all his theorising on the issue, Grainger did not actually have a clear personal texture of his own. While exact structural repetition is shown to play a massive role in the keyboard works, regardless of tonality/atonality, Grainger’s choral works can generally be seen to reduce this level considerably, with the Free Music pieces appearing extremely limited in their repetition. Ultimately, the findings across all of Grainger’s studied works failed to reveal any strong evidence of an idiosyncratic vertical fingerprint, with no more than a small handful of chords appearing only a few times across the seven chorus works, and very few of these containing any distinctive importance. While a more expansive and focused study may uncover more convincing results, particularly if exploring other mediums, for the chorus works it appears unlikely as the subjects here included several of his more substantial unaccompanied pieces. However, this absence of a fingerprint is, in itself, an important finding. While composers may make “critical or unconscious” choices that define them, Grainger ironically appears to be exempt – possessing an ear that was attuned to fresh vertical sonorities. Regardless of whether or not he was directly aware of this characteristic, these findings allow Grainger’s

---

13 Grainger to Parker, 28 August, 1916, 11.
14 Ibid.
Hyde Park analogy to take on a new perspective, when he states that: “I like a musical Hyde Park corner traffic ... for the patterns created by the movements rather than I enjoy following the continued path of any particular vehicle.” It is also true that no two traffic combinations are ever likely to be exactly the same – a parallel that can be readily applied to his choral music. Overall, the examination of vertical sonorities provides perhaps the most direct insight into the “blend of horizontal and perpendicular” that ostensibly characterises Grainger’s music.

15 Grainger to Parker, 28 August, 1916, 12.
16 Ibid., 11.
Chapter 10

Conclusion

The *Marching Song of Democracy* occupies a unique position in Percy Grainger’s compositional output. Originally sketched out with the promise to be one of his most ambitious works in terms of concept, difficulty and vocal forces, it subsequently underwent a series of compromises and reductions that ultimately led it away from that goal. However, this study has arrived at the conclusion that *Marching Song* still deserves to rank as one of his most important works, not only through being closely tied to Grainger’s aesthetics more vividly than most others, but through the implications of the founding sketches of 1901-1902. These sketches combine elements of musical democracy and free music to an extent unprecedented until the later *Free Music* pieces, thus anticipating his most celebrated and mature achievements. Both sections of the *Marching Song* sketches are remarkable in their own right. The sheer voice crossing, polyphonic density and overlap of tessitura stands MS2 apart, while MS1 represents a new kind of horizontal approach to music, akin to unstructured music while still technically tonal, and even closer to true atonality in some respects than the highly chromatic music of Max Reger.

In order to determine the exceptional or anticipatory nature of the sketches, five main research questions regarding its positioning were addressed in each analytical procedure where applicable.

1) To what extent were the characteristics in the sketches transitioned out of Grainger’s previous works?

2) To what extent were the distinctive features of the sketches retained in Grainger’s later choral music?
3) To what extent were the distinctive features of the sketches atypical compared to Grainger’s later choral works?

4) Could elements that anticipated the rise of the Free Music pieces be observed in the sketches?

5) How are the sketches positioned relative to works of atonality and extreme chromaticism?

The findings in relation to these questions vary depending on the method of analysis and required a complex, multipronged approach to provide a rounded response. In most cases, one or both of the Marching Song sketches proved exceptional, with firm evidence of a preceding transition represented by At Twilight, commenced in 1900. While some elements did remain in the chorus works following the sketches, just as often a reversal was observed, serving as evidence of Grainger backing away from the extremes that the sketches explored. However, with the creation of the Free Music pieces during the mid-1930s, many qualities tended to re-emerge in some notable instances. This indicated that with the removal of western notations, quantitative restrictions and the rise of technological methods of performance – the concepts critical to the Marching Song sketches could once again be explored, and their significance highlighted. Finally, although the results were mixed, the qualities of MS1B at times exceed the tonal liberation inherent in both post-Wagnerian chromaticism and atonality, implying an important albeit rare instance of Grainger’s musical language rivalling the forefront of early twentieth-century musical advancement.

The taxonomy and historical discussions in this study create a resource for future study, thoroughly expanding the existing thematic analysis to encompass additional motivic material as rendered significant by the sketches. In a more general sense, it also serves to
highlight the fact that there are remarkable hidden depths yet to be explored in Grainger’s catalogue, which have been overshadowed by notoriety, popularity and published innovations. The taxonomy of the sketches showed that MS1B was effectively a freestanding ramble devoid of the thematic materials and underlying structure of MS2. Similarly, the circular order of composition for the *Marching Song*, and the corresponding thematic development, was shown to originate from the centre of the piece towards the end, and then from the start to the end. MS2, which made up the bulk of the 1901 sketch material, was clearly intended to lead into the final closing stages of the work with its gradual build up of compass and polyphonic complexity. This sheds an interesting light on Grainger’s compositional process and informs the thematic development as being essentially retrograded in relation to its order of appearance, thus adding new insight to Joseph Kreines’ existing analysis.

Additionally, the sketches are central to a rare but highly important instance of Grainger seeking of compositional advice when writing ambitiously for choir. This, in part, challenges the Klmsch hegemony Grainger would later emphasise, in light of the teachings of Théodore Gérod uncovered in this research. The *Marching Song* sketches, and many other choral works of the same era, tangibly benefitted from the idiosyncrasies, limitations and techniques Grainger discussed with Gérod and show the younger composer deferring to the experience of the choral specialist. Additionally, this finding hints at the possibility that other peripheral, yet significant figures of influence on Grainger may remain unacknowledged.

The study of the *Marching Song of Democracy*’s performance and reception history was also informative. Its significance to Grainger is evident through his sustained encouragement of its performance, achieved largely through his influence as conductor and
ensuring its frequent airings in the USA. The aim to increase its accessibility through elastic and alternate scoring led to these versions becoming more popular than the original, with the version for wind band being the most frequently performed thus far. However, the gradual decrease of scope and removal of the human voice led it further away from its roots and instead closer towards abstraction as an original and large-scale work, but one somewhat divorced from its aesthetic. As a result, it has been relatively glossed over by Grainger scholars.

Similarly, it was found to be the only work Grainger would promote on both of his major concert-giving tours of Australia. However, although the *Marching Song* had a strong association with Australia and its peoples from the outset, the complex and critical reception it received in these performances appeared to be a primary trigger in Grainger’s subsequent disillusionment about his place as an Australian composer. Examination of the correspondence surrounding this sudden shift from advocating the *Marching Song* in his country of birth to singling it out for withdrawal, even after coaxing from the ABC, shows how deeply antagonistic the circumstances were for him. The troubled performance history is also found to still be much the case today, particularly in terms of Australian airings.

Regardless, there is a strong case to be made for the *Marching Song of Democracy*, in its original form, possessing a prime status in his output due to its unique blend of aesthetics, scope and innovation.

Understanding the unique qualities of Grainger’s music required a fundamentally unconventional approach to its analysis. There was to be less emphasis on the conventional aspects, such as harmony and structure, and more on the weft and warp that defined Grainger’s conception of texture. This was achieved through an emphasis on the vertical and horizontal intervals that constitute a piece, as well as pitch-class relationships and
polyphonic behaviours. Intervalllic representation was an initial approach that offered a visual indication of the distinct and complex characteristics of the Marching Song sketches, and which would serve as the foundation for the subsequent analysis.

Textural density, defined by the relationship between the number of tones in a certain pitch space, proved to be an element through which the Marching Song sketches distinguished themselves, breaking significantly from the later choral works due to their overwhelming tone numbers. However, from these early sketches, Grainger began to develop a practice of maintaining a high textural density by splitting and merging forces proportionately as the compass expanded and retracted. This became an important general compositional trend, shown to emerge and persist throughout the later choral works. Although observing the pieces produced clear distinctions relating to each work’s structure and use of contrasting density, this aspect did not show strong statistical evidence of compositional development, nor a direct connection between the sketches and the Free Music, due to the limited maximum ‘tones’ of the latter. The novel methods used here to display this data, particularly the Chernoff faces, enabled the many relevant factors to be represented simultaneously and effectively in order to provide a rounded view of the studied works.

In contrast, tessitura and compass overlap was found to be a more distinctive aspect of Grainger’s choral writing as a whole, with the coexistence of same and similar vocal parts (typical features of his scoring) causing considerable overlap. Additionally, his vocal writing was much more balanced in its exploration of compass, being less prone to explore extremes when not bounded by neighbouring voices. Although both choral works, the Marching Song sketches appeared united in their rivalry of the keyboard compass, with extreme limits of all voice types explored to a greater extent than Grainger would do in his
published works. Most significantly, a reversal of the trend that greater voice numbers result in more limited tessituras shows that, past a certain point of density, voices begin to reclaim their own space.

Voice crossing proved to be a very significant feature of Grainger’s polyphony, and was used to a pervasive extent in both *Marching Song* sketches. David Huron’s measurements of this phenomenon required significant expansion to accommodate the breakdown of vocal hierarchy that intensive crossing causes. As such, a universal approach was created, encompassing all possible linear interactions. The preservation and independence of the melodic contour in many of the chorus works, regardless of neighbouring contours, is symptomatic of democratic ideals where no particular voice is able to distinguish itself from the homogeneous mass of sound. It is therefore unsurprising to find that the *Marching Song* sketches epitomise these ideals, preceded by increased merging behaviour in *At Twilight*, and thereafter affecting his choral music studied here to a significant extent. This linear freedom also becomes a defining element of the free music, with a near-total reduction in merging reflecting the complete independence of the polyphony.

Examining the music in terms of its horizontal patterns revealed the unique qualities of MS1B, sketched separately and as an apparently unplanned draft in 1902. Distinct from MS2, its pitch-class circulation was revealed to be exceptional, and closer to the highly chromatic and atonal music of the twentieth-century than Grainger’s other works. It anticipates the liberation of pitch-class frequency that was only achieved in the *Free Music* pieces. The paired pitch-class and interval methods showed more unified results between the two sketches and emphasised an equal spread based on distance rather than specific motivic connections, pointing towards the trends observed in the approximation of *Free*
Music No.2. A transition away from the keyboard medium of Andante Con Moto was observed in both of these methods; however, the later choral music abruptly reverted back to more economical and deliberate behaviour, selecting a few important pairs and disregarding most others.

From a vertical perspective, the grouping of trichords was the one aspect that suggested both sections of the Marching Song sketches were not particularly unique, with the sonorities being bound by tonality despite their chromatic context. Along with almost all other studied works, only the Schoenberg Klavierstücke, the Free Music, and randomised samples were able to break this final bastion between tonality and atonality. That said, while MS2 was extremely resemblant of the combined choral work profile, MS1 did quantitatively come closest to the atonal model, followed by Andante Con Moto, thus providing no evidence of transition in this analysis. The pairing results were largely replicated from a vertical perspective, again linking the two sketches and distinguishing them from the later works. From this perspective, a transition was able to be ascertained to a similar extent as in the horizontal pairings. An examination of consonance proportions pointed again to both sketches being united in their low rate of 100% consonance. MS1 again appeared to be the most extreme instance of the tonal works in terms of overall dissonance, although it was still significantly below the levels observed in the atonal/randomised music. Curiously, the highly chromatic Reger Fugue, which surpassed MS1 in the horizontal dimension, was found to be relatively conservative in a vertical sense, relying on chromatic motions rather than sonorities. This finding implied that MS1 was more pervasively chromatic, when considering both dimensions.

An aversion to repeated vertical structures was another noteworthy characteristic of Grainger’s choral music. A survey of the vertical structural repetitions that did occur
indicated that they were largely influenced by moments of low voice numbers, thereby dramatically increasing the natural likelihood of repetition. In contrast, the keyboard works often made use of complex and greatly repeated structures, implying a predilection for particular sonorities. The Grainger works, on the other hand, had very little evidence to indicate a preference for particular vertical formations, even when his choral works were considered together. Rather, it appeared his self-analysis that the “chords grow out of the moving paths of my polyphony”¹ was essentially correct, and that no defining vertical fingerprint unduly influenced their individual movements. The most significant finding in this area was the almost total lack of repetition in MS1 – the only work that matched the simulation of naturally occurring repetition in randomised music. This was evidence of a radical compositional process, a kind of proto-texturalism, harnessing the democratic overcrowding of independent voices and embracing their collective result.

This research touched upon many additional promising avenues that were beyond the scope of this dissertation to traverse further. In a general sense, the continued application of unconventional analytical techniques, as applied to Grainger’s music, has the potential to reveal a great number of things that are overlooked when boxing it into conventional methods. It is hoped this dissertation may serve to show the promising depths that remain to be explored in Grainger’s less prominent or studied works. Similarly, there is a need for scholars to explore methods that are accessible to a general musical audience if statistical analysis is to make a musicological impact. As such, the idea of Chernoff Faces, which increase in relevance proportionately to the number of works studied, is a technique that is well worth considering.² For all its subjective flaws, the impressions the method

¹ Grainger to Parker, 28 August, 1916, 11.
² A picture is worth a thousand words after all.
allows, and its ease of interpretation, mean that it offers great potential when dealing with foreboding amounts of data.

In a more specific sense, the concept of a compositional fingerprint for Grainger cannot fully be discounted until a more comprehensive and dedicated study is undertaken, surveying a wide variety of mediums and observing other factors that were beyond the present scope. This would serve either to reinforce the idea that Grainger’s music was distinguished by a continually fresh sonority palette, or find evidence of vertical predilections. Such a study could examine a blend of vertical and horizontal dimensions to consider the use of such typical Grainger techniques as triads in conjunct motion.

From a practical perspective, the next logical stage in terms of the *Marching Song* sketches is a realisation of the a cappella conception, most likely with the assistance of digital technology. Recreating this work would again draw attention to its important roots, and highlight the innovative magnitude of what Grainger was attempting to achieve. It is similarly important to encourage the re-establishment of the choral element in the version for wind band, and foster future Australian performances in light of its significant association in the struggle of Grainger’s recognition in his country of birth.

Finally, many prominent composers influenced by Percy Grainger’s aesthetics and innovations were surveyed at the outset of this research. As the dissertation’s focus began to shift onto the *Marching Song* sketches, however, it sadly became unfeasible to include their responses detailing his impact on their music. As such, the present-day impact of Grainger remains largely unexamined, but the music of significant twenty-first century figures including Michael Finnissy, Cat Hope, Gavin Bryars, Robert Davidson and Ros Bandt is extremely fertile ground for future research in this area. Ongoing study into this growing
composer collective would do much to enhance Grainger’s reputation as a significant twentieth-century figure.

This study has made the case that the *Marching Song of Democracy* was one of Grainger’s most significant and ambitious projects from personal, aesthetic and virtuosic perspectives. Through a series of unique analytical approaches, it has shown that the sketches for this work represent a burst of unbridled creativity – a force that the composer would keep in check until the more openly experimental end of his career. Essentially, the *Marching Song* sketches mark Grainger’s coming-of-age as a mature composer, and represent the first tangible surfacing of a musical ideology forged on the waves of Albert Park Lake.
Appendix

Marching Song of Democracy Sketches

The Marching Song of Democracy sketches, MS1 and MS2, were typeset and included here for reference throughout the dissertation. The original sketches, particularly MS1B, are working copies containing numerous inconsistencies, ambiguous shorthand, and notes that are most likely errors. Additionally, legibility was sometimes an issue. Though it is highly likely that Grainger would have clarified these matters if the sketches had continued into more developed drafts, the objective of including them here is purely referential, not to provide a practical realisation. Thus, typesetting served only to present a neatened form of the sketches, and no attempt has been made to correct the issues or to interpret the music. The only substantial changes to the sketches are the consistent formatting of one stave per voice,\(^1\) and the full writing out of merged parts in both voices.\(^2\)

Grainger’s copyright material has been reproduced by kind permission of the Estate of Percy Aldridge Grainger.

---

\(^1\) Grainger sometimes redistributes the various sections (such as four whistling parts redistributed as three parts in MS2). The sketches here indicate just one possible distribution of the chorus.

\(^2\) Grainger sometimes condenses multiple voices into a stave, which are notated here separately. Occasional momentary divisions of a single voice are kept on the one stave, however.
Marching Song of Democracy

Sketch 1

Percy Grainger
* Nb. Contralto meant as contralto and is a renaming of the Tenor 1 part
Marching Song of Democracy

Sketch 2

Whistlers 1

Whistlers 2

Whistlers 3

Whistlers 4

Bey Sopranos Solo 1

Bey Sopranos Solo 2

Bey Sopranos Solo 3

Bey Sopranos 1

Bey Sopranos 2

Bey Sopranos 3

Bey Alts Solo

Bey Alts 1

Bey Alts 2

Bey Alts 3

Contralti

Tenors 1

Tenors 2

Tenors 3

Baritones 1

Baritones 2

Basstos 1

Basstos 1

Basstos 3

Foot of Whole Chorus

Percussion
\[
\sum_{i} \sum_{j} \sum_{k} \sum_{l}
\]
Bibliography


Scores


