THE UNIVERSITY *of* EDINBURGH

From Sight to Sound: Exploring creativity, improvisation and interactivity in graphic composition and performance

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PhD Music

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Declaration

I hereby declare that I am the sole author of this thesis; that contents therein are entirely my own research; and that no part of this thesis has been submitted for another degree of professional qualification.

Russell Wimbish, January 2020

Abstract

This thesis examines practitioner perspectives on graphic scores and applies the findings compositionally. Since first appearing in the 1950's, graphic scores' idiosyncratic musical notations and methods of performance have presented musicians with unique conceptual and performative challenges. However, a lack of scholarly research and pedagogical representation has resulted in a dearth of knowledge on how to assess, compose and perform graphic works. This research addresses this deficiency by exploring methods of interpreting graphic notation, the role of improvisation in performance, and how composers and performers attempt to effectively communicate compositional and performative goals. In doing so, this thesis provides crucial insights into contemporary musical practice, the nature of creativity, and how social processes impact on musical performance.

The first objective of this research was to collect information on how musicians have created and performed compositions that use graphic notation. To collect data, I conducted interviews with musicians professionally acknowledged as exemplary performers of new music. I then analysed the data qualitatively using interpretive phenomenological analysis. This methodology allowed a detailed examination of the research participants' individual approaches to graphic composition and how

performance environment and personal history have influenced their methods of engagement.

In addition to the written thesis, this research applied the data towards the creation of seven original graphic compositions. This process allowed me to explore the data in praxis as well as in theory. By using the data to inform the creation of these works, this thesis presents these pieces as evidence-based composition, as they have derived directly from the analysis.

This research shows that graphic composition is a diverse and heterogeneous field that is defined more by social practices than by a formal codification of practice. These findings also demonstrate that graphic scores have democratised the compositional process by distributing creative agency between the composer and the improvising performer. Lastly, this study reveals that interpersonal relationships and social interactions are crucial to the process of composing and performing graphic scores.

The conclusions of this thesis contribute much to the study of graphic composition. These findings are also significant to research within the fields of contemporary concert music, improvisation, musical pedagogy, musical communication and research into contemporary performance practice.

Lay Summary

This thesis explores how professional musicians have created and performed graphic scores, that is, compositions that feature non-traditional musical notations. Though graphic scores have a history of performance practice that dates to the early 1950's, they have suffered from a lack of scholarly research. As a result, there is much about these works that is not widely understood. My research addresses this knowledge deficit by recording how practicing musicians approach graphic scores, and applies this understanding to the composition of new graphic works.

To conduct this research, I interviewed professional musicians about how they create and perform compositions that use graphic notation. We also discussed the role of improvisation in graphic score performance and how composers and performers can best communicate their musical objectives to one another. From my analysis of these conversations, I created graphic scores that demonstrated the most significant discoveries of this research.

This thesis has resulted in a better understanding of graphic score composition and performance. It has provided new insights into contemporary improvisation, effective musical communication, and how practitioners evaluate their craft. It has also offered new understandings of

the nature of creativity and compositional authorship by examining how the composer and performer work together to create the music we hear.

Acknowledgements

I would first like to thank my wife, Whitney Curry Wimbish. Her constant love, support, understanding (and willingness to relocate to Scotland!) has made this whole endeavour possible. I certainly could not have arrived at this point without such a strong, intelligent, artistic and beautiful person in my corner the whole time.

Next, I would like to thank my supervisors, Raymond MacDonald and Anne Desler. Their encouragement, expertise, and brilliant analytical insights have been invaluable throughout my PhD. Both have taught me an incalculable amount about the craft of research, conducting an intellectually rigorous analysis and clearly presenting my ideas. Their excellent supervision and guidance have been instrumental to undertaking and completing my research.

I would also like to give a huge thanks to my parents for their support, encouragement and visits to Edinburgh.

I am extremely grateful to the research participants for taking time out of their schedules to share their time and expertise with me: Robert Black, Simon H. Fell, Barry Guy, John Lindberg and Liza Mezzacappa. Each is a titan in the field of modern music, and I truly could not have asked for better participants

to contribute to this study. Sadly, I must recognise the passing of Simon H. Fell in 2020. I feel fortunate as a researcher and as a person that he shared his time, intellect and experience with me for this project.

Finally, I would like to extend a sincere thanks to the outstanding faculty and research community I have met through the Reid School of Music. A special thanks to Marian Jago, Nikki Moran, Peter Nelson and Graeme Wilson for sharing their knowledge and giving me the opportunity to teach, play, compose and discuss music with wonderful people.

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Chapter 1 Introduction

1.1 Overview

This thesis examines my creative musical practice by exploring the relationship between original graphic compositions and data collected through academic investigation. It investigates how learned practitioners compose, interpret and perform graphic scores and uses qualitative analysis to discover what each research participant deems important in graphic compositional practice. This thesis applies these findings to the creation of seven original graphic compositions and demonstrates how the compositional structures of these works have been informed by the data analysis. In this chapter, I establish the need for this research, provide a brief history of graphic scores and their compositional antecedents, and introduce the research questions that guide this study. It concludes with an overview of research methodology and creative output.

1.2 Justification for research

'How do you play that?' This simple question is central to discussions of graphic notation and indeed goes to the very heart of this research. As a professional musician and teacher with a deep interest in graphic composition, I have heard this question asked by esteemed colleagues, curious students, and friends in non-musical fields. I have heard it asked derisively and with a genuine inquisitiveness. I have asked it myself. Yet despite this prevalence, it can be a frustratingly difficult question to answer.

No pedagogical methods for graphic interpretation exist. Likewise, there is no graphic score anthology equivalent to Stone's (1980) *Music Notation in the Twentieth Century: A Practical Guidebook* or Boretz and Cone's (1976) *Perspectives on Notation and Performance.* And if my own experiences as an undergraduate and master's student are any indication, graphic scores are frequently absent from university classes on composition and improvisation. Even our favourite search engines, those oracles of quickly forgotten information, are of little help to those with serious inquiries into graphic score performance.

Questions of how to play and interpret graphic notation are a crucial concern for composers, for how can one compose a score without a rigorous understanding of the relationships between notation and performance? Undoubtedly, in Western art music, notation has become the primary means by which composers present their ideas to performing musicians. To this end, Western musical notation has been systematically developed in order to textually communicate, as much as possible, accurate depictions of aurally perceived events (Bamberger, 2005, p. 145). However, musical notation is more than a method of communication. It affects how musicians develop musical ideas and is integral to the performative traditions and cultural practices of musical communities (Barrett, 2005, pp. 119, 121). As musical notation thus functions as an information transmission model and as a cultural practice, an understanding of how performers approach graphic

notation is essential to graphic composition. Yet scholarship on this subject is difficult to find.

Certainly, information is available. Published scores, memoirs and analytical studies can explicate methods of graphic score performance. But mere explanation of procedure does not address critical issues such as performance aesthetic, techniques for score preparation and strategies for determining a piece's pitch and rhythmic content when no guidance is given. Despite the need for this information, very little has been written that addresses graphic scores from the perspective of the performing musician. And the question remains: how do you play that?

This deficit of information negatively affects both composers and performers of graphic scores. A lack of interpretational understanding and aesthetic contextualisation for works using graphic or meta-representational elements has historically led to composer frustrations, disastrous premiers and negative critical receptions.[1] And in the classroom, research has shown that

[1] Perhaps the most notorious example is the ill-fated 1958 premier of John Cage's *Concert for Piano and Orchestra* (1958). For this performance, an unserious, unprepared orchestra disregarded Cage's notational directions in favour of their own tokenistic expressions of musical modernism and improvisation (Holzaepfel, 1994, p. 208). Other notable examples include Julius Eastman's licentious and composer-disavowed performance of Cage's *Song Books* (1970) (Dohoney, 2014, pp. 45-47) and Morton Feldman's furious reproach of Carol Finer for singing folk songs in a performance of Christian Wolff's *Burdocks* (1971), which, in his estimation, ceased to be a performance of Wolff's music (Hicks & Asplund, 2012, pp. 50-51). Though Eastman and Finer's interpretations were technically accurate,

students unfamiliar with graphic compositional concepts were more likely to avoid graphically notated works (Sullivan & Cantwell, 1999, 252-254). Sadly, though compositional practices originating in the graphic score tradition continue to this day, scholarship and pedagogy on how to execute them are not widely available.

There is, however, indication that even modest educational initiatives can help overcome this knowledge deficit. Recent research by Gil, Reybrouck, Tejada and Verschaffel (2015) shows that educational interventions involving meta-representational notations can have a lasting effect on students' ability to correctly interpret symbolic musical images (pp. 85-86). This thesis therefore seeks to uncover knowledge on graphic composition and performance so that composers, performers and educators may have access to information that can aid in the creation and performance of graphic works. To better understand how this research objective is situated in today's musical environment, a brief overview of graphic composition and its historical antecedents is necessary. This historical summary also serves to demonstrate that graphic composition stems from more than a century-long lineage of performance practice and, as such, deserves an in-depth study into its methods of composition, interpretation and performance.

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their negative critical receptions show that even a technically accurate reading of a graphic score must have proper aesthetic contextualisation.

1.3 Short history of graphic composition

The 20th century brought tumultuous changes to concert music in the European art tradition. Departures from tonality, new methods of acoustic sound production, electronic-based composition, graphic notation, performance art theatrics and the reintroduction of improvisation became hallmarks of a new concert repertoire that defied the sonic and performative norms of the previous century. While the tonal experimentations of the Second Viennese School are often cited as the locus for these changes (Forte, 1973, p. ix), other musical developments of the early 20th century had an equally important role in shaping a radical new aesthetic. Often tied to larger art movements, these developments offered new ideas on sound and musical performance that would impact upon the first generation of graphic score composers.

1.3.1 Futurism

Founded in 1909, the Futurists were a multi-disciplinary collective of Italian artists committed to, per founder Filippo Tommaso Marinetti, 'the complete renewal of human sensibility brought about by the great discoveries of science' (Tisdall & Bozzolla, 1996, p. 8). Perhaps nowhere is this credo more manifest than in the works of Futurist painter and musician Luigi Russolo. Embracing the idea that urban noise could function as musical art, Russolo penned the influential manifesto *L'arte dei rumori* (*The Art of Noises*) (1913/1986) and created machines, termed *intonarumori*, that produced

industrial sounds and allowed for microtonal pitch manipulations (Chessa, 2012, p. 139). In doing so, he created a sound palette and theoretical treatise that would be highly influential to the first generation of graphic score composers (Gann, 2010, p. 82). Russolo also developed a new musical notation for his *intonarumori* that consisted of thick lines written on the conventional five-line staff (fig. 1.1) (Tisdall & Bozzolla, 1996, pp. 116-117). Easily incorporated into traditionally notated scores (fig. 1.2), Russolo's notation would serve as a model for composers wishing to devise original means of notating new sounds and sound-making processes (Kojš, 2011, p. 67).

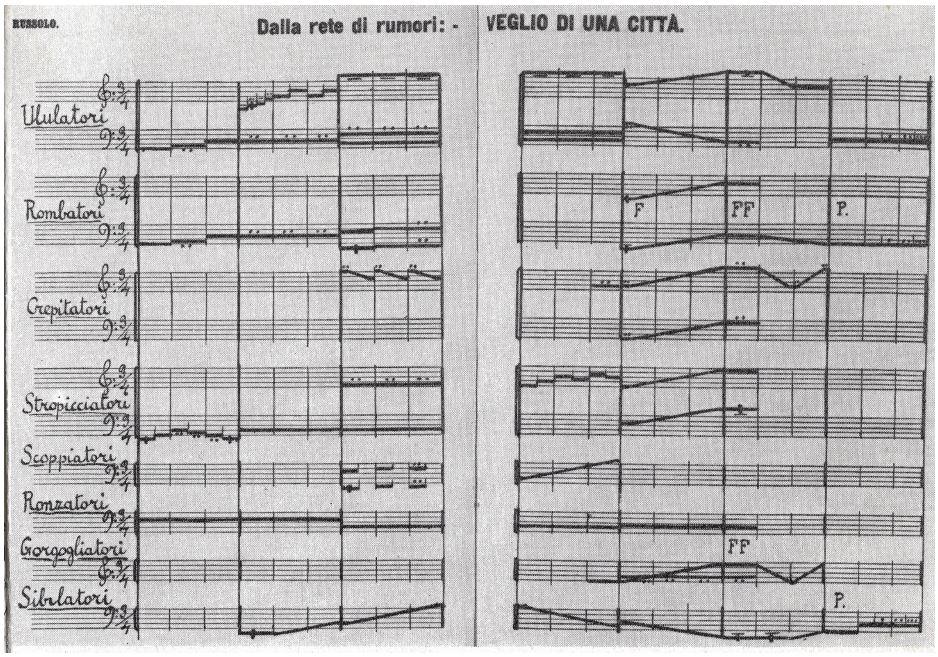

Fig. 1.1 Luigi Russolo, *Veglio di una città*, bars 1-21, (1914)
Reproduced from *Futurism*, Tisdall & Bozzolla (p. 117)

In addition to Russolo, Futurist composer Francesco Balilla Pratella developed compositional and performance techniques that anticipated graphic compositional practice. In his 1914 opera *L'aviatore Dro*, Pratella

required performers to at one point ‘attempt the most acute intonation of his own chosen tone. The intonation will be arbitrary and independent, but the entries will be strictly observed’ (Tisdall & Bozzolla, 1996, p. 119). This aleatory directive was a significant departure from contemporary performance practice and predated, by several decades, similar performance demands of the early graphic composers. Though Pratella may not have been aware of it at the time, this precursor to improvisation-based composition had a contemporary counterpart in the arts movements of Zurich and Berlin.

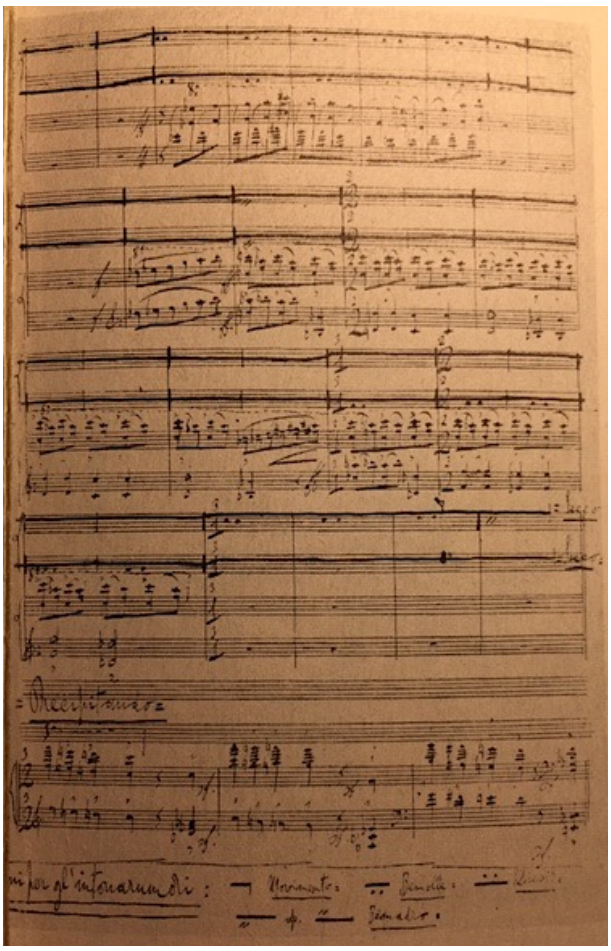

Fig. 1.2 Francesco Pratella, ‘Gioia’ from *L'aviatore Dro* [N.B. bar numbers not included in source], (1914)
Reproduced from *Futurism*, Tisdall & Bozzolla (p. 119)

1.3.2 Dada

Like Futurism, the international Dada movement sought to radically redefine contemporary ideas about art. Forming chapters in Zurich, New York, Paris and Berlin, the Dadaists took inspiration from artist Wassily Kandinsky's call for a 'regeneration of society through the union of all artistic mediums' (Erickson, 1984, p. 3). Dada collectives, like the Futurists, created musical works that defied contemporary conventions of sound and performance. Referred to as 'bruitist' music, Dada performances at the Cabaret Voltaire in Zurich from 1916-1919 regularly featured singing, chanting and speech accompanied by an assortment of bells, cutlery, tin cans, keys and percussive slaps to furniture (Erickson, 1984, p. 70). Other bruitist works such as Jefim Golyshev's *Anti-Symphony* (1919) and the unattributed *L'Amiral cherche une maison a louer* (*The Admiral Seeks a House for Rent*) (1919) were unique to Western arts culture in that they relied heavily upon improvisation and the creative agency of the performer, (Roberts, 2002; pp. 173-174; Erickson, 1984, p. 71). This practice of distributing creativity between composer and performers would later become a signature attribute of graphic composition. Indeed, explicit links to Dadaist performance concepts can be found in the works and writings of graphic score composers John Cage (Cage & Charles, 1981/2000, pp. 164-165) and Barry Guy (2012, par. 1). Though the immediate influence of the Dadaists may have been limited, their artistic explorations would soon reverberate throughout Europe and the United States.

1.3.3 Henry Cowell

Certainly, graphic composition owes a great debt to the music of American composer and pianist Henry Cowell (1897-1965). Cowell's idiosyncratic notations and use of indeterminate musical form would be exceedingly influential upon the first generation of graphic score composers (Holzaepfel, 2002, p. 165; Hobbs, 1997, p. 67). Cowell was influenced himself by Futurism through the works of composers Leo Ornstein and Edgard Varèse (Sachs, 2012, pp. 70-72; Cowell, 1929, p. 287), and he is often credited as a vanguard composer whose musical innovations anticipated many post-war experimental practices. Writing for the 1959 issue of *Darmstädter Beiträge*, John Cage explains thusly:

> 'Henry Cowell was for many years the open sesame for new music in America … His early works for piano … by their tone clusters and use of the piano strings, pointed towards noise and continuum of timbre. Other works of his are indeterminate in ways analogous to those currently in use by [Pierre] Boulez and [Karlheinz] Stockhausen … These actions by Cowell are very close to current experimental compositions which have parts but no scores, and which are therefore not objects but processes providing experience not burdened by psychological intentions on the part of the composer.' (Cage, 1959/2017a, p. 71).

To better understand the significance of Cowell to graphic compositional practice, a selection of his works must be discussed.

Turning first to his creative use of idiosyncratic notations, Cowell's writing for keyboard instruments showed a remarkable display of notational ingenuity. In the solo piano work *Fabric* (1920), Cowell used note heads of varying shapes to delineate asymmetric tuplet divisions (fig. 1.3) (Cowell & Daniel, 1960, pp.

11-13). Likewise, piano works such as *Exultation* (1919) and *Dynamic Motion* (1922) featured his tone cluster notation: thick black lines indicating a range of chromatic notes to be played with the fist or forearm (fig.1.4) (Sachs, 2012, p. 36; Cowell, 1999, p. 3). And though nestled within a standard notational framework, his 1925 solo piano piece *The Banshee* utilised a plethora of original notations and necessitated an explicatory key for performance (fig. 1.5) (Cowell & Daniel, 1960, p. 8).

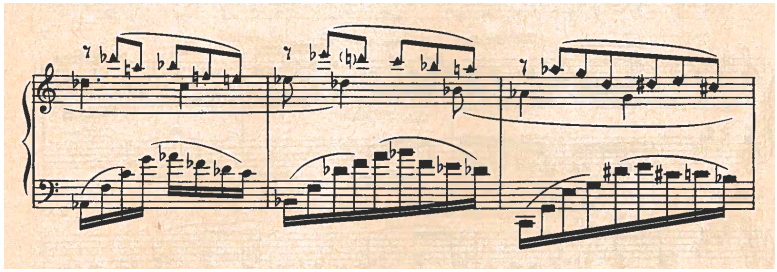

Fig. 1.3 Henry Cowell, *Fabric*, bars 13-15, (1920)

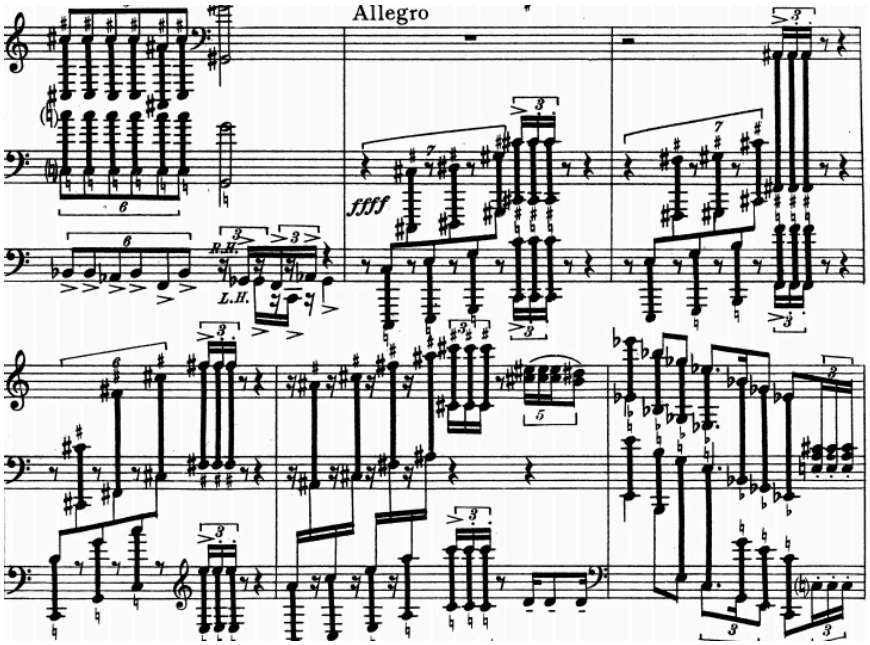

Fig. 1.4 Henry Cowell, *Dynamic Motion*, bars 38-43, (1922)

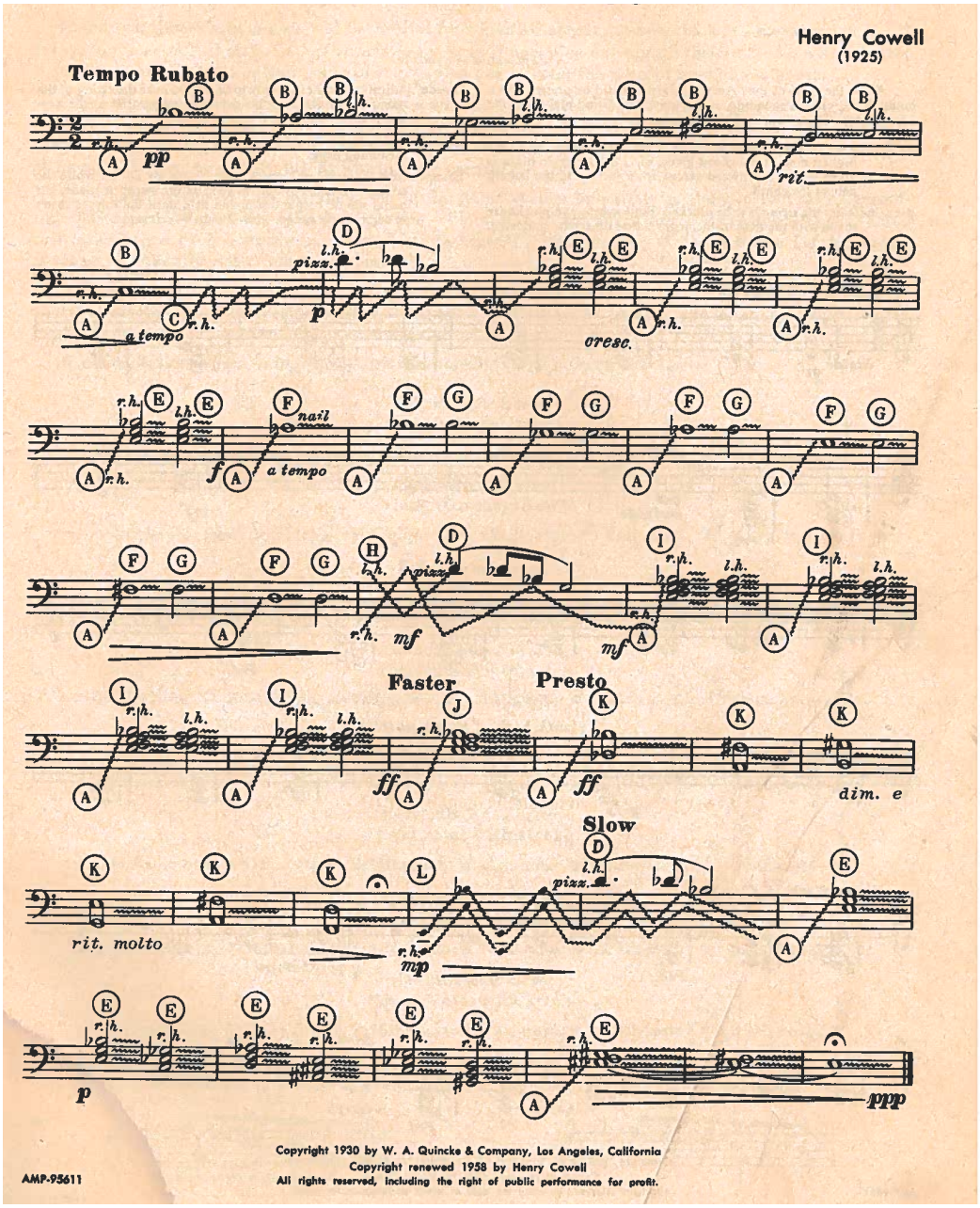

Fig. 1.5 Henry Cowell, *The Banshee*, (1925)

Cowell's compositional innovations were not limited to piano notation. *Ensemble* (1925) featured a conventionally notated string quintet augmented by percussionists improvising on Native American percussion instruments (Sachs, 2012, p. 129-130). For *String Quartet No. 3* (1935) and *26*

Simultaneous Mosaics (1963), performers were instructed to perform pre-composed material in the order of their choosing (Cowell, 1963, p. i; Cowell, 1962, p. i). Lastly, Cowell developed a flexible musical framework for dance that could be adjusted to the needs of the choreographer. Termed 'elastic form' and featured in Martha Graham's dance pieces *Immediate Tragedy* (1937) and *Deep Song* (1937), this compositional structure utilised malleable melodic phrases in which certain tones could be prolonged or shortened by the performers to fit the choreographer's requirements (Sachs, 2012, p. 337).

Cowell's musical innovations had a great impact on the first generation of graphic composers. His use of notations denoting specific performance requirements would become a hallmark of graphic composition. Likewise, Cowell's extended techniques for piano would prove influential to the piano works for graphic composers John Cage and Morton Feldman (Gann, 2010, p. 45; Holzaepfel, 2002, p. 165). But perhaps Cowell's biggest contribution was his use of compositional techniques that granted the performer the creative agency to determine a piece's structural characteristics.

1.3.4 The New York School

Beginning in the 1950's, American composers Earle Brown, John Cage, Morton Feldman and Christian Wolff created revolutionary works that required the performer to determine sonic parameters such as pitch, rhythm, amplitude and timbre. Labelled The New York School, these composers

devised methods of composition that, in the words of John Cage, ‘changed the responsibility of the composer from making to accepting’ (Gann, 2010, p. 115). Influenced by visual artists such as Alexander Calder and Jackson Pollock, the New York School created individualistic and unconventional notational systems to represent their equally unique compositional frameworks (Cox, 2004/2019, p. 263; Brown, 1999/2004, p. 189). Though semantic distinctions often overlap, these works have been referred to as graphic scores (due to the visual appearance of score notation), chance music (due to compositional techniques and performance methods in which one selects from a limited number of possibilities), and indeterminate music (due to the presence of compositional parameters that have not been set by the composer) (Griffiths, 2001, par. 3-4, 6, 10, 15). Furthermore, these scores were often non-specific as to pitch and rhythmic content and required the performer to possess substantial technical and creative abilities (Lewis, 2002, pp. 97-98). As the New York School’s use of idiosyncratic notation would inspire composers for generations to come, it is necessary to discuss some of the most seminal pieces from this early period.

Referring to his friend Morton Feldman, poet Frank O’Hara said, ‘Where a virtuoso piece places technical demands upon the performer, a Feldman piece seeks to engage his improvisatory collaboration, with its call on musical creativity as well as interpretive understanding’ (O’Hara, 1959/2000, p. 213). Though Feldman’s compositional output would later shift away from

indeterminacy (Johnson, 2001, par. 9), his early graphic compositions certainly enabled creative contributions from the performer. Beginning with *Projections I-V* (1950-1951), Feldman created a series of graphic compositions in which the composer designates pitch register (high, middle or low), rhythmic durations and amplitude. Specific pitches, however, are left indeterminate and thus chosen by the performer (fig. 1.6) (Feldman, 1962/2000, p. 6). In 1951, Feldman expanded upon the *Projections* series' compositional indeterminacies in his pieces *Intersection I* and *Marginal Intersection*. In these orchestral works, dynamics and entrances were also left to the discretion of the performer, so long as entrances took place within a predetermined and stable rhythmic unit (Feldman, 1962/2000, p. 6). Both the *Projections* and *Intersection* series were indicative of how Feldman used graphic notation to represent the distribution of creative agency between the composer and performer. They constituted a significant first step in graphic composition that would influence both his peers and future generations of composers.

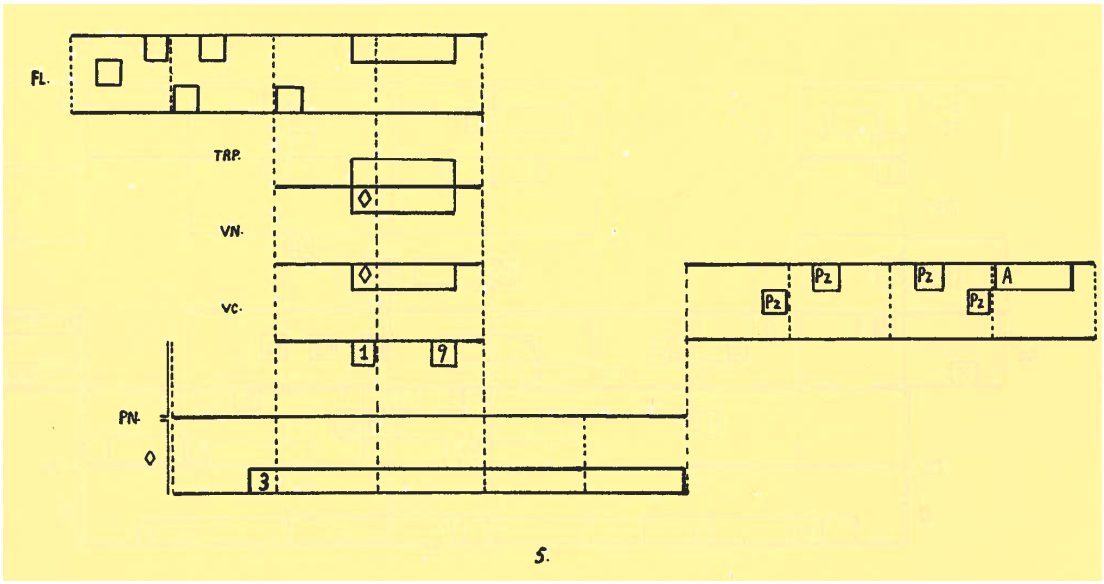

Fig. 1.6 Morton Feldman, *Projection 2*, p. 5, (1951)

Continuing chronologically with the New York School, from 1952-1954 Earle Brown produced *Folio and 4 Systems* (1954), a collection of works that included the seminal graphic pieces *November 1952* (1952), *December 1952* (1952) and *4 Systems* (1954) (fig. 1.7). With these graphic works, Brown endeavoured to stimulate the performer's creativity by having the performer determine virtually all sonic parameters of performance (Alden, 2007, p. 316). Through this process, Brown sought to create a new relationship between composer and performer by fostering, in his words, 'a truly collaborative, creative synergy' (Brown, 1999/2004, p. 190). The compositions within *Folio* would have a tremendous effect on his contemporaries, many of who were already in the process of radically rethinking traditional means of composition and performance.

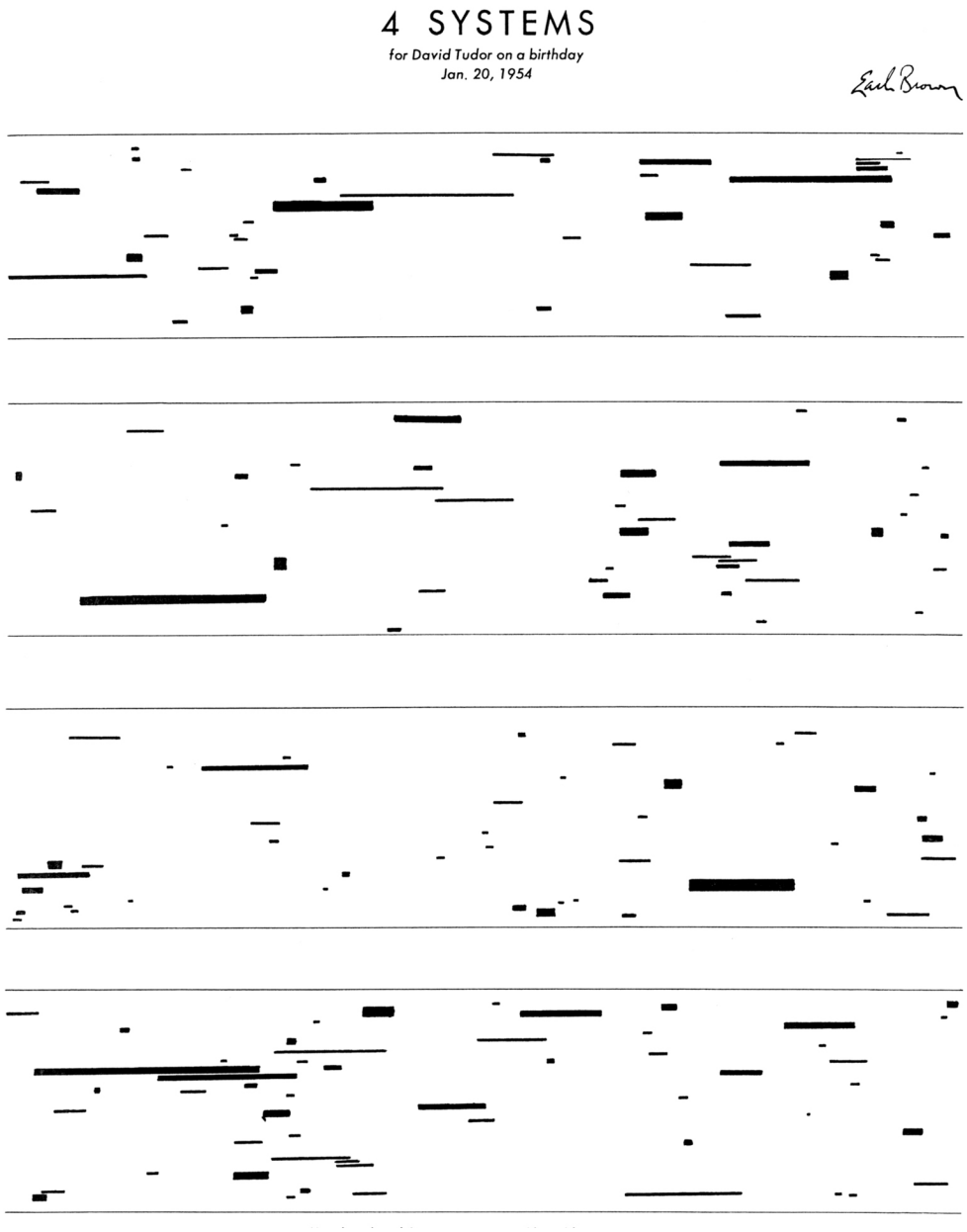

Fig. 1.7 Earle Brown, *Four Systems,* (1954)

John Cage, perhaps the most well-known of the New York School, also sought to redefine conventions of composition and performer engagement. After experimenting with chance compositional techniques such as using a roll of the dice to generate a work's structural components, Cage began creating graphic works that called upon the performer to determine the

totality of a piece's aural attributes (Cage & Charles, 1981/2000, p. 59). Early graphic works such as *Concert for Piano and Orchestra* (1958) and *Variations I-IV* (1958-1963) specified for the performer to plot trajectories that determined pitch, amplitude, timbre, duration, rhythmic entrance and compositional structure (fig. 1.8) (Cage, 1960b; Cage, 1960c). Though offering ample creative agency to the performer, these works nonetheless required a great degree specificity in preparation and performance. For that reason, they are considered extensions of his chance-based compositional techniques rather than guided improvisations (DeLio, 1984, pp. 12-15). Cage would become one of the most influential and individualistic composers of the post-war era. His compositions would inspire the next wave of composers to creatively introduce new means of using graphic notation.

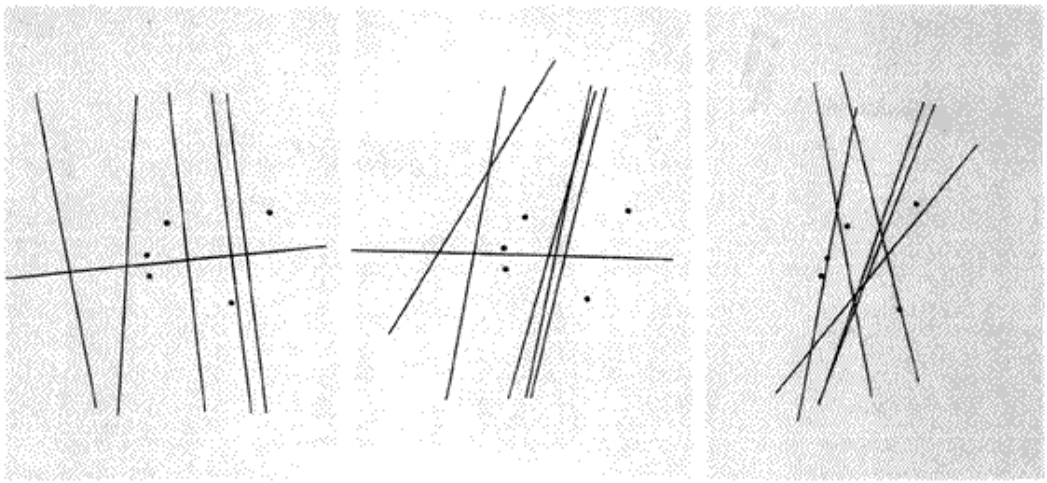

Fig. 1.8 John Cage: *Variations I* (three possible realisations) (1958)
Reproduced from http://www.laboratoiredugeste.com/spip.php?article462

1.3.5 Influence of the New York School

The influence of the New York School quickly spread. Composers in the European concert tradition such as Pierre Boulez, Krzysztof Penderecki and Karlheinz Stockhausen started integrating graphic notation and aleatory processes into traditionally notated works (fig. 1.9) (Boulez, 1985, pp. 155-156; Wörner, 1973, p. 34; Penderecki, 1972). In this way, they introduced limited elements of improvisation, sonic unpredictability and performer agency into controlled, stable and replicable compositional frameworks (Stone, 1980, pp. xv-xvi). Other composers including Cornelius Cardew, Anestis Logothetis and Roman Haubenstock-Ramati were less prescriptive. They created visually striking scores that engaged the creative contributions of the performer, resulting in remarkably diverse realisations (fig. 1.10) (Evarts, 1968, pp. 406-407, 410). Additionally, artists such as Anthony Braxton and Wadada Leo Smith combined graphic notation with performance practices derived from African American jazz traditions to create vibrant and original approaches to composition and performance (fig. 1.11) (Steckler, 2013, pp. 83-84; Lock, 1988, pp. 121, 223, 261). In these ways, the graphic score tradition grew into a multifaceted and diverse method of composing music.

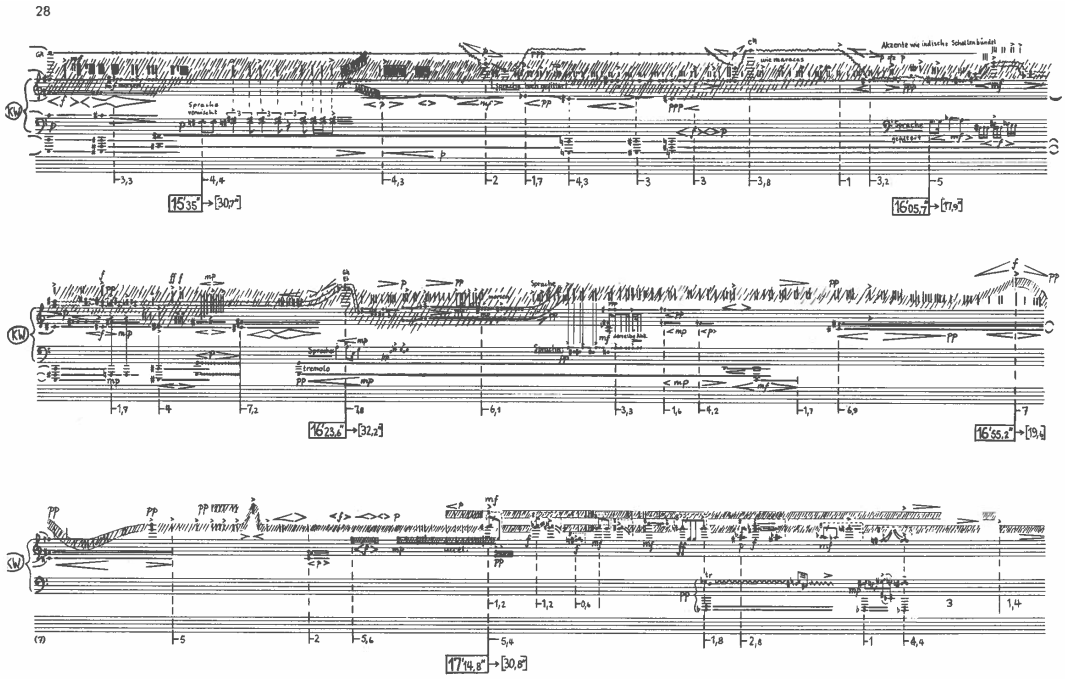

Fig. 1.9 Karlheinz Stockhausen, *Hymnen,* p. 28, (1969)

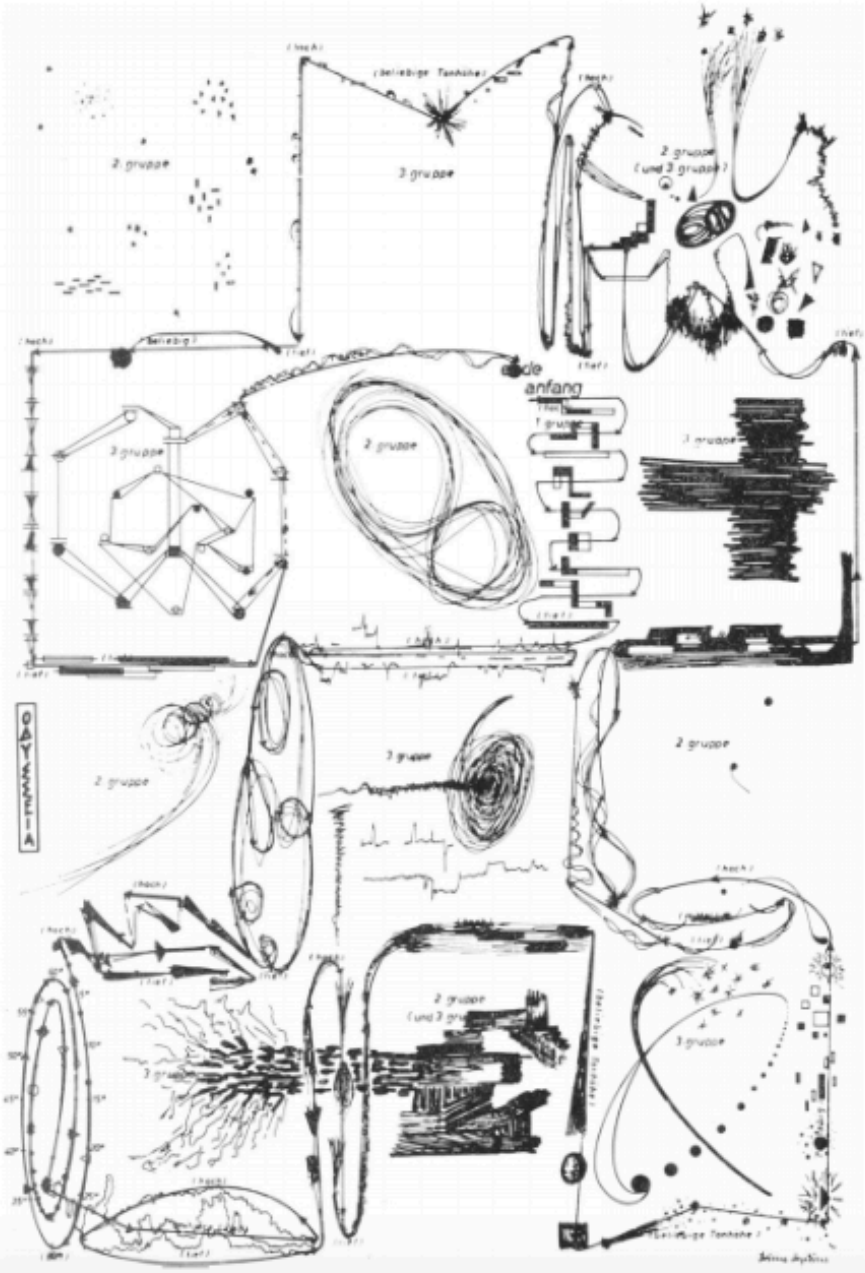

Fig. 1.10 Anestis Logothetis, *Odysee,* (1963)
Reproduced from 'Towards a decodification of the graphical scores of Anestis Logothetis (1921-1994). The graphical space of *Odysee (1963)'*, Maria-Dimitra & Anastasia (p. 6)

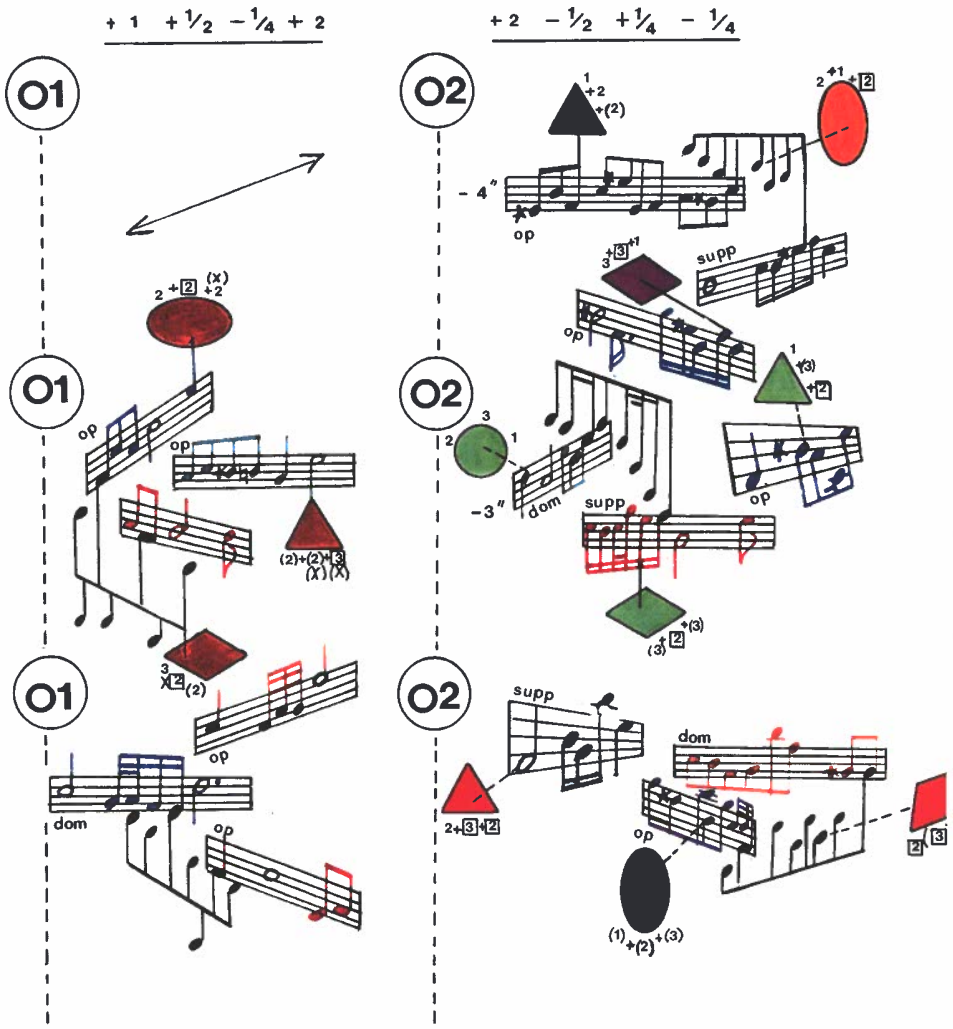

Fig. 1.11 Anthony Braxton, *Composition No. 76, for three musicians,* excerpt (1977)

1.3.6 Graphic composition today

Today the practice of graphic composition is very much alive in the works of composers such as Anthony Braxton, Barry Guy, Anita Hustas, Lisa Mezzacappa, LaDonna Smith, Kathleen StJohn, David Young and countless others. Whilst this has resulted in a dynamic and creative environment, the heterogeneity of compositional styles can perplex and confuse even experienced professionals (Stone, 1980, p. xvii). It is the purpose of my

research to address that issue. Concluding this short historical overview of graphic composition, we now turn to the research objectives guiding this study.

1.4 Research objectives

This research seeks to better understand graphic composition as a practice and apply the findings of this study directly to the composition and performance of new graphic works. It uses person-to-person interviews to discover how musicians who are professionally acknowledged as exemplary performers of new music have composed and interpreted graphic scores. Due to the heterogeneity of graphic notational systems, this study does not attempt to formulate a global theory on graphic interpretation, nor does it try or aggregate findings into a 'how to' method for composers to create graphic works. Rather, it endeavours to increase understanding by examining the stories and experiences of those practicing graphic composition today and demonstrate how this data can be used during composition and performance.

The focus of this study is on the performance and compositional methods of double bassists. The reason for this delimitation is that I am a double bassist. To this end, I am familiar with much of the graphic repertoire written for and commonly adapted to double bass. I am also familiar with standard and advanced performance techniques of the double bass, as well as traditional repertoire, pedagogies and performance issues of the instrument. As a

researcher, I can draw upon this understanding to ably comprehend the data and thoughtfully interrogate the statements of the research participants.

This study will investigate how data on graphic score composition and performance can be put into practice. To accomplish this, I will examine the relationships between graphic notation and performance, explore how a composer may use improvisation as compositional component of a graphic score, and look at how to effectively communicate compositional directives to the performer. In doing so, this research will endeavour to answer the following questions.

Question 1: What strategies do participants use for interpreting graphics in music? This research objective seeks to discover research participants' strategies for performing graphic works or notations. This includes methods of determining pitch, register, timbre, amplitude, rhythm, aesthetic character or performative approach. These strategies may be for specific compositions or represent a generalisation of the participants' experiences. Adjacent to this question are queries into how the participants' background and training enabled them to ably formulate and execute an interpretive strategy and how one evaluates the success of a performance.

Question 2: What is the role, if any, of improvisation in a graphic score? This research question has two objectives. The first concerns determining if

participants use improvisation as either composers or performers of graphic scores. If so, is this constant, or is a non-improvisatory approach best suited to specific graphic compositions? Moreover, can a non-improviser perform a graphic score? The second objective, assuming improvisation is used, examines how improvisation functions in graphic composition. This examines participants' views on how they have used improvisation as either as a compositional component or method of performance.

Question 3: What is the role of communication in performance? This research objective investigates how communication functions in the preparation, rehearsal and performance of a graphic score. Moreover, it seeks to discover how a composer can best impart their compositional objectives to the performing musicians. This study looks at transmission methods of communication such as musical notation, para-notations, written communication, speech, and gesture. This research also looks at interpersonal communication, including interactions between composer and performer and intergroup communication. It examines the relationship between the communicating parties, considering extra-musical aspects such as power imbalances, length of relationship and emotional connections.

Question 4: How do these findings inform my creative output? This research objective seeks to understand how data gathered from the interviews can be put forth into practice. Using my own creative practice as a case study, this

thesis explores how analytical findings influenced structural components of original graphic compositions as well as methods of performance for these and canonical works. Moreover, it seeks to show how an understanding of graphic compositional practice can be put forth into new creative frameworks for composition and performance.

1.5 Research methodology

This research uses a qualitative analytical methodology. Qualitative analysis is best suited for the above research objectives for several reasons: it facilitates an understanding of how people comprehend concepts and actions; it considers environment, context and process; and it allows the use of pre-existing information and records during data analysis (Barbour, 2006, pp. 12-16). This is crucial to my research, because it examines the experiences of the research participants in conjunction with a historically oriented understanding of significant graphic compositions, recordings and performance practices.

As this study builds local knowledge of how the participants perceive their experiences with graphic composition, it uses interpretive phenomenological analysis (IPA) as an analytical framework. Originating in qualitative psychology, IPA is an appropriate vehicle for a study of the subjective and offers many advantages to the researcher working with qualitative data. It uses interview methods meant to minimise the influence of the researcher

and has a perceptual emphasis on personal life experience and individual interpretation (Smith & Osborn, 2015, pp. 25, 35-36). As such, the methodology is suited to the research aims of this study. Nonetheless, this is not a strict phenomenological study. It is a multidisciplinary study that incorporates musical analysis, music history, thematic analysis and a reflexive examination of my own compositional process. For that reason, it does not follow the strict guidelines for an IPA study in psychology as outlined by Smith, Flowers and Larkins (2009). IPA is, however, an advantageous lens through which to examine and analyse the data.

1.6 Evidence-based composition

This study's findings inform the creation of seven original graphic compositions. These compositions show the diversity of graphic compositional practice as evidenced by the data and link significant compositional features of the creative output to analytical findings. For these reasons, the creative output of this thesis can be considered evidence-based composition, as the compositions themselves embody the findings of this study. Thus, my research engages creatively with the compositional process to fully grasp the significance, challenges and artistry of graphic scores.

Chapter 2 Literature Review

2.1 Overview

Before discussing the analytical findings of this thesis, it is necessary to understand how its research objectives are situated within current academic literature. As such, this review examines literature on graphic composition and post-war experimental double bassists. It also supports the selection of this study's analytical framework by reviewing literature on methodologies frequently used in qualitative analysis. In doing so, this literature review positions the thesis within the field of current research and demonstrates that its analytical methodology is appropriate to the research objectives.

2.2 Graphic composition

> 'The more choices [the composer] offered, the more it was necessary to write it out … When you have twenty-four different pitches you can choose from and it doesn't matter to him [the composer] what they are – the point is, it makes a difference to you. It's a possibility that he [the composer] didn't think of, that it would make a difference to the performer.' (Hicks & Asplund, 2012, p. 25)

The above quote from pianist David Tudor describes why he felt he needed to prepare and write out his ideas for a performance of Christian Wolff's aleatory work *Duo for Pianists 1* (1957). From Wolff's standpoint, pitches selected by the performer are secondary to the processes that generate them (Hicks & Asplund, 2012, p. 25). However, as Tudor expresses, what is performed does matter. It is not only the performer's creative expression, but

what the listener hears, feels and remembers. But what has been written of graphic score performance, and how do these methods of performance relate to the composition process itself? This section reviews literature on graphic scores, looking specifically for writings that explicate methods of performance.

2.2.1 Methods for selecting literature

To search for literature on graphic composition, I used *Répertoire International de Littérature Musicale* (*RILM*) and the University of Edinburgh's library search engine, using the search term 'graphic score'. I also searched the New York Public Library's Dorothy and Lewis B. Cullman Performing Arts Center for literature on Earle Brown, John Cage, Morton Feldman and Christian Wolff. As someone who is only fluent in the English language, my search for literature on graphic scores (and in the following literature reviews on experimental double bassists and qualitative methodologies) was limited to English language publications. I recognise that significant contributions to scholarship in each area of this review exist outside of the English language and acknowledge my linguistic limitation in my discussion of relevant literature.

2.2.2 The composer's voice

This review begins by investigating what graphic composers have said about the interpretation and performance of their own compositions. In the writings

collected as *Give My Regards to Eighth Street* (2000), Morton Feldman only briefly addresses his graphic works, offering the reader a few short descriptions resembling program notes. Likewise, published lectures of John Cage offer little practical insight into the performance of his works and seem intended to inspire rather than instruct (Cage, 1961/2017b; Cage, 1973b/2004b; Cage & Charles, 1981/2000). Cage is more forthcoming when discussing other composers. In a 1958 lecture, Cage discusses works by Karlheinz Stockhausen, Morton Feldman, Earle Brown and Christian Wolff, and relates how each piece's structures and methods of performance are either determinate (set by the composer) or indeterminate (set by the performer) (Cage, 1973/2004a). Nevertheless, strategies for realising these indeterminacies are not provided.

Earle Brown's writings are significant in that they do discuss methods of interpretation. In his 1970 lecture 'On *December 1952*' (2008), Brown explains how David Tudor interpreted graphics for the premier performance of *December 1952*. Brown also discusses performance theory in his essay 'Transformations and Developments of a Radical Aesthetic' (1999/2004), providing critical analysis alongside excerpts of his own scores.

In recent years, composers working with graphic notations have discussed the particularities of their art. Barry Guy (2012) has written on the experiences that led him to use graphic notation, providing score excerpts

and explanations of notations and method of performance. Composer Juraj Kojš (2011) has written about graphics representing specific performer actions. In his study, Kojš provides score excerpts from himself and others, explanations of the representations, and descriptions of how to produce the sounds notated. And discussing his 'game pieces', John Zorn (2019) briefly describes each composition and stresses the importance of oral communication and interpersonal relationships.

The writings discussed in this section provide valuable and fascinating insights into the lives and works of some of modern music's foremost composers. However, they offer but an introduction into the intricacies of graphic compositional practice. For this reason, it is important to seek studies that provide in-depth scholarly explorations of graphic composition and performance.

2.2.3 Performance studies

While early writings on graphic scores functioned largely to inform the public of the phenomenon (Evarts, 1968) or to announce an artist or upcoming event (East, 1974), more recent scholarship has elucidated the performance processes of canonical works. As the research objectives of this thesis are directly concerned with methods of graphic score performance and interpretation, it is imperative to thoroughly explore literature addressing

these subjects. As such, many of the following studies are discussed separately rather than systematically.

Thomas DeLio's *Circumscribing the Open Universe* (1984) explains methods of performance for works by John Cage, Morton Feldman, Christian Wolff, Robert Ashley and Alvin Lucier. DeLio's book is unique in that it combines biographical information of the composer, historical context of each composition, score excerpts, contemporary peer assessments of graphic works, and his own description of performance method. In doing so, DeLio clearly presents methods of performance, though he does not indicate strategies for selecting specific pitch, rhythmic and timbral content.

John Holzaepfel (2002) gives a detailed account of pianist David Tudor's preparations for Feldman's *Intersections II* and *III* (1951). Holzaepfel provides score excerpts and several illustrations of Tudor's notes and transcriptions (Tudor rewrote Feldman's *Intersections* in a standard notation and used that score for performances). Furthermore, he discusses how Tudor met technical challenges of the music, his application of extended techniques, and his interpretation of rhythmic entrances in relationship to the pieces' stated pulse.

Martin Iddon's *John Cage and David Tudor: Correspondence on Interpretation and Performance* (2013) is a collection of personal correspondences interspersed with chapters detailing the preparations that

Tudor undertook to perform Cage's music. Beginning with *Music of Changes* (1952) and moving chronologically through *Five Stone Wind* (1988), Iddon provides extraordinarily detailed accounts and analyses of Tudor's preparations for Cage's determinate and indeterminate works. Within these accounts, Iddon provides specific information on how Tudor approached time scale, rhythmic interpretation and, occasionally, pitch selection.

More recently, performers have taken an active role in explicating methods of graphic interpretation and performance. Pianist Zubin Kanga (2014) has documented his preparation of David Young's graphic score *Not Music Yet* (2012). In addition to discussing the significance of interpersonal interactions between himself and the composer, Kanga reveals what the images within the score represented to him, how he applied that iconology to the piano, and a critical evaluation of the performance from himself and the composer. Likewise, guitarist and composer Juan Parra Cancino (2009) details his preparations for a simultaneous performance of Cage's *Fontana Mix* (1958) and *Aria* (1958). In doing so, Cancino discusses how Cage's own performances influenced his preparations, electronic instrument design and algorithm development, and how issues that arose during rehearsal led to a re-structuring of his performance strategy.

Recent years have also seen a growing body of research into 'action-based music', that is to say, scores in which graphic notations represent specific

physical actions applied towards an instrument (Kojš, 2011, p. 65). In her study of Helmut Lachenmann's solo cello work *Pression* (1972), cellist Tanja Orning (2013) compares published editions of *Pression* and discusses her own performance practice. Likewise, composer Miguelángel Clerc (2013) examines how Lachenmann's notations translate into timbral possibilities and places Lachenmann's use of action-based music into a wider field of modern composition and performance (pp. 113-114). Musicologist William Brooks (2009), in his study of how concepts of sound and noise inform John Cage's compositional methods, discusses Cage's use of notation in works such as *First Construction in Metal (In Metal)* (1939) and *59 ½" for a String Player* (1953). Per Brooks, Cage's use of notation resembles 'tablature', as the notations indicate physical actions rather than sound (pp. 74, 76, 82-83). And lastly, composer Gregorio Garcia Karman (2013) notes the importance of action-based notation in electronic music. Citing pieces such as Stockhausen's *Mikrophonie 1, No. 15* (1964) and *Mixture, No. 16* (1964), Karman discusses how graphic notations indicate the actions that operators of electronic devices must undertake during performance (p. 146). The diversity of these writings suggests that the study of action-based notations is a field with broad research applications. However, it is Orning's study that, by combining score and performance analysis with qualitative data derived from an interview with Lachenmann, gives a detailed and nuanced look into graphic performance.

Moving to graphic works whose notational meanings have not been codified by the composer, musicologist Virginia Anderson (2013) provides an overview of performing graphic scores. Anderson outlines three components necessary for graphic score performance: score study; understanding the difference between what the score specifies to the performer and what it only suggests; and understanding how the performer may creatively contribute during performance (p. 137). Additionally, Anderson looks at late experimentalism in Britain and her experiences as a teacher to illustrate how cultural influences can impact upon interpretation (pp. 138-139). Written to encourage participation in graphic score performance, this essay serves largely as an introduction to graphic score concepts and thus lacks extensive details into performance methods.

Scholarly discourse on graphic scores need not concern itself exclusively with methods of performance. From the ever-evolving field of music technology, Vickery, Hope and James (2005) document the creation of software that renders Cage's *Variations I-III* into standard notation. And Alden (2007) evaluates notational and performance similarities between mediaeval notation and the works of Earle Brown, citing probable early-music influences on the composer.

The above literature provides valuable scholarship on graphic score performance. Returning to Iddon, Tudor's methods of score interpretation are

clearly explained and chronicled. But as graphic scores employ a multitude of compositional and performative frameworks, Tudor's methods for determining specific aural characteristics cannot be universally applied. Kanga and DeLio discuss graphics that indicate a pitch register, but neither explain how a performer would select tones from within the ranges of their instrument. And while Holzaepfel provides Tudor's 'transcription' of Feldman's score, there is no mention of how this specific transcription was realised. As there is still much that remains unknown, it will be helpful to look at performance practices associated with performer-generated material.

2.2.4 Improvisation

Musicologist John Evarts (1968), in an early critical writing on graphic composition, states that the graphic score performer must be an improviser (p. 412). Indeed, Earle Brown (2008) has described his graphic works as improvisational, saying that when *December 1952* is played by more than one person it is a 'collective improvisation' (p. 7). However, Brown is unique amongst early graphic composers in endorsing improvisational practices for score interpretation. Cage's correspondences with Tudor reveal that neither he nor Cage endorsed improvisation as a method for graphic score performance (Iddon, 2013, p. 84). And in conversation with Daniel Charles, Cage is dismissive of the conversational and interactional aspects of jazz improvisation. Discussing his work with the Art Ensemble of Chicago, Cage states that:

> ‘I advised them [The Art Ensemble of Chicago] not to listen to each other, and asked each one of them to play as a soloist, as if he were the only one in the world. And I warned them in particular, “If you hear someone starting to play loud, don’t feel that this obliges you to play louder yourself.” I repeated to them that they should be independent, no matter what happens … Unfortunately … they started taking up their old habits of conversing and answering again.’ (Cage & Charles, 1981/2000, pp. 171-172)

Other composers have similarly dismissed, or at least downplayed, the role of improvisation in their graphic works. Feldman, describing his graph pieces, states that ‘I had never thought of the graph as an art of improvisation, but more as a totally abstract musical adventure’ (Feldman, 1962/2000, p. 6). And Karlheinz Stockhausen, in a 1959 Darmstadt lecture, uses the term *aktionsschrift* to describe graphic notation (Gutkin, 2012, p. 274). In this view of graphic notation, the emphasis is not on improvisation or even sound. Rather, graphics serve as a script that delegates potential actions to the performer (Gutkin, 2012, p. 274). Nevertheless, subsequent generations of composers, including Anthony Braxton, Barry Guy and John Zorn, have unreservedly espoused the use of improvisation in graphic works (Cox, 2004/2019, p. 265; Zorn, 2004/2019, p. 278; Guy, 2012, par. 3). Confronted with this generational divide, it is necessary to investigate possible reasons why the early graphic composers did not typically (or at least openly) embrace improvisation.

In his essay ‘Improvised Music After 1950: Afrological and Eurological Perspectives’ (2002), George Lewis states that racist cultural gatekeepers

projected their belief in the superiority of European culture by denying the influence of African American improvisational practices on graphic score performance (pp. 99-100). Lewis concurs with statements by composer Anthony Braxton maintaining that early graphic composers used terms such as ‘indeterminism’ and ‘aleatory’ as a means of avoiding the word improvisation and its association with Black music (Lewis, 2002, pp. 99). Similarly, composer John Zorn states that the early graphic composers substituted the word ‘improvisation’ with ‘aleatoric’, ‘intuitive’, and ‘indeterminate’ so that they would be taken seriously by the critical establishment (Zorn, 2019, pp. 276-277). In addition to these claims of nominal misdirection, cultural theorist Christoph Cox and musicologist David Borgo each maintain that jazz improvisation was a conceptual (though certainly not stylistic) influence on the early graphic scores of the New York School (Cox, 2004/2019, p. 265; Borgo, 2002, p. 166). With this information, would it then be reasonable to surmise that improvisation has been a crucial component of graphic score performance since its inception?

2.2.5 David Tudor

Pianist David Tudor is best remembered as a prominent New York School collaborator who premiered seminal graphic works by Brown, Cage, Feldman and Wolff. Moreover, it is well documented that his method of interpreting and performing graphic scores was not through improvisation (Iddon, 2013, p. 84; Hicks & Asplund, 2012, p. 25; Holzaepfel, 2002, pp. 163, 169). Even

when asked to improvise, Tudor preferred to work out his ideas prior to performance. Though Earle Brown wished for his graphic piece *December 1952* to be performed in an extemporaneous, improvisational manner, Brown states that Tudor's method of performance 'was not at all improvisation. He used a ruler and calipers and various things in order to find exactly, vertically, what pitches were involved and their durations' (Brown, 2008, p. 8). While many contemporary composers unequivocally cite the importance of improvisation in graphic score performance, the 'Tudor approach' of working ideas out prior to performance and perhaps rendering all or parts of a graphic score in traditional notation is still practiced today. Such is the case with pianist Zubin Kanga 's (2014) study of the preparations he undertook for David Young's graphic piece, *Not Music Yet* (2012).

This review thus establishes two approaches to graphic interpretation: the improvisational approach and the 'Tudor approach' of working out ideas before a performance. The improvisational approach is predominantly linked to later generations of graphic composers, whilst the Tudor approach is aligned with the early graphic composers, many of whom collaborated with Tudor directly.[2] Or is this assessment truly accurate? Because there is more

[2] In addition to the New York School, Tudor collaborated with some of the foremost composers of the post-war era. Not only did he give the first recording of Stockhausen's indeterminate masterwork *Klavierstück XI* (1956), Tudor premiered graphic scores of considerable stature and influence, including Sylvano Bussotti's *Five Piano Pieces for David Tudor* (1959) and Maricio Kagel's *Transición II für Klavier, Schlagzeug und 2 Tonbänder* (1959) (Gutkin, 2012, p. 262).

scholarly research on the works of Cage and Feldman, does that mean that Tudor's performance methods seem more common as to how early graphic scores were interpreted than they truly are?

These open questions show that graphic score performance is an area of scholarship in which procedure, preparation, use of improvisation, and historiography have yet to be thoroughly explored. The volume of recent scholarly publications devoted to these subjects indicates that this is a growing field of research. That being so, it is important to consider what methods of musical analysis could be used for studies of graphic composition.

2.2.6 Analysis

Unlike traditional Western concert music, there are no standardised theoretical frameworks in which to analyse graphic score performance. Nor is lack of standardisation the only problematic issue. Borgo (2002) has written on the difficulties of assessing experimental performance, particularly performances utilising improvisation. Stating that improvisation 'often defies the standard musicological tools of the trade and accepted conservatory methods for evaluating competency and aesthetic value' (p. 168), Borgo suggests that different criteria are needed for critical evaluation. As these criteria will likely be subjective, it is important to carefully consider the situation, active participants, history and context of the performance (p. 168).

Perhaps Lewis (2002) gives the most concise guidance in this matter: ‘My own view is that in analysing improvisational musical activity or behaviour in structural terms, questions relating to how, when, and why are critical’ (p. 117). Though difficulties will surely present themselves in the process of graphic score assessment, a look at new theoretical approaches reveals the range of possible analytical methods.

Vigil (2009) has constructed an analytical framework for determining form within Feldman’s graphic works, which he applies to Feldman’s *Projection 4* (1951). Vigil’s criteria for determining form are well reasoned and could be applied to other works, be it a score or an improvised performance. His approach becomes problematic when he asserts that, ‘graphic notation effectively eliminates the possibility of conceiving of a group of pitches at one point in the piece creating a meaningful structural connection with a similar group of pitches elsewhere’ (p. 258). While this may be the composer’s intention, it is a mistake to remove the human element of intentional pitch selection and ignore how this can influence the analytical determination of formal structures.

Influenced by the study of linguistics and the development of written communication, Wadle (2010) develops a system for graphic score analysis and interpretation that can be used in the absence of composer instruction. After relaying how to assess and analyse the component parts of a graphic

notation, he asserts that this system is sufficient for performing most graphic works and applies it to Cage's *Variations I*. It should be noted that he uses a non-improvisational 'Tudor approach'. Though unorthodox, Wadle's approach is a soundly reasoned and welcomed addition to the study of graphic score interpretation.

But perhaps traditional musicological analysis, with music rendered to an objectified form and presented as the sole topic of study, is inadequate for graphic composition. Kanga's (2014) qualitative documentation of his musical background, relationship with the composer, practice methods, and charts made for performance offers an intriguing model for graphic score analysis. This analytical method is valuable in that it considers environmental and sociological factors as well as musical analysis. This evaluative framework thus provides a beneficial template for the study of graphic interpretation within an interpersonal context.

This review of graphic composition has examined composer-penned texts, performance studies, scholarly accounts of improvised and non-improvised performance strategies, and methods of graphic score analysis. In doing so, it has made clear that graphic composition encompasses a multitude of compositional frameworks, performance methods and strategies for realisation. This review has also demonstrated that a single graphic score may be interpreted through vastly different performance strategies. For

example, though Brown originally conceived *December 1952* as an improvisational piece, it has both an improvised and non-improvised performance history (Brown, 2008, p. 8). How then should this study focus its research aims? As discussed in Chapter 1, this study seeks to understand how esteemed practitioners have composed, interpreted and performed graphic scores. For that reason, this study will be guided by the experiences of the research participants rather than a typology of score or performance method. As this research investigates how double bassists have approached graphic scores, it is beneficial to assess literature on bassists who have contributed to the 20th century avant-garde.

2.3 Double bassists

This review examines literature on double bassists who have made significant contributions to experimental composition and performance. The focus of this review is not on biographical information. Rather, it examines scholarly literature that documents avant-garde double bassists' unique contributions to their art form. Bassists selected as the subjects for this review are those who have developed new musical concepts through composition, playing techniques and expanding the bassist's role within an ensemble. As these criteria are also applicable to historical figures whose revolutionary contributions have since become standardised, it is necessary to state the parameters for selection.

2.3.1 Methods for selecting literature

To keep this review of bassists concurrent with the development and promulgation of graphic composition, I limited my search to bassists who rose to prominence after 1950. An exception was made for Charles Mingus, whose early-career composition *Mingus Fingers* (1947) distinguished him as a revolutionary composer and technical virtuoso (Taylor, 2002, p. 115). I then narrowed the parameters to bassists characterised as 'experimental'. *Grove Music Online* defines experimental music as 'a diverse set of musical practices that gained momentum in the middle of the 20th century, characterized by its radical opposition to and questioning of institutionalized modes of composition, performance, and aesthetics' (Sun, 2012, par. 1,). Following that definition as well as my own knowledge of the double bass tradition, I consulted archives and anthologies of double bass and experimental music to compile a list of bassists. These sources were: *Online Journal of Bass Research* (ojbr.com, 2019), International Society of Double Bassists' magazine and newsletter archives (isbworldoffice.com, 2019); *The Jazz Bass Book* (Goldsby, 2002); John Zorn's *Arcana* series (Zorn, 2000) and *The Contemporary Contrabass* (Turetzky, 1974). I then searched for literature on each bassist within *RILM* and *Oxford Music Online*.

2.3.2 Historical literature (jazz)

Jazz historical writings provide a wealth of information on the contributions of 20th century double bassists. Thus, my review begins with the pioneering

avant-garde bassist Charles Mingus. Taylor (2002) uses biography, review of pedagogical training, musical transcription, and the historical and sociological significance of the music examined to demonstrate how Mingus increased the potential for group interaction in jazz performance. Dunkel (2011) and Saul (2001) also emphasise the historical and sociological context for Mingus' creative output, with Saul drawing many correlations between Mingus' music and the African American struggle for racial equality. Both Saul and Dunkel give detailed explanations of Mingus' mid-1950's compositional and performative methods, using audio recordings, existing scholarship and archival information as their sources.

In addition to recordings and historical documents, jazz historiography has used interviews to provide historical record and qualitative assessment. Using this research method, even brief comments from interview participants can become a valuable source of information. Bany (1988) interviews local musicians in Chicago to gain critical understanding into bassist Scott LaFaro's early musical development and technique (p. 39). Pekar's (2001) interview with Barre Phillips gives insights into the creation of Phillips' revolutionary solo bass LP, *Journal Violone* (1968) (p. 42). Hendrickson's (2005) interview with William Parker reveals the hardships faced in the early days of New York's now-successful Vision Festival (p. 50). And Roberts' (1996) interview with Charlie Haden provides an understanding of how and why early studio recordings by the Ornette Coleman Quartet differed from

rehearsals and live performances (p. 50). In these ways, historical writings have revealed much about the musical and social practices of bassists notable for defying the expectations of conventional performance.

2.3.3 Interviews (non-academic)

Interviews outside of formal academic study can serve as a valuable introduction to modern music's foremost bass innovators. Though typically not analytical in focus, these resources can provide important information on an artist's life and work that may not be found elsewhere. Such is true of interviews with Mark Dresser (Uitti, 2006; Crouch, 1999); Simon H. Fell (Watson, 1999); Barry Guy (Dwyer, 2014; O'Driscoll, 2014; Clark, 2007; Buium, 2002; Shoemaker, 2001; Talbot, 1996; Miller, 1991; Ansell, 1984); and Joëlle Léandre (Wimbish, 2014; Uitti, 2006). These interviews offer biographical information, an overview of each bassist's work, their thoughts and philosophies, and insights into their creative processes. However, they do not typically provide an in-depth, peer-reviewed study of the artists' works or significant musical contributions.

2.3.4 Improvisation studies

Studies on improvisation can reveal in rich detail the innovations and practices of musicians utilising extemporaneous musical performance. Hodson (2000), Charry (1997) and Wilner (1995) use recorded performances to examine the improvisational interactions between Bill Evans with Scott

LaFaro, saxophonist Ornette Coleman with bassist Charlie Haden, and saxophonist John Coltrane with bassists Art Davis and Jimmy Garrison [Hodson]; Ornette Coleman and Charlie Haden [Charry]; and Bill Evans and Scott LaFaro [Wilner]. Each uses musical transcription, textual analysis and historical context to demonstrate the significance of improvisational processes used in performance. Though an effective means of studying recorded performance, these research methods have limitations. Charry's study uses musical transcription to demonstrate that Coleman's early music adhered to musical form and was not freely improvised. Though his harmonic and melodic analysis bears out this hypothesis, Roberts' (1996) interview with Haden reveals that how the band performed in the recording studio was not indicative of their typical performance methods, which *were* freely improvised (p. 50). As such, Charry's research demonstrates the limitations of transcription and harmonic analysis when researching the practices of musical communities.

Sabin (2015) and Steinbeck (2008) use similar analytical methods in their respective studies of bassist Gary Peacock's recorded improvised performances and an analysis of an Art Ensemble of Chicago recording with bassist Malachi Favors. However, each integrates qualitative data into their musicological research. Sabin gathers additional data by interviewing Peacock and discussing Peacock's biographical history, pedagogical training, practice methods, and interpersonal interactions between Peacock and his

musical collaborators. Steinbeck, a bassist himself, draws from his experiences playing with Art Ensemble of Chicago saxophonist Joseph Jarman in his analysis. He emphasises group interaction and includes environmental and sociological data on how the music was conceived, rehearsed and performed. In these ways, both authors demonstrate the value that qualitative research can bring to a study of improvised performance.

2.3.5 Technique and performance

Studies of technique and performance can offer exceptional insights into the practices of cutting-edge musicians. They are typically written by specialists and are often autoethnographic accounts of their own individual practice. Such is the case with bassist Mark Dresser (2000), who gives a detailed description of the many extended techniques he has developed for the double bass. Dresser clearly explains and provides notated examples for left-hand, *arco* and *pizzicato* techniques, as well as the physics that enables him to produce certain sounds. Likewise, bassist Håkon Thelin's research details his own preparation of modern repertoire and the influence of bassist Stefano Scodanibbio on his creative output (haakonthelin.com, 2016). Thelon provides score excerpts, comprehensive descriptions of extended techniques used for performance and links to audio recordings of his work.

Bassist Bertram Turetzky's *The Contemporary Contrabass* (1974) gives an extensive evaluation of experimental bass playing. Primarily written as a

resource for composers, Turetzky describes hundreds of technical and timbral possibilities for modern bass playing. Chapters are divided by 'family' of technique and provide clear and comprehensible descriptions of sound and means of execution. Almost every example comes with a repertoire citation, score excerpt, and demonstration on an accompanying LP.

2.3.6 Conclusion of bassists review

This review has examined current literature on experimental double bassists. It has looked at jazz historical research, improvisation studies, non-academic interviews, technique studies and performance methods. Lastly, it has examined the advantages and potential limitations of musical transcription, interviews, non-academic writings and autoethnographic writings.

A common trait amongst all scholarly resources was the inclusion of environmental conditions and interpersonal factors in addition to musical analysis. Dunkel (2011) and Saul (2001) examined musical contributions within a historical and sociological framework, examining Mingus' music within the context of larger, non-music centred American social movements. Sabin (2015), through his use of interview, incorporated accounts of interpersonal communication and interaction within his analysis, thus demonstrating how qualitative data can enhance understanding of musical performance. For improvisation studies, musical transcription was a common method for presenting data and findings. However, Sabin (2015), Steinbeck

(2008) and Hodson (2000) each acknowledged the difficulties in rendering a freely improvised performance into traditional notation. These researchers thus developed original systems for analysing and presenting data. In doing so, they demonstrated the need for researcher creativity when investigating experimental music and performance.

Sadly, the initial search for literature revealed a deficit of scholarly writings on some of the most influential bassists in modern music. Despite their historic innovations and contributions to contemporary performance, scholarly writings on Fernando Grillo, Henry Grimes, David Izenzon, Peter Kowald, John Lindberg, Jean-Pierre Robert, Stefano Scodanibbio and William Parker were not found within the English language databases searched. This lack of scholarship demonstrated a need for research into contemporary musical figures within the bass world.

In conclusion, this review illuminated three ideas that became pivotal to my research. First, the scarcity of information on experimental double bassists demonstrated the need for additional scholarship. However, explications of technique were well documented, indicating that this research could focus on areas other than technical applications. Second, the review showed that the use of interview could add a depth of understanding to the practices of individuals and musical communities that musical analysis alone could not address. Third, it showed that musical research could be enriched by

qualitative analysis. This thesis would therefore address extra-musical influences such as environment, personal history and interpersonal processes. As such, it was imperative to examine qualitative methods of data analysis.

2.4 Qualitative research methods

Sociologist Alphons Silberman states that one must understand a methodology before attempting to integrate it into musicological research (Silberman, 1963, p. 11). The purpose of this review is to demonstrate that knowledge and justify my methodological framework. As I have no formal academic training in psychology, it is beyond my experience to present an exhaustive look at the current state of qualitative analytical literature. Instead, I examine writings on qualitative data analysis that are applicable to my research and point to musicological studies that utilise the methodologies discussed.

2.4.1 Methods for selecting literature

Using Smith's (2015) *Qualitative Psychology: A Practical Guide to Research Methods*, I identified four possible methodologies relevant to this research: discourse analysis, interpretive phenomenological analysis, narrative analysis and thematic analysis. I used the University of Edinburgh's library search engine to find literature on each of the four methodologies, giving preference to writings of an explanatory nature and that emphasised practical

application. To select musicological studies using these methodologies, I entered each methodology into *RILM* and the University of Edinburgh's library search engine. Lastly, I searched for scholarly writings on interviewing as a means of collecting qualitative research data. For this final search, I entered the terms 'interview' and 'qualitative research' into the University of Edinburgh's library search engine to locate relevant literature.

2.4.2 Discourse analysis

Discourse analysis examines how discourses construct realities and establish power relations (Kvale, 2007, pp. 112-113). Arising from conversation analysis and ethnomethodology (Barbour, 2006, p. 24), discourse analysis combines the study of what talk in action is trying to achieve with attention to the setting, culture and local knowledge in which a conversation occurs (Wiggins & Potter, 2010, p. 73; Willig, 2008, p. 160; Nunan, 1993, p. 8). Because of this, discourse analysis focuses on the social implications of discourse rather than how language reflects objective truths (Wiggins & Potter, 2010, p. 77; Willig, 2008, p. 162).

Discourse analysis today has divided into two primary branches, each with different research aims. The first branch, discursive psychology, is advantageous for studying what a speaker attempts to achieve through discourse (Willig, 2008, p. 162). Favouring naturalistic data, it examines how people use discourses to fulfil cultural roles and is often used to indicate

areas for further research (Wiggins & Potter, 2010, p. 78-79; Willig, 2008, p. 161). The second branch, Foucauldian discourse analysis (FDA), is used to investigate how discourses establish and legitimise power in society (Willig, 2008, p. 172; Barbour, 2006, p. 24). An FDA study is likely to be historically oriented, and data may be collected from a variety of sources including political speeches, expert discourses, historical documents, manuals, assembly instructions and advertisements (Arribas-Ayllon & Walkerdine, 2010, p. 100; Willig, 2008, p. 173). To assess the suitability of applying either branch of discourse analysis to this research, it is necessary to look at how this methodology has been used in past musicological studies.

Smitherman (1997)) and Thompson (2002) use discourse analysis to examine how discourses are used by and impact on musical communities. Smitherman studies data taken from song lyrics, interviews and popular slang to discover how American rap artists confront racism and establish identity within the hip-hop community. Thompson analyses data from a semi-structured interview with a Queensland secondary school teacher to understand how world music is inadvertently marginalised in the classroom. Respectively, these studies demonstrate the value of using discourse analysis to understand the practices of musical communities and improve music education. As these objectives were aligned with my own research, it was a methodology that I had to consider. However, while discourse analysis is valuable for discovering what one attempts to establish through

communication, perhaps other methodologies could better coincide with my research objectives.

2.4.3 Interpretive phenomenological analysis

Phenomenology offers many advantages to the musicologist working with qualitative data. Its emphasis on life experience, similarities to symbolic interactionism, and hermeneutic underpinnings make it an appropriate vehicle for a study of the subjective (Smith & Osborn, 2015, pp. 25-26; Barbour, 2006, p. 22; Guest, MacQueen, & Namey, 2012, p. 13). Though many methodologies have been influenced by phenomenology (Smith & Osborn, 2015, p. 27), this review looks specifically at interpretive phenomenological analysis (IPA). The essential hallmarks of an IPA study are the semi-structured interview, small and homogenous data samples, and the iterative process of theme identification (Smith & Osborn, 2015, pp. 27-28, 43-45). In their handbook, *Interpretive Phenomenological Analysis: Theory, Method, and Research* (2009), Smith *et al*. provide examples of IPA research that demonstrate its diversity and adaptability as a methodology. As the following musicological studies show, this is indeed the case.

Oakland, MacDonald and Flowers' (2012) study of the self-perception of professional opera choristers after forced redundancy and Sansom's (2007) research into how improvisational practice informs self-identity both demonstrate the effectiveness of IPA in musicological research. For Oakland

et al., IPA is advantageous in that it enables them to gain local understanding without attempting to build a global theory. Sansom uses IPA because it is 'appropriate for the exploration of music as an experienced phenomenon' (p.1). Both studies are explicitly concerned with the concept of identify and thus utilise an analytical framework that privileges an understanding of how participants interpret lived phenomenon. Moreover, both studies combine IPA with additional analytical frameworks. Oakland *et al*. use Organismic Valuing Theory of growth after adversity as a framework to discuss concepts of self-identity and formulate hypotheses for further study. Sansom, meanwhile, combines the findings from IPA analysis with ontological, philosophical and dialectical theories to demonstrate significance in concepts of self. Both studies attest to IPA as a versatile methodology, though there are certainly other frameworks that can evaluate qualitative data.

2.4.4 Narrative analysis

Narrative analysis is an advantageous methodology for organizing data in studies of subjectivity and self-identity (Riessman, 1993, pp. 1, 5). It emphasises how participants interpret their life, with emergent themes systematically developed and interpreted by the researcher (Holstein & Gubrium, 2012, p. 15; Riessman, 1993, p. 4). Narrative analysis typically avoids treating first-person accounts as scientific data, as themes are more often inferred than explicitly stated by research participants (Holstein & Gubrium, 2012, p. 18). Moreover, narrative analysis is easily adapted to

mixed methods research and can be used to generate exploratory qualitative analysis that is later analysed quantitatively (Holstein & Gubrium, 2012, p. 84; Riessman, 1993, p. 45). Lastly, narrative analysis studies typically combine linguistic cues such as sentence structure, metaphors and verb tense with analytical techniques taken from ethnography of communication that emphasise full awareness of the cultural and social context one is working in (Holstein & Gubrium, 2012, p. 126; Riessman, 1993, p. 52).

Looking at musicological applications, Kochman, Coussement, Moelants and Leman (2012) combine a narrative analysis of opera lyrics with iterative prototyping in order to design a gesture-based vocal enhancement tool for opera singers. Sliva (2017) applies narrative analysis to a poem accompanying the third movement of Paul Hindemith's *Sonata for Harp* (1939). Strand (2008) applies narrative analysis to pedagogical studies by examining pre-existing texts on classroom compositional teaching methods. Kochman *et al*., Silva, Strand do not generate qualitative data by fieldwork or scheduled interviews. These examples may be atypical of narrative analysis generally, but they are nonetheless rigorous in their application. Furthermore, each study attests to the interdisciplinary nature and effective organisational properties of narrative analysis. It is this creative use of existing frameworks that make qualitative analysis so adaptable to its central task: the identification of themes.

2.4.5 Thematic analysis

In *Applied Thematic Analysis* (2012), Guest *et al.* state that thematic analysis 'focuses on identifying and describing both implicit and explicit themes within the data' which are then coded and used for analysis (p. 12). Furthermore, Guest *et al.* (2012) state that applied thematic analysis makes use of grounded theory, positivism, interpretivism and phenomenology to 'understand how people feel, think and behave within a particular context relative to a specific research question' (p. 18). As these are also features of the previously examined methodologies, it is necessary to explore the crucial attributes that differentiate thematic analysis from the other analytical frameworks.

Thematic analysis distinguishes itself from phenomenology in that it permits a large data set that can be collected from heterogeneous sources (Guest *et al.*, 2012, p. 17). Acknowledging that a voluminous amount of data creates difficulties in theme identification, Guest *et al.* (2012) recommend software specializing in locating key-word-in-context (KWIC) (pp. 107-108), a method that, per Smith *et al.* (2009), is not typically associated with an IPA study (p. 91). And while narrative analysis allows for diversity in sampling and accommodates large data sets, thematic analysis may incorporate data collected from focus groups (Guest *et al.*, 2012, p. 119), a source that, per Barbour (2006), is ill-suited for discerning a narrative (p. 133).. Having noted these distinctive features, an examination of thematic analysis in musicology

is necessary to determine its suitability for the research objectives of this thesis.

Silverman and Hallberg (2015) and Oakland and Ginsborg (2014) use thematic analysis to study, respectively, the effects of live classical music in an urban medical clinic and how orchestral musicians perceived the effects of an improvisation workshop. Both studies use small, homogenous data sets, semi-structured interviews, gather exploratory data for future research, and can be considered action-based research, as they use qualitative analysis to potentially improve an existing situation. There are, however, differences as to method. Oakland and Ginsborg use questionnaires, video recordings and participant feedback. By contrast, Silverman and Hallberg use multiple coders and specifically link their analytical process to Braun and Clark's (2006) six phases of thematic analysis. These differences attest to the versatility and adaptability of thematic analysis in musicological research.

2.4.6 Collecting qualitative data

Used heavily in psychoanalysis, the qualitative interview is a powerful tool for gaining access to how research participants view their life world (Kvale, 2007, p. 5). It is not, however, a homogeneous method. Opinion polling, telephone surveys, questionnaires, one-on-one interviews and focus groups are all ways in which researchers may use interviews to collect data (Fontana

& Frey, pp. 361-362). This being so, a discussion of interview methods most often found in qualitative research is necessary.

2.4.7 Structured Interview

Found in psychological as well as ethnographic research, the structured interview may be used by itself or in conjunction with a multi-method approach to data collection (Griffin & Bengry-Howell, 2010, p. 17). Its defining features are short, specific questions that do not vary in wording or sequence and a limited response category from the participant (Smith & Osborn, 2015, p. 30; Fontana & Frey, 1994, p. 363). The researcher predetermines what data they seek, and then devises questions they believe will yield that information (Smith & Osborn, 2015, p. 30). As a result, the response categories must pre-coded before the interview (Fontana & Frey 1994, p. 363).

The structured interview has inherent advantages and disadvantages. A rigid schedule is beneficial for identifying themes within large data sets, as researchers may delegate collecting information to a team of interviewers (Guest *et al.*, 2012, p. 22). Likewise, the more structured the interview, the easier it is to structure the analysis, a distinct benefit when working with a high volume of data (Kvale, 2007, p. 57). However, the structured interview offers little flexibility for the interviewer. As such, there are limitations to what one may discuss (Smith & Osborn, 2015, p. 30). For these reasons, a

structured interview is unlikely to provide the depth needed for a phenomenological study (Smith *et al*., 2009, p. 56).

2.4.8 Semi-structured interview

The semi-structured interview is beneficial for discovering what information and perspectives a research participant prioritises (Barbour, 2006, p. 119). It is usually conducted one-to-one, and though a schedule is common, interview questions and their sequence may be modified per the participant's responses (Smith *et al*., 2009, p. 58). The interview content usually alternates between narrative and descriptive accounts, though questions that elicit comparative and evaluative responses are also common (Smith *et al*., 2009, p. 60). For these reasons, it is suitable for studies using an IPA methodology (Smith & Osborn, 2015, p. 29; Barbour, 2006, p. 219).

Unlike the structured interview, the researcher does not create a schedule with predetermined data in mind. They instead ask expansive questions meant to yield a rich variety of data (Smith *et al*., 2009, p. 59). Prompts and probes are encouraged, and the interviewer may rephrase a question or ask that the respondent clarify an answer (Smith *et al*. 2009, pp. 63-65; Barbour, 2006, p. 119). For additional contrasts to the structured interview, the interviewer influences the data, both by their presence and sensitivity to the topic (Kvale, 2007, pp. 13-14). Furthermore, semi-structured interviews are

more time consuming, harder to analyse and potentially difficult for the interviewer to control (Smith & Osborn, 2015, p. 31).

2.4.9 Unstructured interview

Like the semi-structured interview, the unstructured interview allows for personal influence, though its implementation is more akin to fieldwork (Fontana & Frey, 1994, p. 366). This method usually involves a high familiarity with the language and culture of the participants and may be the preferred method for situations where flexibility supersedes procedure (Fontana & Frey, 1994, pp. 366-368). It is often used when the researcher is unable to assume the topics that may arise, as it allows the participant to select and prioritise the subjects discussed (Smith *et al.*, 2009, p. 70). This is a method best reserved for the experienced interviewer (Smith *et al.*, 2009, p. 70).

2.4.10 Focus groups

Focus groups let the researcher hear multiple points of view on a focused subject (Kvale, 2007, p. 72). Though mostly used for marketing and political research (Kvale, 2007, p. 72; Fontana & Frey, 1994, p. 364), focus groups are beneficial for applied research and issues of immediacy (Smith *et al.*, 2009, p. 72). Regardless of the purpose, focus groups are typically applied towards phenomenological purposes and used to generate exploratory data (Fontana & Frey, 1994, p. 365). Due to the conversational interaction

inherent to this method, a discursive analytical methodology is preferred (Smith *et al*., 2009, p. 71).

Focus groups offer distinct advantages and disadvantages. They can aid memory, provoke elaborative responses and offer a more cumulative data set than what one may get from a singular participant (Fontana & Frey, 1994, p. 365). The economic advantages of using focus groups are mixed. While gathering a voluminous amount of data from a single session can be cost efficient (Fontana and Frey, 1994, p. 365), it can be expensive to secure a large enough room to facilitate the interview (Barbour, 2006, p. 133). In addition to monetary considerations, there are other potential concerns for the researcher. It may be difficult to assemble a group that meets the participant criteria (Barbour, 2006, p. 133). Moreover, questions must be highly focused to facilitate the desired discussion (Barbour, 2006, p. 133), and questions related to sensitive topics may be off limits (Fontana & Frey, 1994, p. 365). Lastly, the moderator must avoid having one person dominate the discussion, and they must recognise that individual opinions may evolve into a group mentality (Guest *et al*., 2012, pp. 119-120; Fontana & Frey, 1994, p. 365). These considerations notwithstanding, the focus group is a valuable tool for gathering qualitative data.

2.4.11 Comparisons and Considerations

As each method of interviewing has unique advantages, the researcher should decide how they will gather data in the earliest stages of research. Focus groups and semi-structured/unstructured one-to-one interviews are suited to studies employing a discursive, IPA, narrative or thematic analysis. For those wishing to collect larger sets of data, structured interviews and focus groups are preferable. However, if one wishes to take a phenomenological or discursive approach to analysis to a large data set, the focus group is preferable. If the researcher wishes to gather data from a select few participants, the semi-structured interview is preferred. The unstructured interview may also be an option in this scenario, though this method works best with experienced researchers who can adapt to unpredictable situations. By knowing the benefits and characteristics of each method, the researcher may best select their tools.

2.4.12 Conclusion of methodologies review

Each methodology reviewed has offered distinct advantages to achieving my research aims. Favouring naturalistic data, discourse analysis is used to discover what a speaker is trying to achieve through speech. IPA, with its focus on individual interpretation, is best suited for 'the detailed exploration of personal meaning and lived experience' (Smith & Osborn, p. 25). In narrative analysis, data is rendered into a narrative form that is then examined and analysed for thematic content. And thematic analysis is best suited for a

researcher who wishes to, per the procedures outlined by Braun and Clark (2006), take a potentially large amount of data, search the coded data for thematic content, and then review those themes so that they may be defined, named and presented to answer a question. To decide which methodology would work best for this research, I needed to restate my objectives and clarify what would define my final offering.

My research will examine how double bassists interpret graphic score notation. To gather data, I will use a semi-structured interview that will focus on preparation methods, performance technique, background, the relationship between performer and composer, improvisation, group interaction and personal interpretation. The information I am likely to gather will be a mix of the personal, anecdotal and technical. For these reasons, I will exclude discourse analysis as a methodology, as its use of naturalistic data and emphasis on power relations are not aligned with my primary research objectives. Moreover, I will exclude narrative analysis as my sole methodology because technical accounts rely on specialised knowledge and as such are not stories (Holstein & Gubrium, 2012, p. 41). I realise, however, that narrative analysis may be applicable to a portion of my data.

Looking further at my research aims, I have decided to use interpretive phenomenological analysis. Though I believe that thematic analysis is a suitable framework, the studies reviewed indicate that it is best applied to

research questions that lend themselves to a more definitive answer. As my research will focus on participants' personal experiences and not attempt to develop a universal theory, I believe that IPA is the appropriate methodology. As indicated by this review, using IPA will facilitate a deep study of the research participants' lived experiences, personal beliefs, backgrounds, and social and professional environments. It will also allow me to incorporate my personal experiences into the analysis. That is important, as the integration of my creative practice into the data analysis is a significant component of this study. For these reasons, I consider IPA the most advantageous methodology by which to conduct this research.

Chapter 3 Method

3.1 Overview

This chapter discusses data collection and analysis. It describes each research participant, provides a rationale for the interview design and outlines the interview process. It details the method of data analysis and concludes with a section on researcher reflexivity.

3.2 Participant selection, description and recruitment

I interviewed professional musicians about their experiences with graphic composition. As IPA studies typically favour small, homogenous samples (Smith *et al*., 2009, pp. 3-4), I limited this study to five professional double bassists with significant involvement in contemporary music. Keeping with IPA methodology, this small data set enabled me to rigorously explore participants' life experiences, investigate their perceptions of these experiences, and consider how social and environmental factors influenced their interview responses (Smith & Osborn, 2015, p. 25; Pietkiewicz & Smith, 2012, p. 364). Though conclusions from a sample set of five may not indicate widespread practices within graphic composition, the findings did allow me to meet my original research aims: to investigate how experienced musicians compose, interpret and perform graphic notation.

Participants were selected for their outstanding professional accomplishments in contemporary music. Other than scheduling the

interviews over email, I had no prior personal relationships with the participants. However, I was aware of their work through my involvement in new music both as a professional musician and as a scholar. A description of each participant, how they were contacted, and the interview process itself is described below.

1. Robert Black: I first became of aware of Robert Black through his membership with the internationally recognised new music ensemble Bang on a Can All-Stars. A prolific champion and performer of new music, his recordings of graphic works by John Cage and Christian Wolff, combined with his work as an educator in contemporary musical performance, made him an ideal participant (robertblack.org, 2019). I contacted Black via an email address listed in the International Society of Bassists member directory. The data was taken from a person-to-person, semi-structured interview conducted on August 17, 2017 in London, United Kingdom.

2. Simon H. Fell (1959-2020): Bassist and composer Simon H. Fell performed and collaborated with some of the finest musicians in contemporary improvisation (brucesfingers.co.uk, 2019). A prolific composer, he wrote both chamber and large ensemble works that blended improvisation with 20th century compositional practices (Watson, 1999, p. 59). I contacted Fell through an email address listed in an index of conference delegates. Though we had previously met at an academic symposium, I had no

noteworthy personal or professional relationship with Fell. The data derived from a person-to-person, semi-structured interview conducted on December 15, 2017 in Huddersfield, U.K.

3. Barry Guy: Barry Guy has led a distinguished and multifaceted career as a composer and double bassist. Highly proficient in both classical music and contemporary improvisation, he has performed in orchestral, chamber and solo settings as well as with large and small improvising ensembles (Dwyer, 2014, pp. 136-138). As a composer, Guy has written for orchestra, chamber ensembles, soloists, improvising ensembles, and has produced vibrant, frequently performed graphic scores (O'Driscoll, 2014, pp. 124-126). I contacted Guy via his website, www.barryguy.com. The data was taken from a person-to-person, semi-structured interview conducted on July 26, 2017 via Skype. At Guy's request, he member checked the analysis of his interview.

4. John Lindberg: As a composer and bandleader, bassist John Lindberg has collaborated with some of modern music's most innovative composers and improvisers (Kernfeld, 2003, par. 1). As a sideman, he has worked with composers Anthony Braxton and Wadada Leo Smith, each of whom are recognised for creating idiosyncratic graphic notational systems. I contacted the participant through his website, johnlindberg.com. The data was taken from a person-to-person, semi-structured interview conducted on September 9, 2017 at the participant's home in Battle Creek, Michigan, U.S.A.

5. Lisa Mezzacappa: Based in the San Francisco Bay Area, bassist and composer Lisa Mezzacappa has utilised graphic notation and improvisation in a multitude of compositional frameworks (lisamezzacappa.com, 2019). As an educator, she has shared her findings on graphic scores at the International Society of Bassists 2017 Convention (isbworldoffice.com, 2017). I contacted Mezzacappa through an email address provided by a prospective research participant. The data was taken from a person-to-person, semi-structured interview conducted on October 24, 2017 via Skype.

3.3 Interview design and preparation

The interview schedule consisted of ten questions and several potential follow-ups. Per Smith *et al.*, (2009), the schedule was designed to include the following types of questions: descriptive, narrative, structural, contrast, evaluative, circular and comparative (p. 60). Per Kvale's (2007) guidance for conducting interviews (p. 60), the first question, 'How did you develop an interest in performing graphic or non-traditionally notated music,' was formulated to encourage open communication by getting participants to relate a narrative account of their experiences. The entire schedule, including Smith *et al.*'s descriptors of each question, appears in Appendix 1.

To prepare for data collection and analysis, I conducted two pilot studies. The first was undertaken to develop my interview, transcription and analysis skills.

For this study, I interviewed a fellow PhD student and double bassist about her experiences performing graphic scores. In doing so, I gained insights into how my interviewing skills could be improved by using succinct speech, giving the interviewee time to answer fully, and moving away from the interview schedule to follow important emerging data. I also revised the wording of the several interview questions to more accurately reflect my research aims.

For the second study, I interviewed a double bassist colleague, Tom Blancarte, about his experiences with graphic composition (Wimbish, 2020). This pilot study helped me gain experience using IPA as a research methodology. Conducting it allowed me to analyse qualitative data using IPA as my analytical framework, write up and present my findings, and member check the analysis with the research participant. It also prepared me, through feedback from my supervisors, to hone and improve my applications of IPA methodology.

3.4 Data analysis

To analyse the data, I followed methods and procedures outlined in Smith *et al*'s (2009) methodology for IPA in qualitative research. Each interview was recorded with an H2 Zoom portable recorder with an iPhone as a backup recording device. The earliest stage of analysis consisted of transcribing each interview verbatim and developing a key modelled after a study by

MacDonald and Miell (2002). The transcription key used for this research is presented below.

- , = conversational pauses including breaths and slight hesitations for emphasis
- .. = longer pauses indicating a temporary cessation of speech
- … = extended pauses indicating that speech has stopped for ten or more seconds
- - = an interruption in the conversation by either the researcher or the participant
- italics indicate emphasis in speech
- brackets indicate supplementary commentary by the researcher

The next stage of analysis involved iteratively listening to the recording while reading along with the transcript. This process allowed for checks in transcriptional accuracy, enabled detailed textual denotation of vocal emphases and pauses, and facilitated a deep familiarity with the data. After repeated listenings, I printed the interview with ample margin space to make exploratory notes, code data and develop themes. The coding system used in this analysis is typical to IPA research (Smith *et al*., 2009, p. 84) and is explained below.

- descriptive: literal descriptions within the text of significant events, ideas or objects

- language: examines words or phrases used by the subject deemed notable by the researcher
- conceptual: hermeneutic interpretations that are interrogative and conceptual in nature; notes in this section often refer to other statements by the participant and the personal experiences of the researcher

Having established coding, I read through the text several more times, writing exploratory notes in the most appropriate column. Keeping with recommendations for IPA methodology, notes were colour-coded with the above coding system (Smith *et al.*, 2009, p. 84). I then re-read these notes to determine the emergent themes (fig. 3.1).

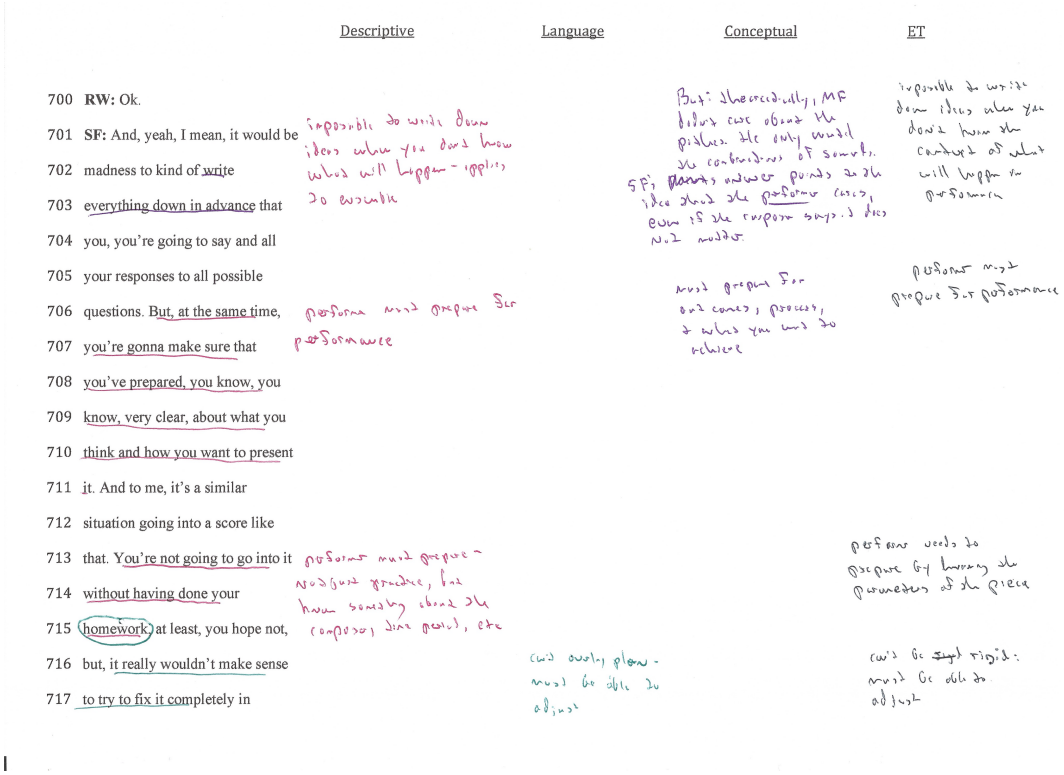

Fig. 3.1 Scan of analysed transcript (Simon Fell)

Following this, the emergent themes were re-written in the order in which they appeared and clustered together according to similarity of content. Each cluster was then given a designation that best described its thematic content. Next, these clustered emergent themes were grouped together according to subject matter and given a title that summarised the superordinate thematic material. This final grouping became the five superordinate themes on which my analysis is based.

3.5 Researcher reflexivity

In this review of method, it was important to reflect upon how I as a researcher may have influenced the data. First, I considered the participant selection process. As stated at the beginning of this chapter, this study sought to discover how exemplary performers of new music have engaged with graphic composition. To achieve this aim, I selected research participants based on my knowledge of their musical achievements rather than demographic criteria such as age, gender, nationality and ethnicity. Nonetheless, I had to address personal biases and notable omissions in my selection. To begin, as participant selection was based upon personal knowledge, my background as a North American who is only fluent in one language biased my selection towards participants with a commercial and academic presence in the United States and United Kingdom. Thus, it is necessary to acknowledge that important contributors to graphic composition

may, and are indeed likely, to exist outside of my knowledge of suitable research participants.

Continuing with participant selection, as I sought participants with a demonstrable engagement with contemporary composition and performance, I approached musicians who were well-established in their careers. For this reason, I excluded potential research participants who lacked at least a decade of professional engagement with contemporary music. Thus, I may have excluded people of colour and women of any colour who have contributed to graphic composition but due to discrimination lack professional experience.

Lastly, my experiences as an improvising musician may have influenced the data. My awareness of contemporary improvisational practices and practitioners has been an asset to this research, as it has aided in my comprehension of the data and informed the data analysis. In fact, I first became aware of participants Barry Guy, Simon H. Fell and John Lindberg through recordings of their improvised performances long before I undertook doctoral research. For this reason, I needed to acknowledge that findings regarding the importance of improvisation within graphic composition may be influenced by my selection of participants who are all exceptional improvisers.

3.6 Approach to creating output

My approach to composing my creative output was informed by the data analysis. As the analysis indicated a variety of approaches to graphic composition and performance, my compositional method cannot be generalised. The process of creating this output enabled a unique engagement with my research findings on a practical level. Each piece was composed (minus minor revisions) after analysing the interviews and before completing the write-up. These compositions therefore became a final means of engaging analytically with the data. This process took different forms. It involved integrating analytical findings within a compositional sketch, experimenting on my instrument, listening to musical performances with new insights gained from analysis, and determining ways in which I could apply the findings in an original manner. As every piece was created to reflect different findings from the data analysis, there was no formal method by which I created each work. To uncover how the data influenced the composition process itself was central to this thesis. For this reason, I did not keep to an established or even consistent method when creating the original compositions of this thesis.

Chapter 4 Overview of Analysis and Creative Output

4.1 Overview

This chapter introduces the superordinate themes of this thesis. Each superordinate theme is presented in tandem with a summary of its corresponding emergent themes and an explanation of how the emergent themes contribute to the conceptual unity of each category. As much of the data is relevant to multiple analytical categorisations, overlaps in subject matter between the superordinate themes are indicated and expounded upon. Following this, the research questions are restated to demonstrate the link between the analytical findings and the original research objectives. This chapter concludes with an overview of my creative practice and how it has been informed by the analysis.

4.2 Superordinate themes

Through my analysis, I have developed six superordinate themes (table 4.1). The first superordinate theme, *essential characteristics of graphic composition*, comprises five emergent themes: participant definitions of graphic composition, combining determinate and indeterminate structures, providing a compositional solution, influence of the performer, and social processes embedded within the score. These themes explore participant views on the integral facets of graphic composition. These perspectives include how a participant defines a graphic score, structural attributes of

graphic composition, assessing graphic notation in relationship to one's compositional aims and significant features of the compositional process.

Super-ordinate themes:	Essential characteristics of graphic composition	Improvisation	Communication from composer to performer	Performing a graphic score	Intergroup communica-tion	Evaluating performance
Emergent themes:	• Participant definitions of graphic composition • Combining determinacy and inde-terminacy • Providing a composition-al solution • Influence of the performer • Social processes embedded within the score	• The role of the improvising performer • Music as performance • Compositional limits to improvised performance	• Suitability of graphic notation to compositional aims • Textual communica-tion from composer • Verbal communica-tion from composer • Establishing trust	• Preparing for performance • Mapping • Disregarding the score	• Collective decision making • Building consensus through perfor-mance	• Difficulties evaluating graphic score perfor-mance • Determining a success-ful graphic score per-formance

Table 4.1 Superordinate and emergent themes

The second emergent theme, *improvisation*, consists of three emergent themes: the role of the improvising performer, music as performance, and compositional limits to improvised performance. This section discusses how improvisation functions in the performance of a graphic score as well as limitations within the compositional framework that may be placed upon the improvising performer. Central to this superordinate theme is the concept of music as performance. Per Cook (2012), music as performance views the musical score as an incomplete 'script' which can only be realised through the performative act (p. 186). As improvisational processes may only be

realised through performance, this is a suitable theory with which to examine the use of improvisation within graphic composition.

The superordinate theme *communication from composer to performer* is divided into four emergent themes: suitability of graphic notation to compositional aims, textual communication from composer, verbal communication from composer, and establishing trust. This superordinate theme discusses the importance of the composer having clear, well-constructed ideas. This theme also relays different communication methods that the composer may use to impart ideas to the performer. Lastly, this section examines how composers attempt to establish trust between themselves and the performing musicians.

The next superordinate theme, *performing a graphic score*, examines methods of performing graphic notation. It consists of three emergent themes: preparing for performance, mapping, and disregarding the score. This superordinate theme discusses the importance of score preparation and explores methods of assigning musical meaning to graphic notation. It also looks at situations in which participants believe it is appropriate for a performer to disregard the textual imperatives of a score.

Returning to communicative methods, the superordinate theme *intergroup communication* contains two emergent themes: collective decision making

and building consensus through performance. This section examines how performers attempt to interpret graphic notation in a group context, arrive at an interpretive consensus, and resolve creative differences. This section also evaluates the limits of spoken communication and the value of establishing interpretative strategies through praxis.

The final superordinate theme, *evaluating performance*, consists of two emergent themes: difficulties evaluating graphic score performance and determining a successful graphic score performance. In this section, participants discuss the problems of evaluating music without a standardised set of evaluative criteria. After addressing these difficulties, the analysis concludes with participant strategies for evaluating graphic score performance.

Having summarised each superordinate theme, it is necessary to reflect upon any overlap amongst these analytical classifications. Per the standard methodology for IPA in qualitative research, the interviews were coded and clustered to detect patterns and similarities that indicate distinct thematic categorisations (Smith & Osborn, 2015, pp. 40-48). However, conceptual imbrication between the superordinate themes was inevitable. The theme of improvisation, for example, figured prominently not only as a superordinate theme unto itself, but as a subject that influenced discussions on compositional methods, graphic interpretation and evaluating performance.

Likewise, characteristics of graphic composition factored into discussions on interpretation, communication and evaluation. In order for my analysis to evidence this thematic overlap, I often referenced significant findings from other sections that pertain to the topic under direct discussion. To avoid constant referral, I have constructed this analysis to resemble a narrative account. Thus, the findings are presented so that the chapters may best be read chronologically, as most superordinate themes reference concepts introduced earlier in the analysis.

4.3 Link to original research objectives

My original research objectives centred on four questions:

1. What strategies do participants use for interpreting graphics in music?
2. What is the role, if any, that improvisation plays in performance?
3. What is the role of communication in performance?
4. How do these findings inform my creative output?

Upon concluding my analysis, I believe that this research has met these investigative aims. The superordinate theme *performing a graphic score* pertains directly to interpretation methods used by working professionals. The role of improvisation in performance is examined not only within the superordinate theme *improvisation*, but throughout superordinate and emergent themes pertaining to composition, graphic interpretation and evaluation. Queries into how communication is used in performance yielded

two superordinate themes: *communication from composer to performer* and *intergroup communication*. These themes explore how participants convey technical information, aesthetic expectation and approval or disapproval. This research also looks at the interpersonal and sociological nature of these interactions. The latter is crucial to the academic rigour of my work. Per Hargreaves, MacDonald and Miell (2005), traditional research into musical communication has been dominated by information transmission models that examine the unidirectional transfer of information from dispatcher to recipient (pp. 3-4). However, in recognition that communicative interactions are rarely so one-sided, Hargreaves et al (2005) suggest that research into musical communication should examine communicative reciprocity, environment and personal histories of the communicating parties (pp. 5-6). Moreover, Ganter and MacDonald's (2015) research into collaborative graphic score composition and Iddon's (2013) study of the correspondences between John Cage and David Tudor demonstrate how examining communicative reciprocity, environment and the interpersonal relationships between communicating parties can yield rich insights into graphic compositional practice. This research therefore embodies a broad view of communication that includes transmission methods as well as situational contextualisation. And lastly, the question of how these findings inform my creative output is discussed within each chapter. The data gathered keeps with the initial research aims and has also yielded valuable information on other areas within the field of graphic composition and performance.

Two topics outside my original research objectives have become significant to this analysis: *evaluating performance* and *essential characteristics of graphic composition*. The first, *evaluating performance*, resulted from Smith *et al.*'s (2009) recommendation to include evaluative questioning in an IPA study (p. 60). Though questions of evaluation were included in the interview schedule (app. 1), they were prioritised as a secondary research objective. However, this topic became more significant as my research progressed because it has yielded rich data that has indelibly shaped my analysis and creative output.

In contrast to evaluation, questions pertaining to characteristics of graphic composition were not included in the interview schedule. This thematic category therefore resembles grounded theory in that it arose unprompted from data provided by the participants (Griffin & Bengry-Howell, 2010, p. 8). Because I recognised this would be a recurrent theme, I adjusted my final interview with Simon Fell to follow up on the other participants' data and explicitly asked him what constitutes a graphic score. This superordinate theme has thus shaped my research in two distinct ways. First, it enabled me to explore the nature of musical composition and how social interactions affect the creation process. Secondly, it has given me valuable input and stimulus for my creative output.

4.4 Creative output

For this thesis, I composed seven graphic pieces that demonstrate prominent analytical findings (app. 6-12). Each composition was designed to be structurally different as to compositional style, notation and performative method. This was done to represent the heterogeneity of graphic compositional frameworks described by the participants as well as to broaden my own abilities as a composer. The following is a summary of each work.

1. *Maria Ave.* is a through-composed piece written for a twelve-piece chamber orchestra (*fl., ob., cl., hn., flg., pno., vln. I & II, vla., vc., cb. I & II*). It consists primarily of traditional notation, with one section in which the strings perform graphically notated musical gestures. The meaning of the graphics and how they are performed is determined by the composer and provided in a written key. This piece is informed by topics pertaining to the use of traditional notation in graphic composition; using graphics within otherwise non-graphic works; the belief that classical musicians are best served when the composer determines the meaning of graphics; and textual and verbal communication strategies for getting non-improvisers comfortable using graphic notation.

2. *Graphic Piece for Solo Double Bass* combines traditional notation with graphics whose meanings is determined by the performer. It has strict rules

governing performance, yet it is the performer who determines how they are implemented. Topics informing the composition of this piece are flexibility within graphic compositional frameworks; composer control over improvisation within a graphic score; improvisation; graphic interpretation; and communication from composer to performer.

3. *Duo for Melodic Improvisers* contains no traditional notation and may be played by any combination of instruments with pitch capabilities. Pitch and rhythmic content are determined entirely by the performer. However, duration of the composition and temporally based alterations to how the performers interact are strictly regulated by the composition. This composition is influenced by topics related to graphic scores as flexible frameworks; improvisation; the use of notation to produce a replicable performance; and evaluating performance.

4. *Machrie* is composed for chamber ensemble (*fl., cl., tr., vln., vc., electronics)* and features modules containing traditional notation and graphics. The sequence of modules is determined by a conductor whose duties also include interspersing the written ensemble parts with sections of free improvisation. This composition uses graphics that are predetermined by the composer and graphics that are freely interpreted by the performer. Themes contributing to the composition of this piece are graphic scores as flexible frameworks; the importance of metaphor in graphic composition;

abilities of the performing musicians influencing composition; and improvisation.

5. *A.B. W.L.S.* is a graphic composition that contains no traditionally notated figures and may be played by any instrument. For this piece, the performer must intersperse melodic material with textural figures correlating to colours within the composition. Topics informing the creation of this piece are advantages of graphic scores; the importance of preparation; ways of assigning meaning to a graphic; musicological knowledge informing interpretation; and improvisation.

6. *Imachinations* is a graphic composition for solo double bass that contains almost no elements of traditional notation. The process of assigning meaning to the graphics is wholly determined by the performer. This piece is informed by themes of assigning meaning to a graphic; composer control over improvisation within a graphic score; the importance of instrumental technique; and the use of notation to produce a replicable performance.

7. *Le temps est écoulé!* is a graphic piece written for an ensemble of any instrumentation. It contains no traditional notation or any compositional directives as to how to interpret the graphic notations. It does, however, contain a key with suggestions for temporal planning and how an ensemble may engage with the graphics. The creation of this piece is influenced by the

ideas that the performer is the actual creator in a graphic score and that intergroup communication is essential to graphic score performance.

4.6 Performance

In addition to composition, this research investigates how the data and analysis have impacted on my practice as a performer. This thesis documents how I have prepared, performed and evaluated canonical and original graphic compositions. This component of my artistic research draws heavily from the superordinate themes improvisation, performing a graphic score, and evaluation. As with the creative output, reflections on my practice as a performer are discussed throughout the analytical chapters of this thesis.

Chapter 5 Essential Characteristics of Graphic Composition

5.1 Overview

This chapter examines participant perspectives on the essential characteristics of a graphic score. It explores diversity within graphic composition and looks at how participants differentiate amongst graphic works. This chapter also links my compositions to these essential characteristics and positions that creative output within categories established by the participants. This superordinate theme and its emergent themes are included in the table below (table 5.1).

Superordinate theme:	Essential characteristics of graphic composition
Emergent themes:	• Participant definitions of graphic composition • Combining determinacy and indeterminacy • Providing a compositional solution • Influence of the performer • Social processes embedded within the score

Table. 5.1 Essential characteristics of graphic composition

The first emergent theme looks at participant definitions of a graphic score. Responses indicate diversity within graphic composition, with categorisations made according to appearance and method of performance. Participants also state that graphic scores combine the disciplines of improvisation and composition and that not every composition containing graphic notations is a graphic score. The second emergent theme investigates participant ideas on

determinacy and indeterminacy in graphic composition. It discusses how participants designate determinacy and indeterminacy within a graphic score and concludes by examining the relationships between these structures. The next theme examines how a composer can use graphics as a compositional solution. Participants say that they use graphic notations to impart specific musical information and facilitate improvisational interactions amongst performers. Participants also discuss the perceived advantages of graphic notation over traditional notation. The fourth emergent theme explores how knowledge of the performer influences composition. Participants state that musicians' abilities and attitudes are crucial to performance and the composition process itself. This theme challenges the Romantic ideal of the composer as the singular originator of a musical work and demonstrates the social nature of graphic composition. The final emergent theme examines how social processes may be embedded within a graphic score's compositional framework. Examining a graphic piece by John Lindberg, it demonstrates how interpersonal relationships and shared personal histories can affect composition, score interpretation and musical performance.

5.2 Participant definitions of graphic composition

This analysis begins by looking at how participants define graphic composition. While the diversity of graphic notation is apparent in score anthologies such as John Cage's *Notations* (1969) and Theresa Sauer's *Notations 21* (2009), syntactic and semantic determinations for what

constitutes a graphic score remain vague. Stone (1980), in his handbook of 20th century notation, avoids the term altogether, as do the writings collected in Boretz and Cone's *Perspectives on Notation and Performance* (1976). Nor do traditional reference tools offer substantial clarification. The term 'graphic score' is absent from *Grove Music Online*. *The Oxford Dictionary of Music Online* defines graphic scores as 'visual analogues' that 'convey the composer's intentions with the required sounds and textures' or '[seek] only to stimulate the performer's creativity' (Kennedy, Kennedy & Rutherford-Johnson, 2013, par. 1). This definition does not delimit the parameters necessary for a work to be considered a graphic score. This research therefore begins by examining participant statements on the essential characteristics of graphic composition. In doing so, it introduces categorisations within graphic composition and highlights terminologies used in praxis.

5.2.1 Variety within graphic composition

Participants' responses indicate that they view graphic composition as a heterogeneous field. Barry Guy describes the performative processes of his piece *Bird Gong Game* (1992) as being unique to 'this *particular* type of graphic score notation'. Robert Black describes Christian Wolff's *For One, Two, or Three People* (1964) as 'not *just* a graphic score, like some Earle Brown pieces are'. Simon Fell mentions a 'subcategory' of graphic composition that only includes 'printed [textual] matter'. Though not explicit

definitions, these quotes signal that diversity is a prominent characteristic of graphic composition. It is therefore important to identify how participants recognise diversity in graphic scores.

The first categorical distinction among graphic scores is difference in appearance. John Lindberg states that ‘every graphic score I’ve ever seen is really different’. Though he likely could have used the phrase ‘ever encountered’ instead of ‘ever seen’, he did not, and verbally emphasises a visual orientation. Of course, visual score attributes contributing to differentiation and categorisation are not unique to graphic composition. Mediaeval neume notation, a melody printed in ‘jazz’ font with chord symbols above the staff, a grand staff with notations idiomatic to the Romantic piano tradition: each of these notations indicates a type of composition that can be recognised visually and without substantial score study by most conservatory-trained musicians. The significance is not that graphic scores are unique in this manner, but that they too exhibit compositional diversity that may be ascertained visually by a knowledgeable practitioner.

In addition to visual attributes, the performative processes of a graphic score enable categorical distinctions. Black differentiates Wolff’s *For One, Two, or Three People* from Earle Brown’s graphic output by its explicit instructional material. To better understand how Black draws this distinction, it is necessary to examine the music he is referencing.

Christian Wolff's *For One, Two or Three People* (1964) is in many ways archetypal of early graphic composition. Its sounding attributes and precise performative activity are indeterminate, meaning they are not specified by the composer and are instead actualised by the performer during performance (DeLio, pp. 54-56). However, though Wolff does not state what is performed, what *may* happen in performance is highly regulated. The piece contains fragments of traditional notation, copious textual instruction, and over two dozen annotated graphic symbols that explain what actions the performer may take once the performance has begun (fig. 5.1). In other words, the actions of the performer are always contingent on the rules and parameters of the composition as well as the previous and concurrent actions of those performing the piece.

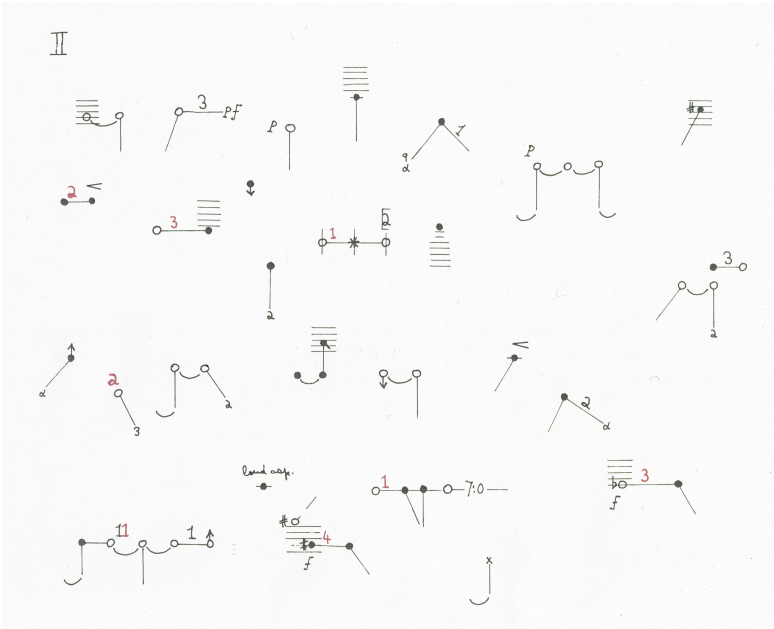

Fig. 5.1 Christian Wolff, *For One, Two or Three People,* p. 2, (1964)

Turning now to Earle Brown, Black names a piece that to him typifies Brown's graphic scores and represents an apotheosis of notation divested of its traditional representational properties.

> **RB:** [I was] going from these notated, fully notated pieces into things that were using certain graphic elements or a certain freedom in the notation, and then that sort of kept opening the door to kind of get into more just purely graphic works. I think of like, somebody like Earle Brown, like *December 1952* and that, those sorts of things.

Earle Brown's *December 1952* (1952) serves as a landmark of post-war American music. It is, in the words of musicologist Jane Alden (2007), 'a work that changed the course of the history of notation, a work without precedent' (p. 315). Completely devoid of traditional notation, horizontal and vertical lines of varying thicknesses serve as the only notational elements (fig. 5.2). Though the piece does contain textual instruction, Brown's directives are purposefully sparse, as he wished to encourage spontaneity in performance and radically different realisations (Brown, 2008, pp. 1, 6). Brown states that the graphics may be played in any order and for any length of time, with the width of the graphics indicating 'relative intensity' or 'clusters' (Brown, 1954, par. 7-8). This method of graphic interpretation stands in stark contrast to the elaborate dictums of *For One, Two or Three People*. Both pieces are thus emblematic to Black of the variety found in graphic composition.

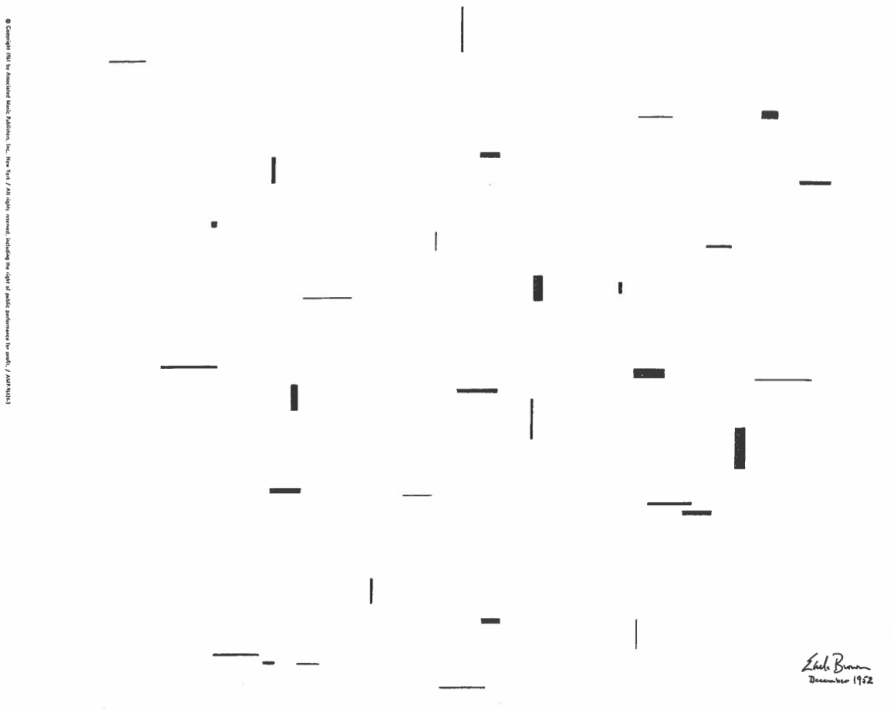

Fig. 5.2 Earle Brown, *December 1952,* (1952)

Per his earlier statement, Black sees Brown's *December 1952* as exemplifying 'freedom in the notation' and refers to it as 'purely graphic.' When asked, he defines purely graphic in the following manner:

> **RB:** I would consider something […] purely graphic […] when it no longer has *any* elements that relate to traditional notated music.

Though seemingly a straightforward definition, Black immediately amends this statement. He describes another piece by Brown, unnamed but most likely *Folio II* (1980), that is 'covered' with a 'tremendous energy of lines [and] notes and beams and rhythms and dynamics' that he would also consider a 'purely graphic' score (fig. 5.3). This addendum points to the idea that it is not

the absence of traditional notation that defines a purely graphic score; it is the lack of context. This idea is seemingly confirmed when Black describes the second Brown piece as having notation but is ‘certainly not a score like you could read’. Thus, if traditional notation is removed from the fixed reference structure developed to disambiguate its interpretation, it becomes abstracted and therefore purely graphic.

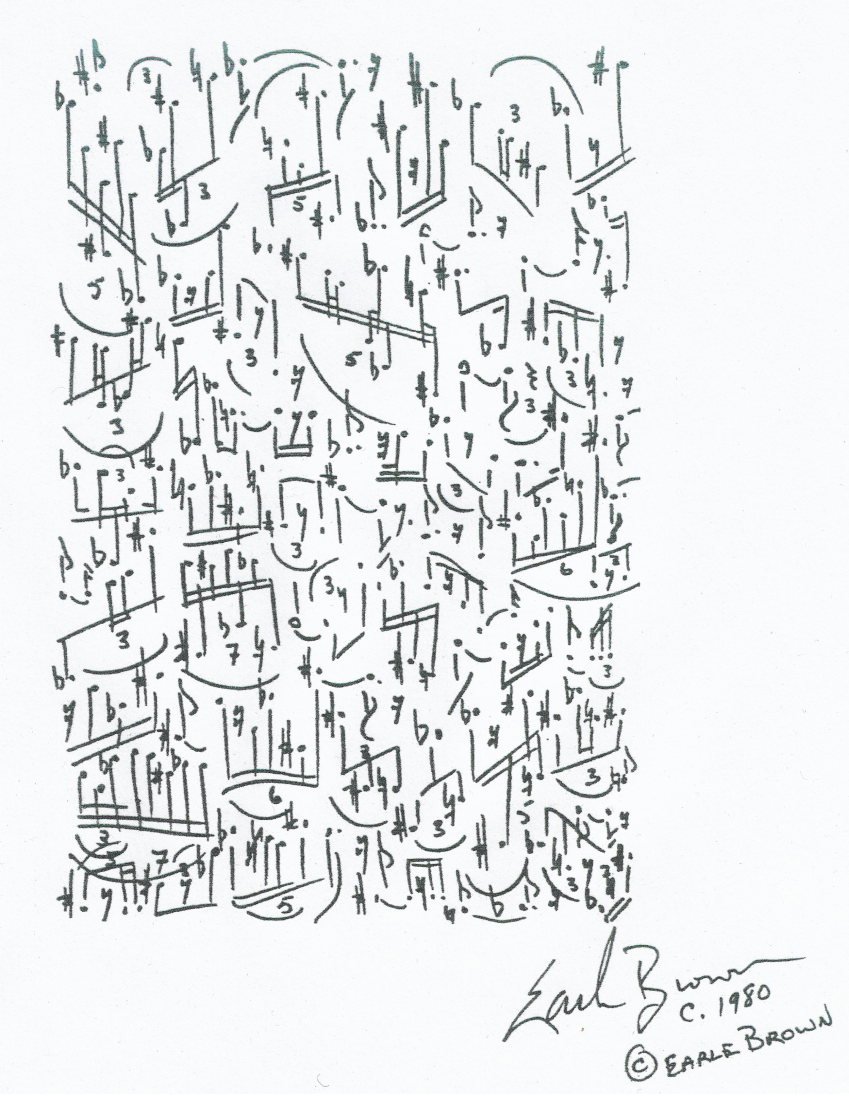

Fig. 5.3 Earle Brown, *Folio II,* (1980)

Black is not alone in using the term ‘purely graphic’. In a pilot study undertaken to prepare for this thesis, research participant Tom Blancarte uses the term to describe graphic scores in which methods of graphic interpretation and score performance are determined solely by the performer (Wimbish, 2020, par. 14). And though he does not use the term, Fell’s definition of a graphic score coincides with descriptions of ‘purely graphic’. This has a significant impact on what Fell considers to be a graphic score.

Fell says that if a graphic composition contains elements of specific reference, he does not consider it a true graphic score.

> **SF:** As soon as you add that specificity, you immediately force a relationship with that material upon the performer, and a relationship which is much more explicit and comprehensible than any relationship with a […] purely visual abstract image, so that […] you either, did you play those? Did you *not* play them?

For Fell, elements of specific reference divest a graphic score of its most crucial feature: that the notations themselves have no pre-established musical meaning. This definition of a graphic score excludes works with original graphics that have been assigned meaning by the composer as well as scores containing notations and symbols that exist in other notational systems. As an example, Fell mentions compositions that blend traditional and graphic notation. He states that ‘when the graphics are embedded in the [traditional] notation […] it ceases to be a graphic score’. Moreover, ‘specificity’ as Fell defines it need not be limited to the inclusion of

traditionally notated music. Scores comprised entirely of graphic notation are not considered graphic scores if the composer incorporates specific reference as part of the compositional process.

> **SF:** I made a piece for the Huddersfield Festival about seven or eight years ago, one of which was basically using only graphic symbols, but in, in a conventional score timeline on a conventional stave. Um, and I wouldn't call that a graphic piece, although it has nothing but graphics in it. It was partly an experiment just to, just to use graphic, symbols in a thematic way and develop them in a similar way to how you might use notated material. But, for me, if it gets that specific, then it's not really a graphic score in the sense I understand it.

Two factors contribute to Fell not considering this piece a graphic score. The first is the presence of a musical stave. The inclusion of traditional notation is significant, as it 'force[s] a relationship with that material upon the performer'. Thus, regardless of how this notation is used, it can never be conceptually separated from its function within the system from which it derives. The second is that Fell's graphic notations operate along a 'conventional score timeline' with temporal procession notated from left to right along staves ordered from the top to the bottom of the page. That the notations apart from the staves are entirely graphic is irrelevant. The use of traditional notation and a predetermined method of reading the notation leads Fell to not consider the piece a graphic score.

Within the confines of this study and from my own experiences as a musician, Fell's definition of a graphic score is atypically exclusionary. As discussed earlier, Black's view of graphic composition does not exclude

traditional notation or specific performance directives. Lisa Mezzacappa states that her graphic compositions typically contain a 'key' as well as 'pitch class sets and graphic symbols and images' (fig. 5.4). Likewise, Guy's graphic compositions contain traditionally notated material as well as a system of rules which govern performance (fig. 5.5). The emergence of such contrasting approaches to graphic composition highlights the variety of perspectives amongst practitioners. This suggests why Lindberg, whose views on graphic scores are inclusive to specific reference and predetermined performative instruction, is keen to determine a definition of 'graphic' at the onset of our interview.

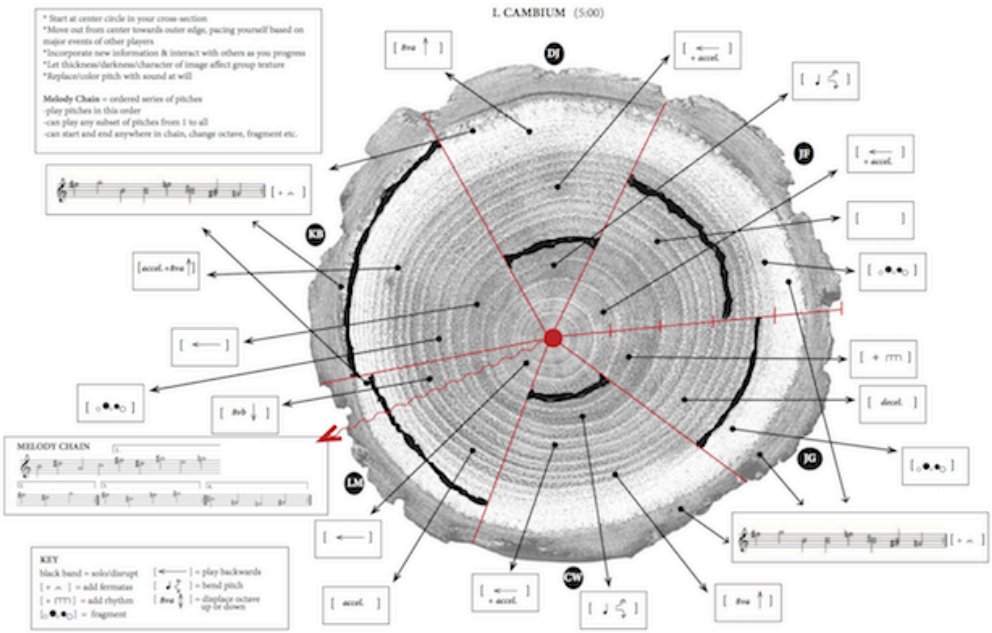

Fig. 5.4 Lisa Mezzacappa, *Organelle.* Mvt. I. Cambrium, (2017)

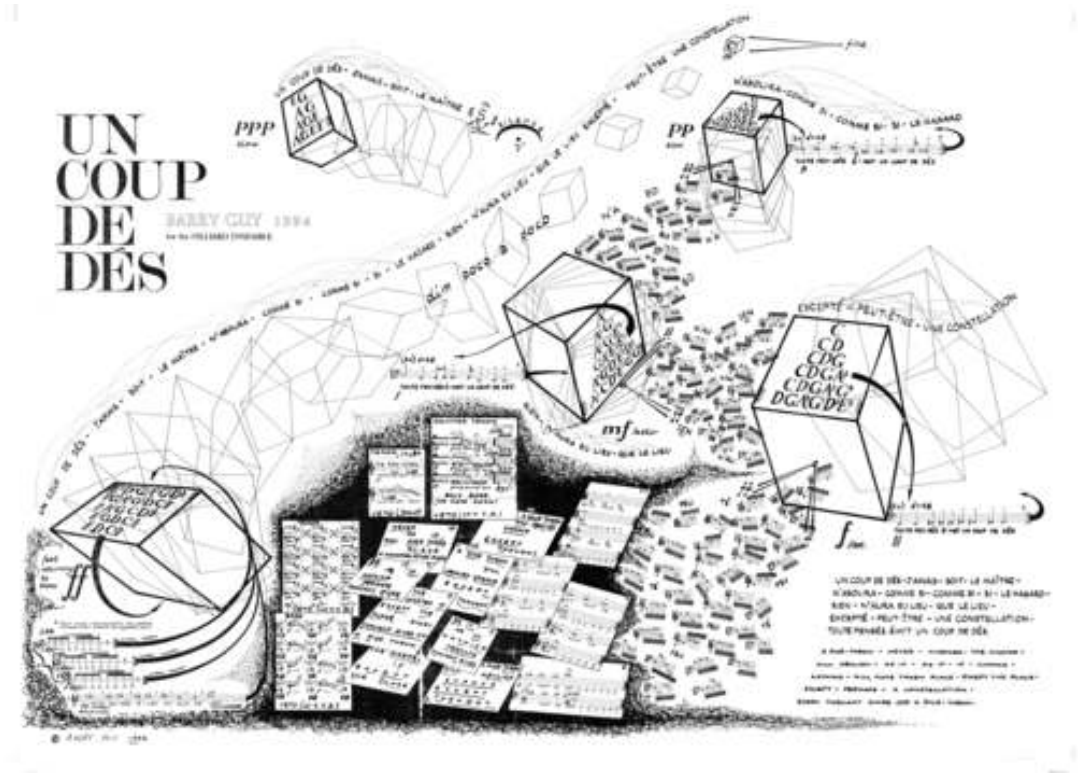

Fig. 5.5 Barry Guy, *Un coup de dés,* (1994)

> **JL:** So I would still say as long as long as we're dealing with those twelve pitches and those staves, we're in, and this is my own designation, we'll call that traditional, if that's alright?
> **RW:** Yeah.
> **JL:** And then, beyond that, when we start moving into interpretation of colours, shapes, words, only words, not like dynamic markings –
> **RW:** Right, yeah.
> **JL:** - uh, those are the things that I would consider .. graphic.

Though Lindberg is an accomplished musician and has long-lasting professional associations with composers who use graphic notations, he still finds it necessary to establish the topic of our interview. That Lindberg, and indeed every participant, has their own unique definition of 'graphic score'

indicates that graphic compositions are not defined globally by codified performance practice, but by individual practitioners and communities.

Having established the category of purely graphic through data analysis, I created three pieces using this compositional model. The first two, *Imachinations* (fig. 5.6) and *Le temps est écoulé!* (fig. 5.7), adhere to the definition of purely graphic established by this thesis. Apart from two quavers and a crotchet in *Imachinations*, they contain no reference to traditional notation, incorporate no system of fixed reference, nor are there any notational meanings or methods of performance predetermined by the composer.

Fig. 5.6 Russell Wimbish, *Imachinations,* (2018)

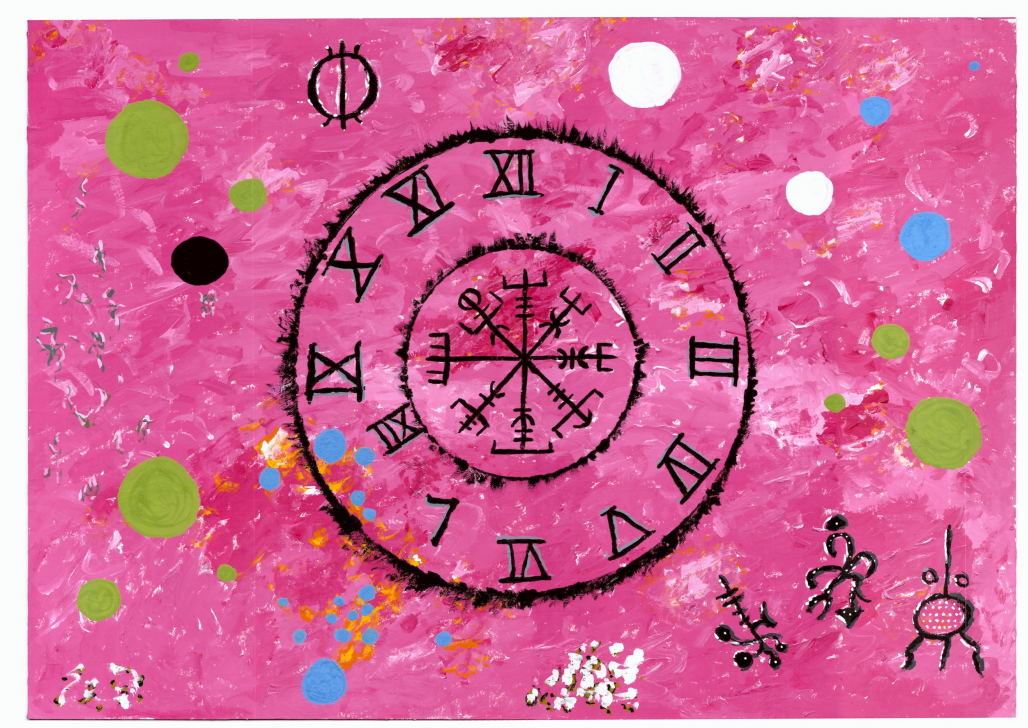

Fig. 5.7 Russell Wimbish, *Le temps est écoulé!,* (2018)

The third purely graphic score, *A.B. W.L.S.* (fig. 5.8), is different. This score represents an attempt to create a work that combines the interpretive freedoms of a purely graphic score whilst introducing explicit composer instruction and elements of traditional notation. To begin, the graphics have predetermined meaning. As indicated by the accompanying key, each colour represents a non-musical term (creativity, intensity, unity, vitality, wisdom) that the performer is to musically interpret as they wish. Moreover, it contains three traditional five-line staffs in either treble or bass clef. Though the staffs accommodate graphic contours rather than traditional notation, these graphics do have predetermined meaning. As stated in the key, the contours

indicate that the performer must improvise melodically. Based on data from Black and Fell, these characteristics potentially exclude the piece from being purely graphic. However, the interpretive liberties of *A.B. W.L.S.* as set by the composer adhere to definitions of purely graphic. Though graphics are predefined, their meanings are intentionally subjective as to interpretation. The performer also has no compositional restrictions as to how they may temporally proceed throughout the score. For these reasons, I consider this piece purely graphic, though I accept that other practitioners might disagree with this classification.

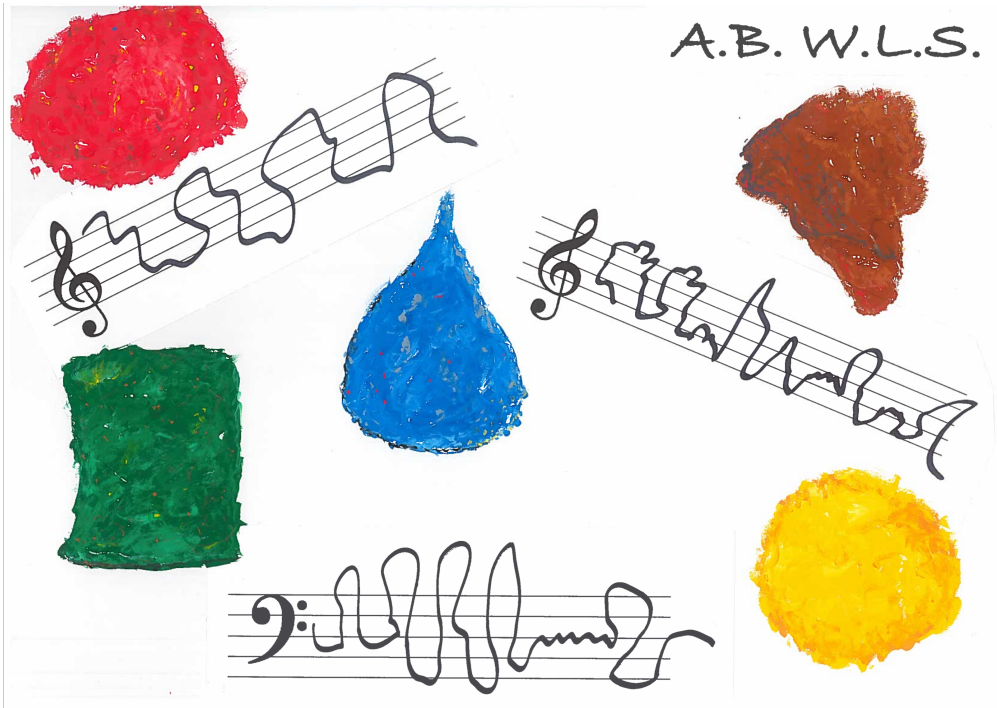

Fig. 5.8 Russell Wimbish, *A.B. W.L.S.,* (2018)

5.2.2 Combining improvisation and composition

Participants state that graphic scores combine composition and improvisation. Guy describes his graphic scores as 'hybrid piece[s]' that combine 'improvisation and composed music'. Black states that 'if you have a continuum from totally notated to graphic score to improvisation, it's a fluid kind of thing, and the graphic score kind of inhabits this middle ground between the two'. Fell believes a musician must use the 'process and power of improvisation' to perform a graphic work but still 'play in a way which reflects the disposition or density or, movement within the graphic image' created by the composer. And Mezzacappa states that 'improvisation is a through-line' for all her compositions. These quotes show that each participant views improvisation and formal compositional processes as key features within the diverse realm of graphic composition.

Apart from *Maria Ave.* (see section 5.2.3), my creative output incorporates formal compositional structures and improvisational processes. The use of improvisation is discussed fully in chapter 6. Compositional structures are discussed throughout this thesis in relationship to analytical findings. Nonetheless, it is important to acknowledge that I have intentionally designed my creative output to reflect this data.

5.2.3 Graphics in non-graphic works

As touched upon in section 5.2.1, participant responses indicate that not every composition containing graphics is considered a graphic score. Fell states that there are 'scores which are very clearly music scores with some graphics in them'. For clarification, he cites 'post-war experimental notation' traditions as exemplified by composers Krzysztof Penderecki (1933-2020) and Karlheinz Stockhausen (1928-2007), both of whom Fell mentions by name. These composers are noted for using graphic notations representing chromaticism, extended instrumental techniques and aleatory practices which are integrated into traditionally notated works (fig. 5.9). Though both composers use graphic notations, Fell does not consider them to be graphic scores. What then is the critical difference? And isn't Fell particularly stringent in his definitions of what may be considered a graphic score? Fell's definition aside, musicological consensus is that the inclusion of graphics and non-traditional notation does not automatically constitute a graphic score. Stone (1980) notes that 20th century composers increasingly used new notations to represent temporality and extended instrumental techniques, many of which have become standardised (pp. 96-99). An example of this would be Earle Brown's time notation (fig. 5.10), which he used for works such as *Music for Cello and Piano* (1955) and *Four More (for David Tudor)* (1956).[3] But what then do participants see as the critical delineation between

[3] As noted by Morton Feldman, by 1966, Brown's time notation had been adopted by other composers to the point where it was in common usage (Feldman, 1966/2000, p. 43).

a graphic score and scores that contain graphics? To explore this question, it is helpful to examine Guy's thoughts concerning his non-graphic compositions that contain graphics.

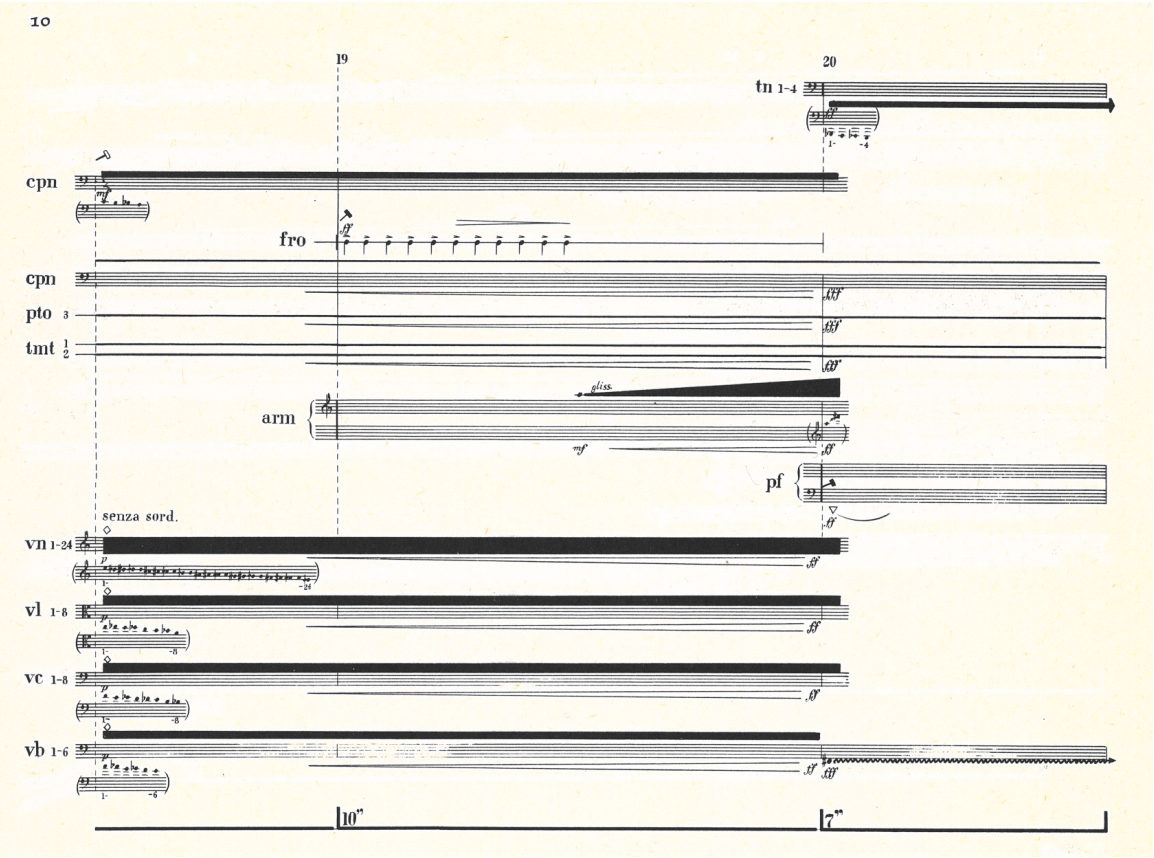

Fig. 5.9 Krzysztof Penderecki, *De natura sonoris No. 2,* p. 10, (1971)

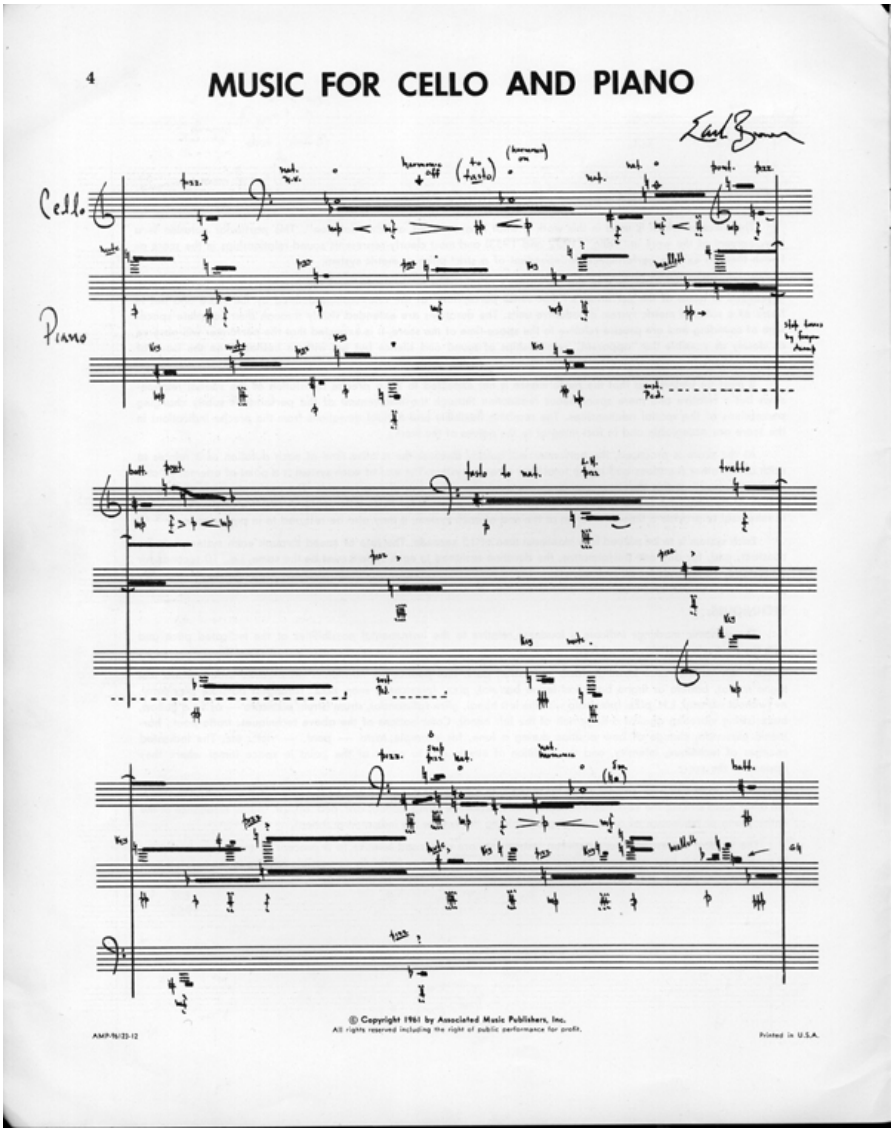

Fig. 5.10 Earle Brown, *Music for Cello and Piano,* p. 4 (1955)
Reproduced from http://www.earle-brown.org/works/view/19

In addition to graphic scores, Guy's compositional output includes symphonic, chamber and solo concert pieces. Of interest to this discussion are concert works containing graphic notation that Guy does not consider graphic scores. Guy's description of *D* (1972) illustrates how a graphic piece may be differentiated from a non-graphic work and how graphics may function within the latter.

When I refer to *D* as a graphic score, Guy states that it 'wasn't really a graphic score at all' and describes it as 'a through-composed score'. The distinction of being through-composed is significant to understanding why he does not consider it a graphic piece. Guy describes his graphic scores as 'flexible, and I mean *totally* flexible' in the sequential application of pre-composed material. As an example, he mentions that *Bird Gong Game* 'can start *anywhere*' within the score and that the selection of each pre-composed section is 'based upon on what the improviser does or does not do'. In this way, the rigid structure of a through-composed piece differentiates it from the flexibility of a graphic score. However, this not the only distinction. As Guy's description demonstrates, the function of the graphics in *D* also differentiate it from a graphic score.

> **BG:** So, you could say that that is a graphic gesture [holds up drawing]. I don't indicate each pitch. I showed the beginning note; I showed the end note. The idea is to indicate a start and finish with the bridge between encouraging the musician to negotiate a topological terrain.

This graphic, though imprecise, contains many specific directives. Guy gives the beginning and ending notes, while the performing musician traverses the contour of a multi-directional *glissando*. Additionally, *D* contains graphics that 'showed the position of the bow on the string [moving from] *tasto* through […] to *ponticello*' resulting in 'pitches and harmonics that would emerge [from] this kind of gesture'. The piece also contains graphics indicating 'three types of finger pressure on the string', which, when combined with other graphics for vibrato and bow position, produced 'ethereal' timbres not represented by

the traditional notation. In these ways, *D*'s graphic notations represent gestures that combine specific ideas with a performance process that is, by nature, imprecise. How then does this notation relate to determining what is a graphic score?

As previously stated, Guy defines graphic scores as structural frameworks combining composition with improvisation. However, the orchestral musicians performing *D* are not asked to improvise. They are instead performing a notation designed 'to give enough information to give them the confidence to do what […] I wanted'. He states that 'you can actually give quite a lot of material which […] can be interpreted by a classically trained musician'. Of significance is the implication that the 'classically trained' musician is typically not an improviser, an idea that is recurrent throughout our interview as well as in studies on improvisation by MacGlone and MacDonald (2017, p. 284), MacDonald and Wilson (2005, p. 408) and Lewis, (2002, p. 102). Guy seems to further corroborate this idea by referring to graphics within his through-composed concert works as representing not improvisations, but 'limited freedoms'. As these graphics are not emblematic of improvisation and are embedded within a through-composed framework, *D* does not meet the criteria for being a graphic score.

Returning to my creative output, *Maria Ave.* represents an attempt to better understand Guy's concept of limited freedoms and how graphics may

function in a non-graphic work. The structure for this piece is through-composed and, apart from mm. 39 – 49, traditionally notated (app. 12) (fig. 5.11). For the graphics, each coloured symbol represents not improvisation, but a musical texture generated by an extended technique that is explained in an accompanying key. The performer performs these techniques in accordance with the notational directives, which, per Guy's description of *D*, may not be as precise as phrases rendered in traditional notation. Temporally, entrances are indicated but not precisely notated. The performer therefore has 'limited freedoms' in that they may base the exact performance of these graphics upon their own judgement rather than a specific and unambiguous notational directive. In these ways, I use graphics in a non-graphic work to communicate specific ideas that nonetheless may be applied with a limited degree of improvisational agency.

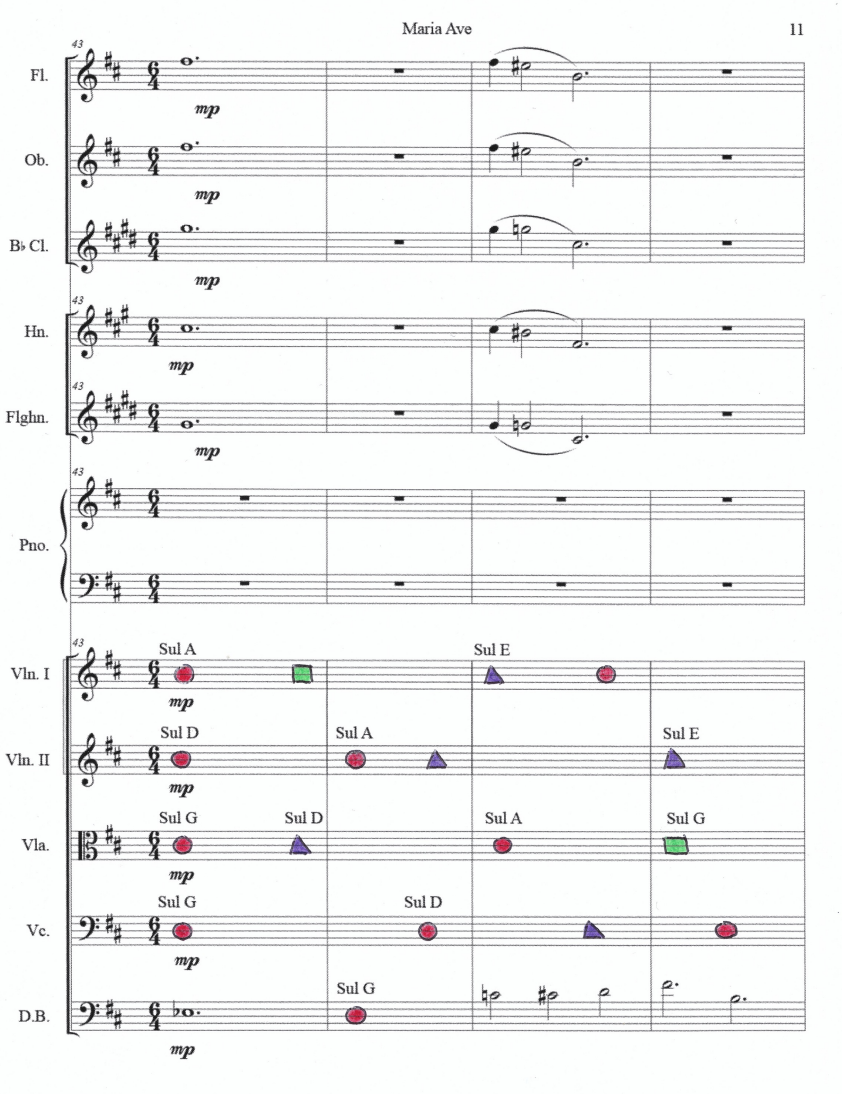

Fig. 5.11: Russell Wimbish, *Maria Ave.,* bars. 43-46, (2018)

5.3 Combining determinacy and indeterminacy

Participant responses indicate that, structurally, graphic scores exhibit a unique interdependency between those compositional components that are fixed by the composer and those that may only manifest during performance. To examine these findings, I reintroduce the terms ‘determinate’ and ‘indeterminate’. Henceforth, compositional structures set by the composer prior to performance are referred to as determinate. Improvisational

components and processes within a composition that may only be realised through performance are referred to as indeterminate. Each are discussed separately, beginning with determinacy.

Participant responses indicate that determinate structures may fall within the following four categories:

1. Compositional structures
2. Performative processes
3. Meaning of graphics
4. Planned improvisation

Each of these categories represents a compositional component that is pre-determined by the composer. The first category includes compositional structures such as pitch, tonality, rhythm, tempo, duration, amplitude and instrumentation. Performative processes are directives set by the composer that determine how a performer navigates the composition itself. Meaning of graphics refers to graphic notations whose meanings are established by the composer. Lastly, planned improvisation refers to the inclusion of improvisation as a formal, fixed compositional element. Thus, while improvisation may be thought of as an indeterminacy, its deliberate inclusion into the compositional process is determinate. The following table illustrates participant responses in these categories (table 5.2).

Participant	Composition	Category	Description
Robert Black	*59 ½" for a String Player* (John Cage, 1953)	meaning of graphics	'You've got all these symbols for where the bow goes.'
Barry Guy	*Bird Gong Game* (Guy, 1992)	compositional structures (duration)	'[…] the duration of the piece was to be between fifteen and eighteen minutes.'
Barry Guy	*Bird Gong Game* (Guy, 1992)	planned improvisation	'[The soloist] starts playing, and then I build the piece around them.'
Lisa Mezzacappa	unspecified	compositional structures (pitch, tonality); meaning of graphics	'So maybe there are pitch class sets and graphic symbols and images that represent texture or something like that.'
Lisa Mezzacappa	unspecified	meaning of graphics; performative process	'It took a half an hour for people to understand what the symbols meant or how it [the score] was to be navigated.'

Table 5.2 Determinacy in graphic composition

Table 5.2 demonstrates how determinacies may be used in graphic composition. It also suggests that, for graphic scores not deemed 'purely graphic', the composer plays a substantial role in determining the sounding outcome of a graphic composition. Of significance are the examples of tonality and structural form being determined by the composer. As these qualities often serve as the most critical elements of Western musical analysis (Cook, 1994, pp. 11, 16-18), it may explain why the identity of a graphic composition is often associated with its determinant structures. Lindberg's description of Wadada Leo Smith's *Mount Kilimanjaro (with peace and love for John Lindberg)* (2013) illustrates this point.

> **JL:** The way he [Smith] presents that [his compositions] is kind of like the ultimate challenge to an improvising artist, if you're really gonna stay within the compositional construct and, statement that he, that are clear. That doesn't change. I mean, there really is,

> you know, Mount Kilimanjaro. You know, it's Mount Kilimanjaro every time, but it's like the difference between seeing it at dawn and seeing it at sunset or seeing it at noontime, or seeing it from a thousand miles away, or standing on the top of it. You know, that could be the vastness of difference in the interpretation […] Yet it would all be Mount Kilimanjaro, right?

Though indeterminacies shape the realisation of a graphic score, it is the determinate factors as set by the composer that ultimately establish the identity of the composition.

Moving to indeterminacy, it is necessary to discuss how indeterminate processes relate to structure and performance. First, though a graphic score may contain pre-composed material, the implementation of this material can be indeterminate. In Guy's *Bird Gong Game* (fig. 5.12), the conductor cues pre-composed modules in response to a soloist.

> **BG:** So in a way we have a three-way split: you have the director, and that was me with the flash cards; we have the ensemble, which respond very much to *my* instructions, but my instructions are based upon on what the improviser does or does not do.

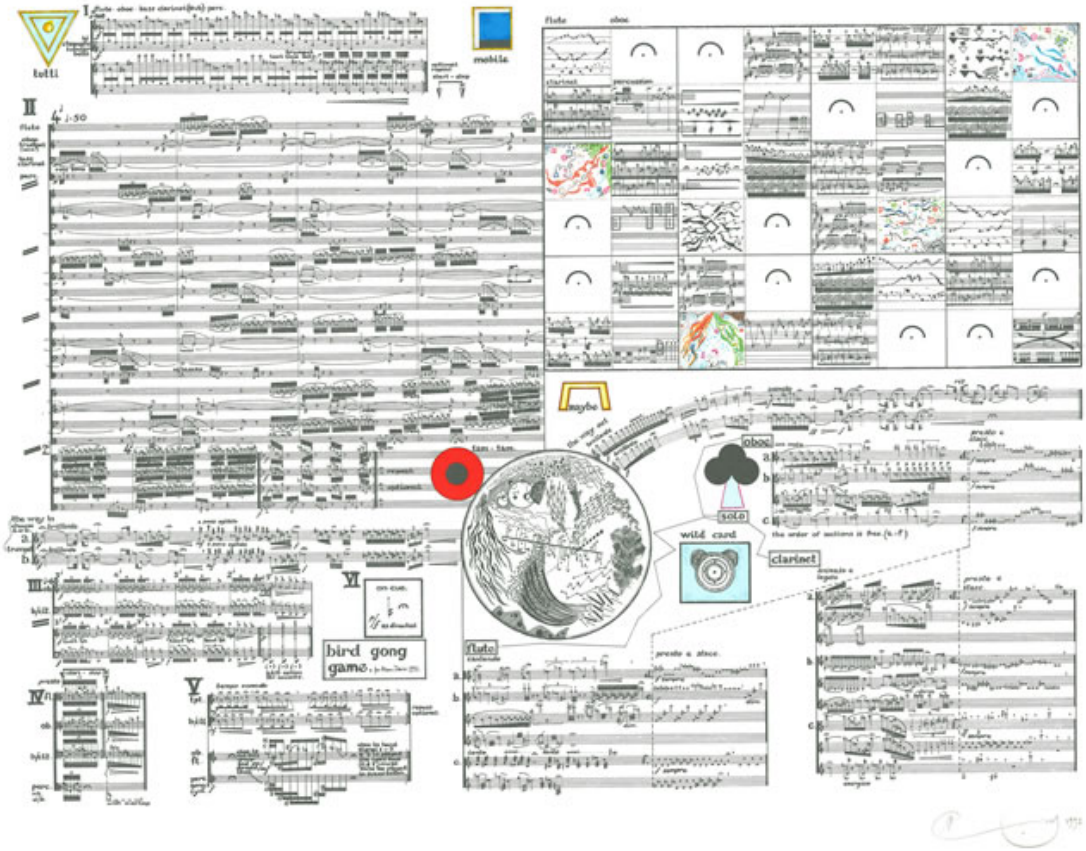

Fig. 5.12 Barry Guy, *Bird Gong Game,* p. 1, (1992)

In *Bird Gong Game*, the formal structures of the composition are indeterminately performed. Guy says the piece may 'start *anywhere*' and that the soloist 'encourages' a 'different […] selection of modules' in each performance. Similarly, Lindberg states that, for his graphic composition *Journey Platz* (2007), he began performing the pages 'in a random way rather than in the linear way that I originally had put it together'. An important distinction here is that Lindberg, in re-ordering the pages, is not reacting improvisationally to a concurrent sounding event, but is using, in his words, a 'creative improvisational manipulations of the actual compositional material' to achieve 'different outcomes'. In this way, Lindberg indeterminately orders

the pages prior to performance to create a new determinate structure. These examples demonstrate how formal structures may be performed indeterminately. However, more possibilities for indeterminacy arise when examining the point in which formal structures intersect with indeterminate performative process.

Both Mezzacappa and Fell state that how one navigates within the formal structures of a score may be indeterminate. Mezzacappa says one could 'turn the score upside down and decide everything means the opposite thing'. By repositioning the score's physical framework, the determinate features of a score, i.e. the notations, are indeterminately manipulated by the performer.

Two pieces within my creative output were created specifically to demonstrate how determinacy and indeterminacy can blend to create a unique compositional makeup. The first, *Graphic Piece for Solo Bass* (app. 8), was modelled after Guy's description of determinate and indeterminate confluence in his composition, *Bird Gong Game.*

> **BG:** It's always interesting because each soloist gives it a different colouration and encourages a different type of articulation or selection of modules. However, the musical signature is consistent because of the fixed notation material set against the soloist.

To accomplish this in my own work, I first developed determinacies that would enable a consistent 'musical signature'. This was done by making the piece instrument-specific, having it contain traditionally notated musical

phrases that often, though not always, indicated tempo and dynamics, and creating a specific performative process that was explained in an accompanying key. For indeterminacy, I created graphics with no predetermined meaning that are to be freely interpreted by the performer (fig. 5.13). Though some graphics referenced traditional notation, they were devoid of any fixed reference. In addition to the graphic notations, the performer had agency in determining how to navigate the score. All but four modules could be repeated as often as desired and allowed the performer to choose the next module. Moreover, select modules (signified by a red dot) indicated that the performer could choose from and perform traditionally notated phrases. Because of these performative choices, the duration of the piece was also indeterminate. In these ways, determinacy and indeterminacy worked together to give the composition a recognisable identity that nonetheless could have extreme variances in performance.

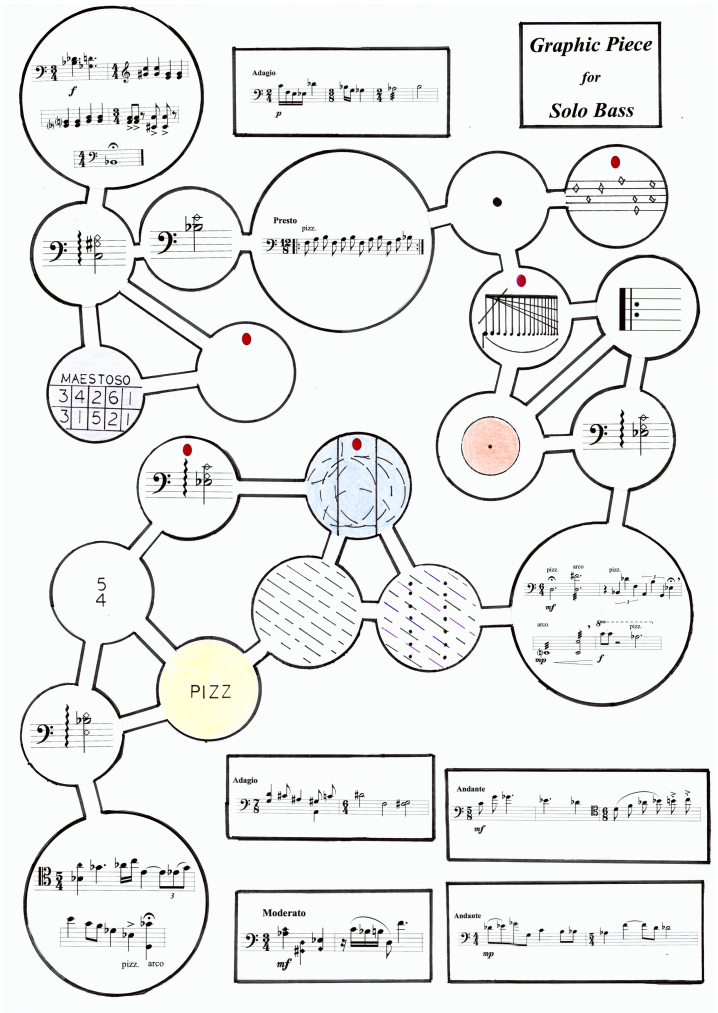

Fig. 5.13 Russell Wimbish, *Graphic Piece for Solo Bass,* (2019)

The next piece, *Duo for Melodic Improvisers*, consists entirely of circles representing the degree to which the material one performs functions as either melody or accompaniment (app. 7) (fig. 5.14). Nonetheless, because of its strict performative regulations, it does not conform to participant descriptions of purely graphic scores. To begin, it is through-composed. The duration of the piece is also determinate, as are the temporal points in which performers alternate between dominant and supporting roles. Additionally, the performers are specifically asked to improvise melodically and avoid

textural playing. The only indeterminacy is the improvisation itself. This is significant, though, as it includes all tonal and rhythmic material as well as amplitude. In creating this piece, I show that an entirely graphic work can combine strict determinacy with a framework in which the performers improvisationally determine the totality of its sonic parameters.

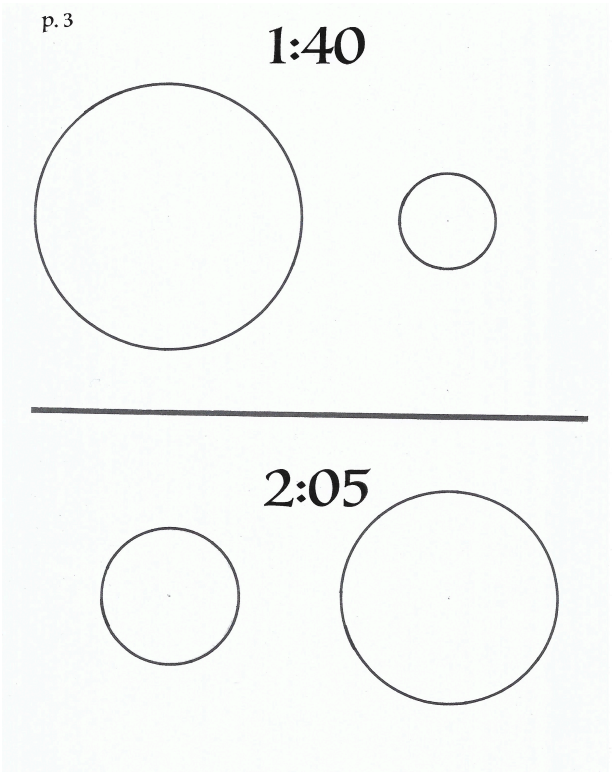

Fig. 5.14 Russell Wimbish, *Duo for Melodic Improvisers,* p. 3, (2017)

5.4 Providing a compositional solution

Data indicates that graphics offer distinct compositional advantages over traditional notation. For Mezzacappa, graphic scores are a practical way to communicate musical information. She states that using graphic scores as a

composer ‘arose out of a need to rehearse and communicate textural material’.

> **LM:** I think it emerged from a, a place of, I, I don’t, couldn’t imagine how to notate this ensemble texture, or we need a short-hand as an ensemble for some texture we’ve worked out, and something graphic ended up being, one of the solutions to that.

Mezzacappa’s language reveals much about how she uses graphic notation. The phrases ‘emerged from’ and ‘couldn’t imagine how to notate this’ imply that she turned to graphic notation after exhausting the representational possibilities of traditional Western musical notation. Likewise, Guy, in discussing *D*, states that graphics may have advantages over traditional notation.

> **BG:** So, in certain places a gesture or flourish from the individual performer will provide the sonic energy I was seeking. To notate every nuance would be counter-productive to the more intuitive approach.

The sounding qualities desired for this piece are better facilitated though graphics representing physical gesture than through standard notational practice. While it is possible to notate these sounds traditionally, Guy says he prefers the ‘intuitive approach’ of the performer. For this reason, he cedes ‘limited freedoms’ to the performer to achieve the desired sonic attributes.

In addition to offering certain advantages over traditional notation, participants state that graphics can enable unique forms of interaction. To

illustrate this concept, Lindberg expounds on Wadada Leo Smith's graphic score, *Billie: The Queen of Holiday* (1994).

> **JL:** And as *specific* as Wadada's score was, and it's incredibly specific, the, every interpretation was, on a volatile level of difference as to length, how everyone interacted and, again, it just kept bringing to my mind, 'I *like* this, because every time out, it, it forces you into a level of creative thinking before you play, and then creative reaction while you're playing, that is really different, and perhaps beyond, what you encounter with traditional notation.'

Though this description is non-specific in terms of how the musicians interacted, it demonstrates that Lindberg believes Smith's notations provoke spontaneity in performance. It is this combination of determinacy and improvisational interaction that Lindberg feels is an advantageous characteristic of scores using graphic notation. However, it is pertinent to consider that not every performer shares Lindberg's enthusiasm for this process. As the next emergent theme suggests, performer attitudes as well as abilities are crucial to graphic compositional practice.

5.5 Influence of the performer

Participant responses indicate that composer knowledge of the intended performer is common in graphic composition. Guy says that 'when I'm working away at the drawing board, [I] consider all of the possibilities and the way people play: the particular *aspects* of each player .. their strengths, their weaknesses, their desires'. Per Guy's statement, it is important for the composer to have familiarity with the abilities of the performer, as this directly

affects the realisation of a composition. As Mezzacappa states, 'if you're writing for improvisers, on a certain level you've got to trust them that they're gonna take this somewhere and that it's gonna be beautiful and surprising'. These statements imply that not only should the composer be acquainted with the musician's performative style, but that specific performers are essential to the compositional process itself.

That specific performers are integral to the act of composition challenges the Romantic ideal of the composer as the sole originator of a work. Per sociologist Jason Toynbee (2012), 'Romantic discourse asserts that music comes from within and is a direct product of the psyche of the creator … it treats creation as a mystical process, and creators as a select band of individual geniuses' (p. 162). Toynbee asserts that this idea of creativity has survived the Romantic era and influenced discourses on non-classical music such as jazz and rock (Toynbee, 2012, p. 163). This research therefore challenges the hegemonic Romantic ideal by showing how participants integrate performer abilities and creative contributions into the compositional process. Of course, this has been noted in other studies of indeterminate and improvisational music. As chronicled by Iddon (2013), David Tudor's extreme technical and interpretive abilities had a profound influence on the music of John Cage. Likewise, the Scratch Orchestra's musical egalitarianism, which did not limit performance participation to those with proper conservatory training, would influence Christian Wolff's 1960's compositions (Hicks &

Asplund, 2012, pp. 59, 63). And as stated by Ellington himself, new members of the Duke Ellington Orchestra inspired Duke to write songs and arrangements to showcase their talents (Ellington, 1973, pp. 163-164) Each of these examples attests to this phenomenon. However, as the findings of this thesis indicate, performer contributions to composition are not limited to performative abilities.

As the following quote by Mezzacappa illustrates, performer attitudes are of critical concern to the graphic composer.

> **LM:** The longer I play music and the more I lead projects, the sort of personality of the individual becomes much more important to me than the instrumentation, so, who they are as an improviser, and also who they are as a person in your ensemble: are they generous and patient and open to ideas, are they into workshopping and experimenting, that kind of a mind-set as an artist is really interesting to me and I like, in that case you can be very collaborative with the musicians that you're composing for and that you're kind of assembling into projects.

In the above quote, Mezzacappa mentions 'workshopping' ideas collaboratively in rehearsal and 'experimenting' with them as a group. Though her contributions may be dominant, the compositional process itself is collective. As Mezzacappa values this approach, she seeks musicians who are open to the shared experience of constructing the sounding elements for a graphic score.

In addition to collaboration, Mezzacappa's statements may indicate an additional reason to consider performer attitudes. Though we do not discuss funding issues, economic resources and payment are often limited for new and experimental music (Eastburn, 2018, p. 142; Borgo, 2002, p. 175-176). As a result, finding competent musicians to perform new music may become difficult because there may be limited funds with which to compensate them. Furthermore, collaborations may be beneficial in the early stages of a successful musical entrepreneurship, as resources, be they financial, intellectual, material or labour, can be shared amongst the contributors (Baumgardner, 2015, par. 2; Lewis, 2008, pp. 88-89). Looked at this way, performer attitudes are important not only to ensure a high-quality performance, but to help ensure that a performance can indeed take place.

Consideration of the performer's attitudes and abilities was influential to my creative output. Before composing *Maria Ave.*, I attended a rehearsal of the orchestra that would give the first reading (a university reading ensemble). After assessing the ensemble's skill level, I spoke with the director about the group's experiences with new music and improvisation. As most members had limited experience with either, I decided the piece should explore the use of 'limited freedoms' and graphics in a non-graphic work rather than relying on improvisational processes. Therefore, the skill level of the group became a crucial component in how I used graphic notations.

Though not written for a specific ensemble, the skill level of potential performers influenced the construction of my final graphic composition, *Machrie*. For this piece, I wanted to create a graphic chamber work that combined free improvisation with traditionally notated passages that I as a conductor could spontaneously select and repeat. When writing a piece involving improvisation, Guy states that 'it's knowing the players I find very important' and that he should be 'well aware of what improvisers can do with the music'. By knowing how the performers will potentially react in an improvisational situation, the Guy believes chances of a successful performance increase. However, I did not have the benefit of composing for specific people. The challenge became composing a structurally flexible piece that incorporated improvisational activities while simultaneously accommodating the potentially wide range of abilities of unknown performers.

My solution, based on Guy's description of *Bird Gong Game*, was to construct a graphic score that combined traditional and graphic notation, used a conductor who could choose to improvise, and included a musician improvising on electronics (app. 11) (fig. 5.15). By adding the improvising electronic musician, I could facilitate the desired improvisation and yet have a work performable by non-improvisers. To further give the piece an improvisational feel, I included 'limited freedoms' that could be performed by non-improvisers. This was shown in 'Circle 5', in which performers, given pre-determined rhythms, could select between pitches and graphics representing

instrumental techniques (fig. 5.16). I also designed *Machrie* to accommodate musicians of dissimilar improvisational abilities. As the conductor could choose members of the ensemble to improvise, the conductor should select only those members comfortable or adept at doing so. Therefore, the conductor should communicate explicitly with the ensemble members about whether they wish to improvise. In addition to the potential abilities of the ensemble, I considered those of the electronic musician. My personal experience suggested that many electronic artists improvise. To accommodate a range of abilities, the compositional directives for the improviser were non-specific and only suggested the amount (sparse) and character (ambient) of the improvisational activity that should accompany the determinate material. Again, explicit communication of performative expectation between the conductor and improviser should be essential to ensure that the electronic musician would be comfortable in their role. In these ways, I considered the performer when constructing *Machrie*'s compositional framework.

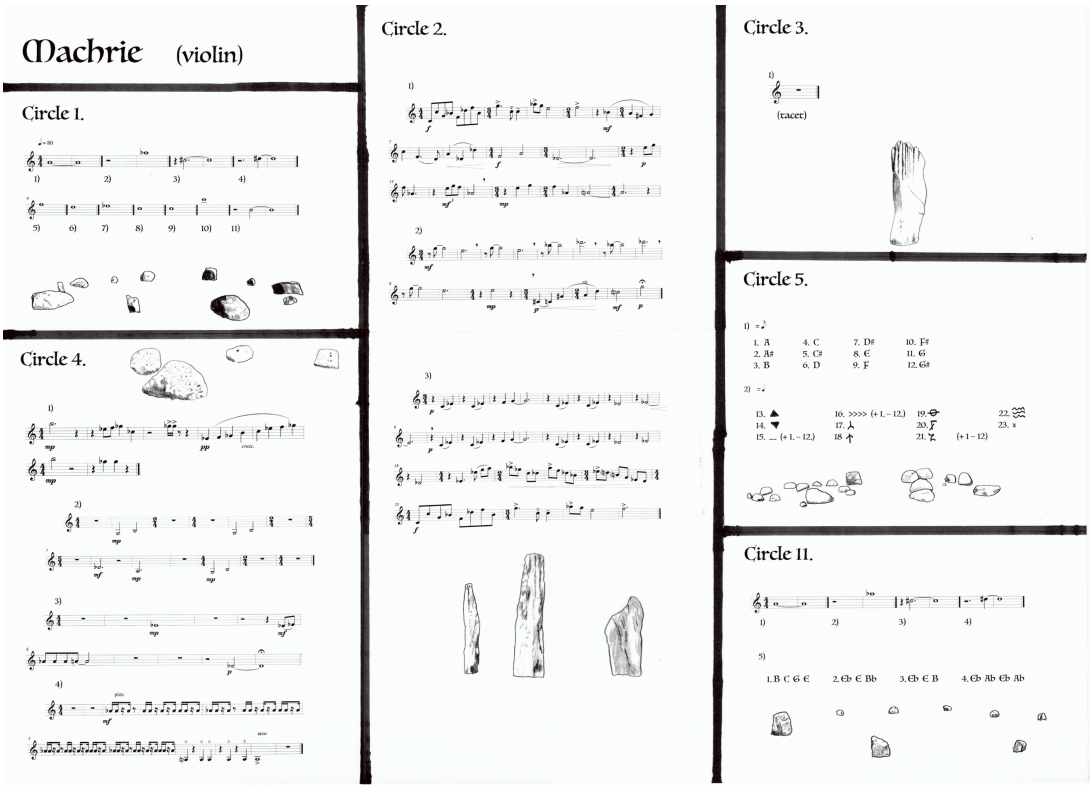

Fig. 5.15 Russell Wimbish, *Machrie* [violin], (2019)

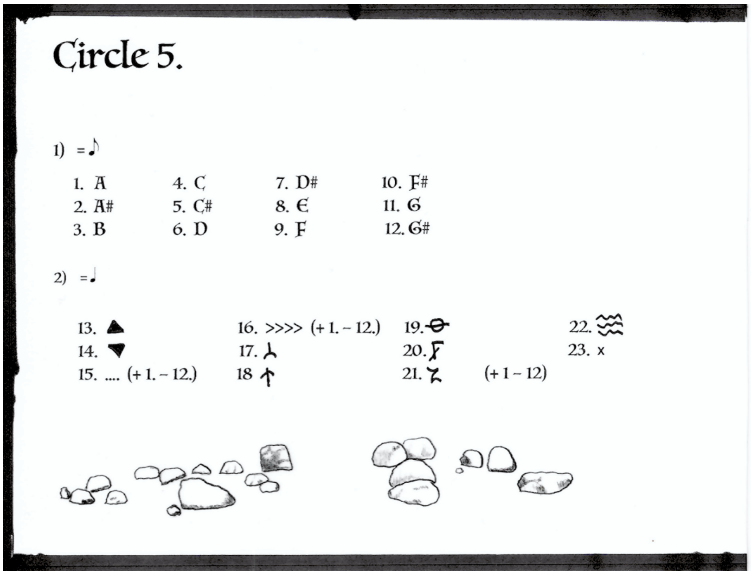

Fig. 5.16 Russell Wimbish, *Machrie* [violin], excerpt, (2019)

5.6 Social processes embedded within the score

In addition to influencing compositional methods, participant statements indicate that social processes may be integrated into the fabric of a composition. The following example from Lindberg describes how he uses collective memory in his graphic composition *Journey Platz.*

> **JL:** So there's a piece that was graphically scored for particular individuals [members of the String Trio of New York] based on a collective memory of history […] So it was like our thirtieth anniversary album, and so I wanted to write a piece that reflected the history. I couldn't see *any way* to do that with traditional notation or verbal descriptions, and it just dawned on me that, 'Yeah, you could really do this just by, like, reminding everyone of these different stories and putting them together in a certain sequence.'

The above quote describes how social processes are written into the score itself. The graphics reference events that occur throughout the group's thirty-year history. Therefore, Lindberg relies on oral history and shared memory as the factors that enable the score to be performed in accordance with the composer's idea of correctness. Lindberg elaborates with a specific example.

> **JL:** For example, one of the, [laughing] one of the designations in there it says 'Castle of Terror'. Now, nobody, you could, you know, wouldn't really know what 'Castle of Terror' means. But, going back to the earliest days of the String Trio, there was a, a, a [laughing] some horror movie that Vincent Price was in called *Castle of Terror* and there's a scene in it with these just high screeching strings that start really high and then descend and then they go higher and descend and there was like, five of these exhortations that do this. And, I was actually, I just took that, that was like *a piece* that we played back in the seventies. 'Let's play *Castle of Terror*, you know.
> **RW:** Ok.
> **JL:** It was kind of funny. 'Cause, I mean, there wasn't any score. It was just, we knew what it was.

The graphic ‘Castle of Terror’ represents a specific musical motif that, when explained, each member recognises. However, through this explanation, an important social interaction occurs. What is functionally a notational explanation becomes a moment for the members to engage in, per Lindberg, ‘reminiscing and reflection’. Even explaining ‘Castle of Terror’ to me, Lindberg is obviously enjoying the moment. He is laughing; he animatedly imitates the high-pitched string sounds. Shortly thereafter, he remarks how ‘there’s not that many groups that stay together with that kind of longevity’. These important social processes are encapsulated within the notation itself, so long as they are read by the intended reader.

5.7 Conclusion

In this chapter, I discussed participant thoughts on essential characteristics of graphic composition, variety within graphic composition, and how this affected my creative output. This analysis has indicated that, heterogeneity notwithstanding, graphic scores combine composition and improvisation. The participants’ emphasis on improvisation as a compositional component as well as a performative tool is significant, as previous studies by Iddon (2013), Hicks and Asplund (2012), Brown (2008) and Holzaepfel (2002) have focused on the non-improvisational performance methods of David Tudor. I crafted my compositions to reflect the data from this study. The compositions, therefore, were informed by graphic composition as a contemporary practice.

This chapter also has also shown that consideration of the performer is central to the process of composition. As discussed in section 5.5, participants state that, when composing, they consider the abilities as well as the attitudes of the performing musicians. Of course, contemplation of performer abilities need not be limited to graphic composition. Classical concertos have been written to accommodate the strengths and physical limitations of performers (Davidson, 2005, p. 616). However, the emphasis participants place on performer attitudes has revealed that social processes are highly influential to the practice of graphic composition. Again, this analysis does not claim that the composer's consideration of performer attitudes during composition is unique to graphic score practice, only that this practice is explicitly mentioned by participants. In fact, the impact of performer attitudes upon compositional process may be found in studies of composing educational music for young musicians (Wendzich & Andrews, 2018; Andrews, 2009) and composing for improvisers (Hunter, 2018; Blake, 2016). Acknowledging these precedents, graphic composition studies could serve as a model for research into the importance of social processes upon traditionally composed concert music.

Though participants perceive similarities across graphic composition, their answers have demonstrated a variety of perspectives on how to classify and even define a graphic score. Significantly, each participant voluntarily offered their personal definitions of a graphic score and took time to establish the

parameters for discussion. This indicates that graphic compositional practice is not codified but is instead socially defined by individuals and musical communities. Therefore, this research reveals the importance of examining the practices, perspectives and attitudes of musical communities when attempting to understand a musical composition or performance.

This study also examined how determinacy and indeterminacy function together in a graphic score. Though acknowledging the importance of indeterminacy and performer contributions in graphic score performance, participant statements indicate that they associate a work's identity with its determinate features. This emphasis on compositional process has had a big impact on my creative output. Rather than conceiving of my graphic output as simply structures for improvisation, I viewed my practice as a compositional study with which to explore different compositional techniques and frameworks. This included writing graphic works for specific instrumentations, combining determinacy and indeterminacy to create a recognisable compositional identity that could also facilitate drastically different interpretations, and assessing how determinate structures could be combined with the creative and often improvisational contributions of the performer.

Lastly, my creative output demonstrates the diversity of graphic compositional form as described by the participants. These include a) purely

graphic works, which contain little disambiguating directives for how to perform the notation, b) works that contain explicit composer directives, and c) non-graphic works that incorporate graphic notations. By creating a variety of composition frameworks, I could investigate multiple perspectives on the strengths, weaknesses and functions of different graphic compositional models. This has linked my creative output not to previous academic studies of graphic composition, but to a heterogeneity established through the praxis of different musical communities.

Chapter 6 Improvisation

6.1 Overview

This chapter examines the role that improvisation plays in graphic score performance. Looking at participant statements as well as my own creative output, this chapter evaluates improvisation not just as a compositional component, but as a process that is enacted during performance. It also investigates the social nature of improvised performance and looks at how improvised performance challenges traditional notions of a musical score and compositional ownership. This superordinate theme and its corresponding emergent themes are tabled below (table. 6.1).

Superordinate theme:	Improvisation
Emergent themes:	• The role of the improvising performer • Music as performance • Compositional limits to improvisational freedom

Table 6.1 Improvisation

The first emergent theme examines the role of the improvising performer in graphic score performance. It looks at participant descriptions of improvised performance and discusses how creative processes are distributed between the composer and performer. It also investigates why participants view improvisational ability as an essential quality of the graphic score performer. The next theme looks at Cook's (2012) concept of music as performance and how it relates to graphic composition. Per Cook, the resulting sounds of a musical work cannot be accurately predicted by the score. This theme

explores that concept and evaluates how improvisation can alter a graphic score's identity across multiple performances. The final theme investigates how composers attempt to influence and control a performer's improvisation during performance. It examines specific strategies for influencing improvisation and discusses why participants may find it difficult to ask a performer to change their approach to improvisation. Lastly, it evaluates participant statements on why the performer's autonomy in improvised performance is not absolute.

6.2 The role of the improvising performer

This emergent theme examines the improvising performer's role in graphic score performance. It builds upon findings in chapter 5 that discuss improvisational processes embedded within a graphic score's compositional framework. However, as studies on improvisation by both George Lewis and musicologist August Sheehy have shown, improvisation is more than a compositional feature or tool for performance; it is a vital part of lived experience that determines every-day decisions and interactions (Lewis, 2013, par. 4; Sheehy, 2013, par. 2; Lewis, 2002, p. 94). As such, it is necessary to critically evaluate participant statements on the unique contributions of the improviser in praxis.

6.2.1 Distributed creativity

This analysis indicates that creative agency is distributed between the composer and improvising performer. To illustrate that concept, Barry Guy describes a performance of *Bird Gong Game* featuring improvising soloist Agustí Fernández.

> **BG:** And then he found this wonderful chord, which built up from *pianissimo* to five *fortissimos*, and it was *the* most extraordinary moment. It just lifted the whole ensemble from the ground almost and it became something beyond what I could have imagined. So, you know, this is what can happen in these kinds of performances because the soloist can, in a way, dictate the direction of the piece.

In Guy's example, the improvising performer determines the direction of the piece and influences the conductor's selection of determinate material. Significantly, when I ask if it 'was the role of improvisation to add these unexpected moments', Guy states that, 'What I was thinking is that this was the *soloist* that actually added the *big* unexpected moment, which I could work with [as a conductor]'. Guy's response indicates that it is the soloist, not the process of improvisation, that enables performative success and structural flexibility.

The finding that graphic scores typically employ multiple creative agents within one work connects this research to the concept of distributed creativity. Realising that creative achievement is normally not the product of a singular effort, distributed creativity in music is a multi-disciplinary approach to

musicology that examines how the creative efforts of multiple parties contribute to producing an individual work. As Clarke and Doffman (2017) explain, 'Framed by conceptual developments in musicology, psychology, anthropology, sociology, computing and neuroscience, there is increasing recognition (long overdue, one might think) of the extended and distributed character of music's creative processes' (p. 2). Often incorporating Csikszentmihalyi's (1988) systems approach to creativity, studies of distributed creativity examine how the attributed creator, the contributions of others within the attributed creator's working environment, and shared knowledge amongst all parties affect the creation process (Sawyer & DeZutter, 2009, pp. 81-82). In Guy's example, he and Fernández react to the determinant and indeterminate compositional parameters to collectively realise the score. Though Guy has written improvisational processes into *Bird Gong Game*'s structural framework, its sonic attributes are determined by the creative contributions of the improvising performer.

Certainly, the idea that a musical score insufficiently represents the sounds produced in performance extends beyond studies of graphic composition. Cook (2012) argues that any written score serves not as a text-based musical representation, but as a script 'choreographing a series of real-time, social interactions between players' (p. 86). Nevertheless, scores that use a fixed reference system to indicate a work's tonal and rhythmic characteristics provide a level of predictability as to how a work will sound. By contrast,

certain aural parameters in *Bird Gong Game* are wholly dependent on the performer. Therefore, when discussing Guy's graphic works, it is essential to evaluate the contributions of the performer when assessing the compositional whole.

6.2.2 Structural flexibility in *Machrie*

The idea that distributed creativity can enable structural flexibility has been influential to my graphic piece, *Machrie.* In *Machrie*, determinate material is put forward improvisationally during performance. To facilitate this, improvisational processes embedded within the compositional directives distribute creative agency in three ways. First, a performer on an electronic means of sound production improvises throughout the entire composition. Second, the conductor may select ensemble members to improvise freely (meaning what one plays is wholly determined by the performer) at any point during the performance. Lastly, the conductor improvises by making cues in reaction to the confluence of determinate material and improvisation. In this way, *Machrie* adheres to the 'three-way split' described by Guy in which the actions of the soloist, conductor and ensemble are linked through improvisation and thus enables a flexible compositional framework.

6.2.3 Graphic score performer is an improviser

Regarding performative ability, research participants believe the typical graphic score performer is an improviser. Simon Fell, referencing what this

research defines as purely graphic scores, states that the performer will 'have to be improvising, because there is no explicit instruction for you what to do'. For scores containing determinacies, Lisa Mezzacappa explains the importance of improvisational expertise.

> **LM:** [Graphic compositional] success is based on the experience and intuition and, and sensibility of somebody who is really an improviser […] the reason they [my graphic scores] are so open is about trusting where these people are gonna go -
> **RW:** Ok.
> **LM:** - based on their other experience.

Fell and Mezzacappa's quotes indicate that they view the improvising performer as a creative contributor. This finding is not unique to my study. Graphic score performance has, since its inception, relied upon the performer to transform indeterminacies into specific sounding phenomena (Alden, 2007, p. 315). However, as exemplified by the working methods of David Tudor, improvisation is but one means of graphic score realisation. To understand the importance participants place on improvisation, it is beneficial to examine the influence of musical identities, environment and performative requirements of compositions discussed.

The identities and practices of the participants point to why they believe a graphic score performer will be an improviser. Each participant has a history of improvisational performance as well as social and professional relationships with improvising musical communities. As the combination of musical activity, social environment and culturally defined musical

categorisation contributes to establishing musical identity (Hargreaves, *et al*, 2002, p. 2), the participants' backgrounds suggest that each has a musical identity as an improviser. Furthermore, each participant is active in milieus employing improvisation. As demonstrated in psychologist Henri Tajfel's (1978b) research on social identity and categorisation, members of an in-group typically promulgate that group's values and practices (pp. 61-63). This being so, lengthy involvement with improvising musical communities could account for why participants believe one must be an improviser in order to perform a graphic score. However, this reasoning alone is insufficiently rigorous.

Relying solely upon an established identity and environment to explain a participant's belief becomes problematic when one considers the fluidity of self-image and agentic practices. In addition to being improvisers, many of the participants also hold additional musical identities as composers. As prominent canonical and contemporary graphic score composers such as David Young and John Cage have advocated against spontaneous improvisation for the realisation of their scores (Kanga, 2014, p. 41; Anderson, 2009, pp. 30-31), one could argue that participants with additional composer identities would potentially discourage improvised performance. Moreover, as Tajfel and social psychologist Albert Bandura's research into psychosocial behaviours has shown, social environment cannot conclusively indicate preference, as social identities and agentic practices are often

multiple and flexible depending one's immediate environment (Bandura, 2002b, p. 272; Tajfel, 1978b, p. 63). To further investigate why the participants favour an improvisational approach to score realisation, one must examine the performative directives of the music discussed.

Participant descriptions of graphic scores perhaps best indicate why they view the performer as an improviser. Guy designs his graphic works to be 'hybrid pieces of composed music and improvisation'. Mezzacappa states that 'improvisation is a through-line' for all her compositions and thus specifically asks performers to improvise. John Lindberg says Wadada Leo Smith's music requires the performer to 'react and create' within a constantly changing structure. In these examples, the works' performative requirements determine the need for improvisation. But, as compositional dictates are not sacrosanct (see chapter 7), it is likely the confluence of musical identity, environment and compositions specifying improvisation that influences participants' belief that the graphic score performer must be an improviser. Accordingly, it is important to reflect on what processes my own works would require for interpretation.

6.2.4 Improvisation and creative output

As stated in chapter 5, except for *Maria Ave.,* each piece in my creative output combines the disciplines of composition and improvisation. Nonetheless, I do differentiate between scores specifically requiring

improvisation and those that could be realised through other means. In addition to *Machrie*, scores that contain specific directives to improvise and therefore must contain improvisation are *A.B. W.L.S.* and *Graphic Piece for Two Improvisers*. Though *A.B. W.L.S.* and *Graphic Piece for Two Improvisers* could theoretically be realised through other means, I explicitly ask performers to improvise melodic lines. As the participants view the composer as the foremost authority of a work (see chapter 7), it is reasonable to expect that the dictum to improvise would be respected by a performer capable of doing so. For *Graphic Piece for Solo Bass*, *Imachinations* and *Le temps est écoulé!*, there is no compositional directive to improvise. As such, these pieces may be performed improvisationally or through Cagean methods, where, in Fell's words, 'you've got to work [your interpretation] out [before the performance]'. However, I believe that, as the composer, my personal performance method is worthy of discussion.

Though I perform *Graphic Piece for Solo Bass* and *Imachinations* using improvisation, my approach differs from concepts of free improvisation in which all musical structures and attributes are spontaneously constructed (Borgo, 2002, p. 167). Rather, these pieces reflect Robert Black's thoughts on how improvisation may function within a graphic score.

> **RB:** I think there's a certain freedom in those scores to, to not be um, really, really repetitively specific in what you do, but I think at the same time um, so I think that it can change, like a Calder mobile […] It's still the same, it's still the same mobile –
> **RW:** Right, but yeah.

> **RB:** - but the elements look a little different from today or tomorrow, so. And you might approach it a little differently […] if you have a continuum from, from totally notated to graphic score to improvisation, it's a fluid kind of thing, and the graphic score kind of inhabits this middle ground between the two.

My approach to these works reflects Black's idea of graphic scores as occupying a midpoint in the continuum between totally notated and free improvisation. Prior to performance, I assigned interpretive meaning to the graphics and decided the sequence in which each section of graphics would be performed. While these properties remained stable, the specific attributes of each section, such as duration, pitch, rhythm and timbre, were improvised. In this way, new ideas could be explored improvisationally, though the overall framework was pre-planned.

Lastly, *Maria Ave.* contains sufficient instruction so that the graphics may be performed by non-improvisers. Nonetheless, the way in which the graphics are performed may still be considered improvisational, or at least representing a point along Black's 'continuum'. Pitch and metrical units are inexact and, as such, may be considered semi-improvisational in their execution. Each performance is therefore unique and, in Black's words, not 'repetitively specific', an idea that leads into the next emergent theme: music as performance.

6.3 Music as performance

As discussed, improvised performance may affect determinacy, changing a graphic composition's character from performance to performance. The following quote from Lindberg illustrate this idea.

> **JL:** It's just kind of a trademark of Wadada [Leo Smith]'s music. [laughing] Every performance, I mean, every performance of every kind of music is *different*, but, I think, with him, he takes it to another level.

Though Smith creates compositions with distinguishable determinacies, the written score is not wholly indicative of the resulting music. The music must be realised through improvisational processes embedded within the score. Regarding *Mount Kilimanjar*o, Lindberg states that Smith's conducting changes the 'pace that the events, that the orchestra is playing as I'm soloing, or being the featured soloist, they're very different every time we've done it'. The view that the performative act and not the score that ultimately determines a composition corresponds to Cook's (2012) theory of music as performance.

Music as performance challenges traditional musicological views that prioritise a musical piece's replicable qualities (Cook, 2012, p. 184). In this theory, a score is not a closed, reified work of art, but a script for performance, which is the actual point at which music is generated (Cook, 2012, pp. 185-186). This idea of a score functioning as a script resembles Mezzacappa's description of graphic performance.

> **LM:** We're using the score to work together and make something happen together sonically, as opposed to the score, isolating us in some kind of weird non-interaction vacuum or something.

While Cook has applied the idea of music as performance to a variety of musical practices and works (Cook, 2014)[4], it seems particularly applicable to compositions utilising indeterminacy and improvisation. Indeed, Nick Kaye (1994) cites graphic composers such as John Cage as helping upend the romantic conception of musical compositions as complete and self-subsistent entities, as these composers' works rely on processes that may only manifest during performance (p. 93). But if performance is truly the place where, as Cook (2012) states, both music and 'generation of meaning' occur (p. 185), how do I as a composer assess the role of improvised performance in my own works?

6.3.1 Music as performance and creative output

Each piece in my creative output contains indeterminacies that make the sounding attributes difficult to predict. In the graphic section of *Maria Ave.*, the resultant sounds are not entirely predictable as the notational information given to the performer is not precisely disambiguated as to pitch and rhythm.

[4] Cook's (2014) book *Beyond the Score: Music as Performance* adeptly demonstrates the value of performance studies as a means to better understand works of the common practice classical period and popular music. Among the compositions Cook examines through recorded performances are Schubert's Op. 90, No. 3 (pp. 61-64); Mozart's Piano Sonata No. 11 *Rondo alla Turca* (pp. 111-124); Chopin's Op. 63, No. 3 (pp. 183-201); and Jimi Hendrix's 'Foxy Lady' (pp. 290-299).

Though *Graphic Piece for Solo Bass* and *Machrie* are crafted to reflect Guy's idea of a 'musical signature [that] is consistent because of the fixed notation material', sounding attributes vary in performance owing to indeterminacies such as freely interpreted graphics and performer agency when selecting determinate material. *A.B. W.L.S., Graphic Piece for Two Improvisers*, *Imachinations* and *Le temps est écoulé!* rely almost wholly on the performer for aural attributes, so much so that the compositions may not be recognisable to a listener who has previously heard the same piece performed, or even to myself. Per Fell, this is not uncommon with purely graphic scores. Describing Brown's *December 1952*, Fell states that 'I think some of the performances he [Brown] has been involved in sound nothing like the score looks'. This statement illustrates the unpredictable nature of performer interpretation and improvisation in graphic performance. That being so, it is appropriate to explore how participants have sought to control improvisational processes within their own graphic compositions.

6.4 Compositional limits to improvised performance

Data suggests that, though a performer may be expected to improvise during the performance of a graphic score, their creative autonomy is not absolute. This theme examines how composers limit and attempt to influence a performer's improvisation through notation, para-notation (additional marks and textual instruction made within the score, often after the score is completed), verbal communication, and performative interaction. By

examining both composer and performer perspectives across a range of graphic compositional styles, this research demonstrates that improvisational processes generated by the performer are often subject to external influences.

6.4.1 Composer strategies to influence improvisation

Participant responses indicate that graphic composers use specific strategies to influence the improvisational processes of the performer. Though this strategy is not confined to his graphic output, Guy uses textual instruction to influence an improvisation.

> **BG:** Very often there's a little written note, 'Percussionist should only *colour* the piano improvs, not drive them.' So, the idea is that I'm trying to encourage the percussionist to be very *sensitive* to what I'm asking the pianist to do.

Guy uses para-notation to communicate guidelines for the improviser. In his percussionist/pianist example, the percussionist is encouraged to improvise in a way that adds textural enhancements to the improvisations of the pianist. Significantly, as both Guy and the performers share responsibility for the actual creation of music, these directives are only valid if his intentions are understood. Reliance upon the performer reinforces the idea, introduced in chapter five, that a careful consideration of the performing musicians is crucial to graphic score performance. By selecting musicians who are aesthetically sympathetic and likely to understand his musical directives, Guy

can ask the performers to follow textual instruction *and* bring crucial, though limited, improvisational moments to the performance. Other methods, however, are less explicit and intended to provoke actions rather than direct the performer to improvise in a specific manner.

In addition to para-notational directives, graphics may be used to influence performer improvisation. Guy states that he often uses graphics as 'a corpus of material that could be inspirational to them or at least *encouraging* for the musician to use […] as a springboard to go somewhere else'. In this way, Guy prompts the performer to change or modify their current musical activity at a given moment. Compared to the use of para-notations, the results of using graphics in this manner are likely to be even less predictable. As demonstrated by musicologist Christopher Williams' (2016b) research into Cornelius Cardew's *Treatise* (1967), specific strategies for interpreting graphic imagery can vary markedly amongst performers (par. 12-19). Nevertheless, by considering Guy's careful selection of performing musicians, one may still detect the hand of the composer influencing improvisational divergences.

In addition to para-notation and graphic symbols, Guy attempts to influence improvisation through methods that can only occur during performance. To begin, Guy often selects modules to 'change direction and perhaps encourage some changes of direction', thereby using determinate material to

influence the actions of the improviser. Additionally, Guy may use improvisational performance itself as means of effecting a musical change from other improvisers. In *Bird Gong Game*, a flash card labelled 'Maybe' signals Guy to improvise on the double bass. In the following example, he uses the 'Maybe' card to attempt to influence the soloist's improvisation.

> **BG:** But I only ever did that once with [a soloist] who .. took the piece apart and never stopped [playing]. So I thought, I should pick up the bass and try and influence [them] a little bit because I couldn't get [them] to change direction.

As the selection of determinate structures is unable to guide the soloist towards a conclusion, Guy improvises on his instrument with the soloist as a means of influencing the soloist's improvisation.

Mezzacappa also attempts to steer the actions of the performing musicians, though she finds it difficult to ask someone to alter their improvisational instincts.

> **LM:** Sometimes it's easier to get a specific change in a part, like uh, 'Can you play that note shorter?' Or, 'Can you,' uh, you know, a very specific thing you can often get quite easily. But, asking someone to improvise? *Differently?* I find is a really strange thing to ask.

Before discussing strategies that Mezzacappa uses to shape improvisations, it is first necessary to explore why she finds it difficult to ask a performer to modify an improvisational approach. When describing her preferred collaborators, Mezzacappa states that 'who they are as an improviser', that is, their unique improvisational voice, is 'much more important' than the

actual instrumentation. The phrase ‘who they are as an improviser’ suggests that, for Mezzacappa, improvisational abilities are more than just learned skills; they are connected to the identity of the individual. Research into the musical identities and collaborative practices of jazz musicians has revealed that improvisational abilities and musical interactions have significant sociological meaning for improvising artists (MacDonald & Wilson, 2006, p. 72; 2005, p. 395). Indeed, oral histories of jazz musicians indicate that improvisational ability and manner of playing is commonly viewed amongst practitioners as an extension of the performer’s personality (Marsalis & Hinds, 2004, p. 20; Daniels, 2002, p. 345; Davis & Troupe, 1989, p. 287). Because of this, Mezzacappa likely feels trepidation asking someone to modify a performative act so closely linked to one’s musical and social identity. However, she does develop strategies for shaping and influencing band members’ improvised contributions.

To shape improvisation in performance, Mezzacappa depersonalised her critiques.

> **LM:** I wind up asking for a lot of *ensemble* changes, as opposed to individual changes in a way. Like, ‘I’m going for a texture that’s a little more sparse and bare and ethereal here.’ Like, ‘Can, can we all play less? Can we think about our range and how dense, how densely we’re playing in a certain frequency range?’ Or, and I think that winds up being a little more productive than trying to get somebody to play a certain way if it’s an open ended uh, section.

Mezzacappa avoids asking an individual to improvise differently by critiquing the ensemble. In doing so, she communicates expectation and criticism of specific musical ideas while not singling out an individual. If she must address an individual, she requests a 'very specific thing that you can get quite easily', thereby again avoiding a valuation of the performer's improvisational efforts. In these ways, Mezzacappa attempts to influence improvisational processes in performance. Absent from her descriptions is whether she is referencing a purely graphic score or a score containing determinacies. Acknowledging that participant-composers seek to influence the performers' improvisations, it is appropriate to now examine other limitations to improvisation in graphic score performance.

6.4.2 Limited improvisation and purely graphic scores

In the following statement, Black describes how the creative contributions of the performer are influenced and limited by the notational directives in a purely graphic score.

> **RB:** [It] combines a little bit of both worlds –
> **RW:** Ok.
> **RB:** - in that you have a certain visual constraint of what it looks like, but yet again, there's a certain freedom in how you actually, the elements that you can play.

In Black's view, while purely graphic works offer 'freedom' as to how one may interpret the notation, the performer is still beholden to the visual parameters of the piece. Though he believes there is 'a certain freedom in those scores

to not be really, really repetitively specific in what you do', methods of graphic interpretation must still operate within the 'visual constraint' set by the composer. Thus, though the graphics were not created to represent a specific musical idea, Black still treats them as a message from the composer. As he explains, this message impacts upon improvised performance in a purely graphic score.

> **RB:** But if you have a graphic score, you still might improvise, in a certain sense, but it, but you don't have the latitude to do just *anything* you want.
> **RW:** Right.
> **RB:** Because it doesn't suggest that to you.

Black's statement reinforces the idea that the composer influences improvisation in a graphic score performance. He says that 'if you're just improvising, it could be anything,' a liberty that graphic scores constrain. This does not, however, exclude the opportunity for variation in performance. Returning to Brown's *December 1952*, Black states that 'each time you play it, you might play it differently, but it's gonna pretty much sound like that piece'. In other words, though improvisation may enable the specifics of the performance to change, the composition itself remains a fixed entity. This concept reflects Black's description of graphic scores as a 'middle ground' between tradition notation and improvisation.

What Black does not say is exactly how a purely graphic score guides improvisational processes. Fell states that 'there are some scores which just

invite you to play in a way which reflects the disposition or density or, movement within the graphic image'. Likewise, he says that a score can '*clearly* suggests a certain type of thing'. However, like Black, Fell never indicates what that might be, instead stating that a performer should be 'playing a certain way because it [the score] looks a certain way […] rather than just ignore it'. As Fell views a performer's background as influential to graphic interpretation (chapter 8), one may assume that the score's suggestions are subjectively interpreted according to the experiences of the performer. While strategies for interpreting graphic notation are explored in detail in chapter 8, for now it is sufficient to state that Fell believes that improvised performance in a graphic score must somehow correlate to its visual components.

6.4.3 Limited improvisation and creative output

Deciding what limitations to place upon improvised performance was a central concern when composing my creative output. As discussed, each composition contained a written key explicitly stating any limitations on performance, improvised or otherwise. These could be temporal limitations (*Graphic Piece for Two Improvisers*, *Le temps est écoulé!*), limitations on the performers' interactions (*Graphic Piece for Two Improvisers*, *Machrie*), directions for navigation within the notational framework (*Graphic Piece for Solo Bass*), instructions for graphic interpretation (*A.B. W.L.S.*, *Graphic Piece for Two Improvisers*, *Machrie, Maria Ave.*) or a means of controlling or

influencing an improvisation during performance (*Machrie*). In these ways, I devised compositional specifications to regulate improvised performance. These examples, of course, only address limitations of improvisational processes that are present within the compositional directives. As reflections on performative control are, from my perspective, evaluative, they are discussed in chapter 10.

6.5 Summary

This chapter has examined participant perspectives on improvisation in graphic score performance. It has shown that, in graphic performance, creativity is distributed between the composer and the improvising musicians. Though participants attribute authorship of a score to the composer, they also recognise that the improvising performer is an essential creative contributor. As such, this research has demonstrated that an unperformed graphic score does not indicate the totality of its aural attributes, as they can only come into being through performance. This is, of course, not a new finding. The first generation of graphic composers were explicit that their works necessitated creative performer agency. Earle Brown (2008) describes his early graphic and experimental works as arising from a desire to create 'a score which would have many possibilities of interpretation' (p. 1). And Cage (1973/2004a), speaking of Morton Feldman's graphic piece *Intersection 3* (1953), states that 'the composition permits an infinite number of [performer]

realisations' (p. 179). However, these findings do offer new insights into performer perspectives into distributed creativity.

What is significant in this study is that participants emphasise the improvising performer rather than the process of improvisation as a compositional component. That contrasts with other research perpetuating, perhaps inadvertently, the idea that Western art music has universal, autonomous qualities that are encapsulated within a score's directives, even when the directives themselves are indeterminate. Per musicologist Lucy Green (2012), Western musical ideologies have placed the classical canon at the pinnacle of achievement based on the perceived qualities of 'universality, complexity, originality, or autonomy' (p. 207). And these qualities, as they are perceived to exist, are often viewed as embedded within the notation and score. As philosopher Nelson Goodman asserts, the identity of a musical work is tied to its notation rather than its history of production, as it is notational compliance that makes aural identification possible (Goodman, 1978, p. 50). I would argue that the idea that notation alone embodies the identifying characteristics of a work, which are themselves viewed as universal and autonomous, has influenced discourses on graphic composition. The previous example by Cage, and indeed his entire lecture 'Composition as a process: Indeterminacy' (1973/2004a), discusses indeterminacy only in terms of what each composition 'permits' and the 'function of the performer' as determined by the composition (p. 179). It does

not, for example, address how performance history or performer interpretations have impacted on the works he discusses.[5] Likewise, DeLio (1984) centres his discussions of graphic works only on the compositional structures and methods of performance set by the composer, rather than performance history or unique performer strategies for realisation. In doing so, he and Cage perpetuate the idea of a composition as an autonomous entity, with the performer being essential, but ultimately subordinate to the performative processes outlined by the composition. This research challenges these ideas by showing the emphasis that participants place on the improviser and their unique contributions to a work's history of production, rather than emphasising improvisational processes encoded within a compositional structure.

Participant responses also indicated the belief that improvisational processes were limited in graphic score performance. In addition to uncovering specific composer strategies for attempting to influence improvised performance, this analysis has indicated a socially negotiated expectation that the composer could seek to control and limit performer improvisation. In doing so, this research has shown that improvised performance is affected by social processes. Even when performing a purely graphic score in which the

[5] Whilst Cage does note a specific and unique realisation by David Tudor of Earle Brown's *Four Systems* (Cage, 1973/2004a, p. 182), this example nonetheless reinforces the idea that it is the composition itself that enables such creative interpretation.

graphics have no pre-determined meaning, participants view the notations as indicating a limitation on improvised performance. In this way, the notation itself becomes representative of an implicit social contract stating that improvisation must somehow reflect the composer's notational directives. As will be discussed in chapter 7, this socio-musical practice likely stems from the still-hegemonic 19th century Romantic ideal that one must perform a work in accordance with the composer's directives and aesthetic (Goehr, 1992, p. 245). However, as the Romantic ideal does not typically accommodate notions of distributed creativity (Toynbee, 2012, p. 163), this research is notable for showing that the participants' views of improvisation are influenced by contemporary and traditional ideas of musical performance.

This research has had a significant influence upon my creative output, as it compelled me to consider how I wanted to incorporate improvisation into each piece's compositional framework. Furthermore, the findings on compositional limits to improvised performance led me to consider how I wished the performer to respond to each indeterminacy. These considerations have affected the compositional design of each piece as well as the explicit instructions I provided regarding the use of improvisation. And though several pieces have yet to see a performance, the compositional process for these works has been influenced by participant descriptions of distributed creativity. Examples of this in my compositional process include a) contemplating the actions and reactions of potential performers, b)

considering if a piece could be performed by means other than improvisation and c) considering how I could effectively limit and influence the actions of improvising musicians. By implementing these findings in this manner, my output shows the diversity of improvisational practice within graphic composition and demonstrates how musical and social influences can affect the compositional process.

Chapter 7 Communication from Composer to Performer

7.1 Overview

This chapter investigates how graphic score composers communicate method of performance and aesthetic expectation to the performer. As graphic scores typically require learning a new notational system (Evarts, 1968, p. 410), examining how composers convey information is crucial to understanding graphic composition as a practice. As such, this chapter examines methods of communication and how participants perceive and evaluate communication from the composer. It also examines, when this information is available, the environment in which a communication takes places as well as the interpersonal relationships between the communicating parties. The table below lists the chapter's superordinate and emergent themes.

Superordinate theme:	Communication from composer to performer
Emergent themes:	• Suitability of graphic notation to compositional aims • Textual communication from composer • Verbal communication from composer • Establishing trust

Table 7.1 Communication from composer to performer

The first theme explores participants' belief that composers should assess the appropriateness of graphic notation to their compositional objectives. Participants stress the need for composer reflexivity, stating that composers

should consider what they wish to accomplish by using graphic notation. Participants also state that, as performers, they desire a clear message from composers about a graphic score's performative requirements.

The next two themes examine methods of communication. The second theme looks at textual communication from composer to performer. It discusses what composers may attempt to communicate through a written key and the use of para-notations within a score. This theme also explores why a performer may choose to disregard a written compositional directive. The third theme investigates verbal communication from the composer. Participants state that the unfamiliarity of a new graphic notational system often necessitates verbal clarification from the composer. Participants discuss how verbal communication from the composer may be used to clarify textual communication and impart compositional and performance objectives.

The final theme explores the importance of a composer establishing trust with performers. Participants state that building trust is important, as performers must often be convinced that the instruction provided is sufficient to correctly perform the notation. This theme also explores the idea that composers often need to convince the performer that their use of graphic notation is deliberate and serves a specific compositional aim.

7.2 Suitability of graphic notation to compositional aims

To effectively convey compositional intent, Simon Fell states that composers should consider the appropriateness of graphic notation to their compositional aims.

> **SF:** If you had a very very clear idea of what you wanted [as a composer], and you really wanted that and nothing else, or as near to that as you could possibly get, then you need to use a more specific kind of notation.

Fell advises against composers using graphic notation if they wish their compositions to contain specific sonic characteristics. For Fell, graphic scores do not present performers with 'specific tasks [or] specific technical issues', nor do they 'seek an ideal outcome' in terms of interpretation or performance. In this view, performers determine a graphic score's sounding attributes, as they are not receiving explicit communication from the composer. Likewise, the composer cannot transmit a precise message to the performer. Because of this, Fell says that 'if you [the composer] really want that [a specific idea realised], then you've got the wrong format for getting us there'. It must be noted that Fell's statements apply only to what this research categorises as a purely graphic score (chapter 5). Nonetheless, participant responses suggest that similar concerns apply to compositions containing determinacies.

Lisa Mezzacappa states that graphic score composers need clear, coherent ideas and should consider whether graphic notation is appropriate.

> **LM:** I'm wanting, the intention of whoever's creating the score to be quite clear, and I'm wanting it to feel like, there's a reason that it's notated graphically and it's not just a shorthand for something that *could* be notated in some other way.

Mezzacappa believes a composer should use the notation that best reflects their ideas. She recalls observing 'tension with the composer where […] they've mapped some information onto this graphic material, this visual material, that is not clear to me looking at it, and they can be frustrated that it's not being realised'. As a solution, Mezzacappa says that a composer can avoid this frustration by using 'conventional' notation.

As a composer herself, Mezzacappa implements a reflexive process to determine the appropriateness of graphic notation.

> **LM:** When I make a score that has graphically notated elements, do - is this really the best way to represent the sound that I want, the interaction that I want? Um, is there another way to notate this? Do I have a clear idea, then, of what this looks like, um, or is this really the effect that I'm going for? […] So sometimes I kind of have to challenge myself to say, 'Well, actually I think I have a clearer idea than this and I should, I can notate this conventionally.

By assessing her compositional aims, Mezzacappa works to ensure that her notations accurately reflect her ideas. It is important to her to avoid graphic notation if traditional notation can more effectively convey a musical idea to the performer. In this way, she attempts to avoid the frustration she has

observed in other composers when their musical ideas are not effectively conveyed to the performer.

In addition to composer frustrations, Fell states that, when a composer's ideas are not clearly articulated, frustrations may also occur on the part of the performer.

> **SF:** It's sometimes frustrating for a performer, you know I've played graphic scores where it's clear the composer hasn't really thought about –
> **RW:** Ok.
> **SF:** you know, these kind of graphic, 'cause the graphic score is quick and easy sometimes. I'm not saying all graphic scores are, but it can be. And sometimes it can, it can, and you can get a negative reaction to a composer where you've, you think, 'Well, you know, you haven't *really* thought this through, what's going to happen when you give this to us.'

Fell recalls being frustrated when composers have not thought clearly about their creative intentions. He uses the term 'quick and easy' to imply that composers may employ graphic notation to compensate for a lack of clarity about their ideas. These comments indicate that Fell expects a composer to have clearly defined compositional objectives. His belief that graphic scores are unable to convey specific musical ideas points to why he often feels 'ambivalent' towards graphic composition.

Fell is not alone in this criticism of graphic compositional practice. In the pilot study undertaken for this thesis, double bassist Tom Blancarte shared similar concerns about graphic composers having poorly conceived compositional

objectives (Wimbish, 2020, par. 21-22). Both Fell and Blancarte state that they want a 'clear' directive from the composer and recall being frustrated when this does not occur. This is not, however, the only perspective afforded graphic composition. Ganter and MacDonald (2015) detail how a visual artist and a musician collaboratively negotiate concepts of image and sound in the composition, rehearsal and performance of a graphic score. As their research demonstrates, graphic scores may be highly collaborative and at least partially conceived without a definite conception of the piece's sonic attributes (par. 5). Nonetheless, this research indicates that composers who cannot effectively communicate expectations and performance methods are perceived as ineffectual in their role. To better understand the role of the composer, it is necessary to examine traditional ideas of composition, notation and performance and investigate the degree to which these ideas have likely influenced participant attitudes.

7.2.1 Ideas of compositional authority

Western musicological discourses on composition typically adhere to the nineteenth-century ideal that musical works (and their corresponding performative directives) originate from the internal creative impulses of a single individual (Toynbee, 2012, p. 162). This idea has not gone without challenge. In his book *Art Worlds*, sociologist Howard Becker posits that all artistic creations are the result of collective endeavours. In his words, 'All artistic work, like all human activity, involves the joint activity of a number,

often a large number, of people. Through their cooperation, the art work we eventually see or hear comes to be and continues to be' (Becker, 1982/2008, p. 1). In addition to Becker, contemporary research into distributed creativity seeks to understand the complex social interactions that are involved in artistic production (see chapter 6: 6.2.1). Still, the Romantic ideal remains the prevailing paradigm for discussions of compositional creation and has reinforced the idea that composer is the foremost authority on a work's performative attributes (Cook, 2014, pp. 11, 15). In fact, the concept of composer authority is so pervasive that it is often applied to musics outside of the Western classical tradition from which it originated (Toynbee, 2012, p. 163). Consequently, scholarly and popular discourses routinely discuss collaborative musical efforts in terms of a work attributed to a singular authorship (Goehr, 1992, pp. 245, 253-254).

The concept that musical works originate wholly from the toil and imagination of a single creator has had a significant impact on musical communication from composer to performer. In the nineteenth century, notational specificity increased to precisely convey the composer's intentions and thereby limit interpretive latitudes of the performer (Goehr, 1992, pp. 224-226). Hence, notation came to be thought of as explicit instruction for performance that encapsulated the core identity of a work.[6] Consequently, performing notation

[6] The degree to which notation alone can individuate a musical work has, and continues to be, a spirited philosophical debate. Richard Wollheim has argued that the individuation of a musical work must include the history of production in

became viewed as a compliant rather than a creative act (Small, 1998/2011, p. 6). Even interpretational latitudes run the risk of violating a composition's *werktreue*, that essential meaning bestowed on a work by its composer. As musicologist Jeremy Cox (2013) explains, '*Werktreue* brings with it a set of quasi-ethical imperatives concerning the preparation of a "proper" performance, of which adherence to the evidence set before us – rather than wilful pursuit of our own subjective instincts and speculations – is the cornerstone' (p. 12). Thus, communication from the composer to the performer through notation is typically seen as one-directional, instructive, and in the service of the composer's aesthetic.

Returning to this study, it is important to consider the degree to which nineteenth-century musical principles may colour the participants' perspectives on composition, composer authority and notation. Each of the participants has received some degree of training in the Western musical canon. As studies have demonstrated that a canon-based musical education reinforces dominant cultural norms (Folkestad, 2002, p. 157; Thompson, 2002, pp. 15-16), the participants' educational background would suggest an influence by these Romantic-era ideals. Indeed, responses in table 7.2

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addition to the written score (Wollheim, 1978, p. 47). Nelson Goodman has refuted this statement by saying that history of production is only relevant to determining authorship, not identity (Goodman, 1978, p. 50). What is relevant to the discussion of compositional authority in this thesis is that both highly influential philosophers link a work's identity directly to the written score and notational compliance (Goodman, 1978, p. 50; Wollheim, 1978, p. 47).

denote that, even when discussing compositions using indeterminacies and subjectively interpreted notation, participants view the composer as the predominant authority.

Participant	Quote
Robert Black	You have a general […] understanding of a particular sound world, the creative world of [the composer]. And so you kind of go, 'Well, what we're doing is really outside of that, you know, so maybe we're on the wrong track.'
Simon Fell	If I was playing a Morton Feldman graph piece […] I'd probably have tried to choose those things which, it appears that Morton Feldman wanted.
Barry Guy	[The composer must] give enough instructions about how to [perform a graphic] and say, 'Don't worry about the result, just go from this note, follow the contour, follow the bowing instructions, up/down bows or articulations.'
John Lindberg	I had to conclude that it didn't go too well because the composer thought it was horrible.
Lisa Mezzacappa	I've played a graphic score that had a very clear set of instructions, and the path was very clear from beginning to end how the score was to be navigated […] and in other instances, I've encountered graphic scores where the composer said, '*You* decide what this means to you.'

Table 7.2 Indications of composer authority

The above quotes point to an influence of nineteenth-century musical ideals. However, these ideals are not entirely hegemonic. This research indicates that participants are often negotiating a balance between Romantic-era musical concepts and personal experiences demonstrating that the performer is an active co-creator. This suggests that, though the graphic composer is

expected to clearly communicate their compositional directives, there is the expectation that the performer will be a creative contributor.

7.2.2 Using graphic notation to communicate specific ideas

The above data has profoundly impacted on my creative output, as it has led me to re-evaluate what I wish to accomplish with graphic notation. From this reflexivity, I have started to think of my use of graphics as falling into one of two categories. In the first category, which includes *Graphic Piece for Solo Bass, Imachinations*, *Le temps est écoulé!*, and the graphic depictions of megalithic circles in *Machrie*, the graphics contain no pre-determined meaning and thus rely solely on the performer for creative realisation. In the second category, which comprises the pieces *A.B. W.L.S.*, *Graphic Piece for Two Improvisers*, module 5 of *Machrie* and *Maria Ave.,* I use graphics to convey specific musical ideas to the performer. For *A.B. W.L.S.,* graphics represent either a directive to improvise melodically or texturally. In *Graphic Piece for Two Improvisers*, graphic notation gives an approximation of the shifting relationship between the featured performer and accompanist. For module 5 of *Machrie*, graphics symbolise short musical gestures that are explained in the accompanying key. In *Maria Ave.*, graphics represent specific aural effects that are predetermined by the composer.

Reflecting on what I wished to communicate to the performer enabled me to clarify my compositional objectives. This led to several revisions of each

work, particularly to the written key accompanying each piece. Revising the written key led to deep consideration of what information to give the performer. In doing so, I endeavoured to convey a sense of clarity that would circumvent both performer and composer frustration. Though there is more to say concerning my use of written communication, at this point it is useful to observe participants' views on the subject.

7.3 Textual communication from composer

Participants state that a written key is the primary means of textual communication from composer to performer. Participants state that a performer must thoroughly comprehend these instructions. John Lindberg says that, when given a key, 'you have to study'. Likewise, Barry Guy states that the performer must 'do some homework' to correctly execute a work's performative directives. These statements indicate that the participants view the composer as the premier authority of a work. Nonetheless, the instructions within the key may not always be strictly followed.

A discussion of Robert Black's work on Cage's *59 ½" for a String Player* (1953) demonstrates how a performer may refashion a key's directives in favour of an approach that aligns with their personal preference. In this piece, horizontal blocks represent the strings of a four-stringed instrument (fig. 7.1). Graphics within these blocks represent notes played by the performer (Cage,

1960a). Per Cage's instructions, Black divides this space to determine the pitch range.

> **RB:** So [ask yourself] how much of the string are you going to use?
> **RW:** Ok.
> **RB:** You know, to, and that will determine your pitches, I think. At least that's how I interpreted that. So if I looked at that G string [represented in the score], and I said, 'Well that's, that's from the neck up all the way to the end of the fingerboard,' then in the middle [of the graphic] is gonna be in the middle of the string.

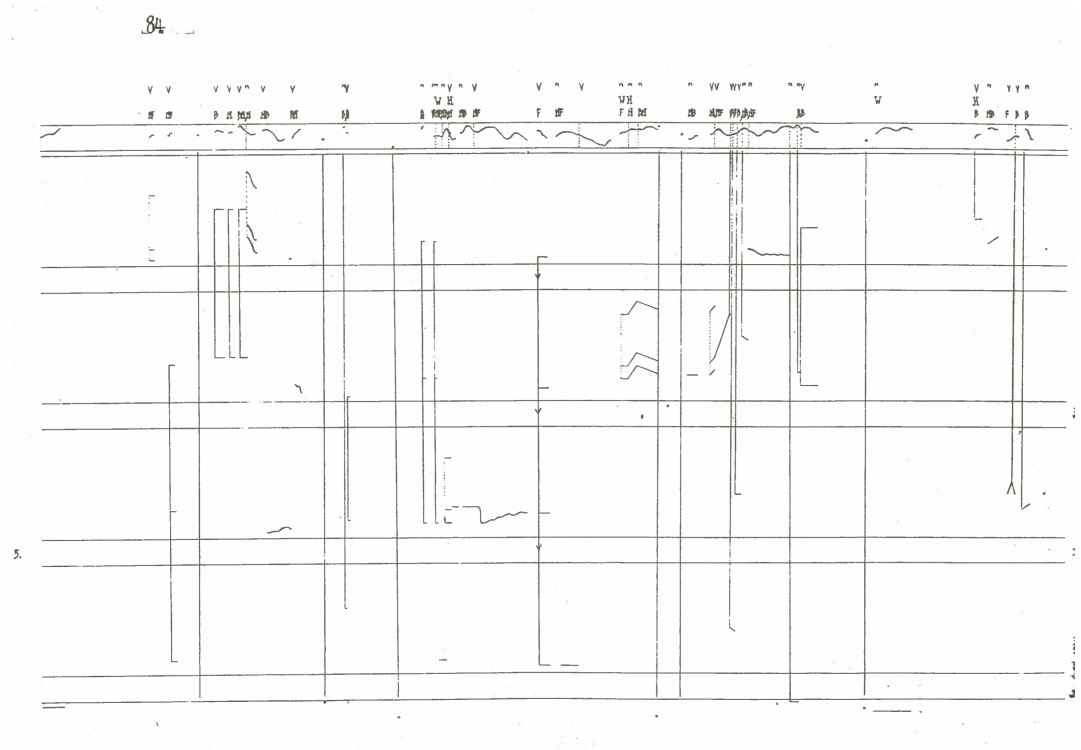


Fig. 7.1 John Cage, *59 ½" for a String Player*, p. 5, (1953)

Black determined pitch by assessing the score and then correlating the graphic representation of the string with the actual string. In doing so, he could then 'look at it […] as if I've learned to read the notation.'

Though Black engages with Cage's performative instructions, is important to note that this method of interpretation does not follow Cage's written directives exactly. The score suggests a pitch correlation of one semi-tone for each vertical millimetre of the horizontal blocks representing the strings. The performer measures this vertical area to determine the pitches they will play, presumably writing them out in a conventional manner reminiscent of noted Cage interpreter David Tudor. Black is aware that he has deviated from the score and gives a reason for not doing so, albeit while discussing a different piece.

> **RB:** A long time ago I started to work on the big Cage piece, the *Twenty-six Minute.*
> **RW:** I'm not familiar with that one.
> **RB:** Oh, wow! It's just like *59 ½ seconds*.
> **RW:** Ok.
> **RB:** Only it's twenty-six minutes, one-point-one-four-nine-nine-nine-something. Something like that.
> **RW:** Oh, ok.
> **RB:** For any string player.
> **RW:** Alright
> **RB:** But it looks the same.
> **RW:** Alright, sure.
> **RB:** So I started to write that out.
> **RW:** Ok.
> **RB:** And, and to kind of nor- standard notation and I .. I gave up. [both laugh] I ran out of time and energy. [laughs]

As Black found the composer's directives too cumbersome for his patience and time allotted for preparation, he modified his approach to a method that was both more practical and enjoyable. His decision is significant, as it demonstrates a point in which he disregards instruction in favour of personal preference. Black's performance preference is essentially improvisatory, as

he relies more on intuition and in-the-moment decisions rather than referring to exact measurements. Throughout our interview, Black emphasises respect for the composer's intent and adherence to the written dictates of a score. At the same time, his example of Cage's *26' 1.1499" for a string player* (1955) illustrates that in praxis he is not wholly dogmatic in his approach to graphic notation. It is also important to note that Black's preparation and subsequent performance were not personally overseen by Cage himself. Because of this, Black may have felt more able to take interpretive liberties without the fear of receiving direct criticism from the composer.

Personal preference may not be the only reason Black disregards Cage's written instruction and uses improvisation in performance. Returning to *59 ½" for a String Player*, Black states that the final page contains unrealistic performance demands. For Black, 'You get to a point where it's just like, I can't, I can't do all of the bow placement things that fast. I don't think *anybody* can.' As musicologist and composer Sandeep Bhagwati (2013) explains, this is a common phenomenon in Cage's music. Per Bhagwati, '[Cage] used overdefined or physically impossible parametrisation to propel musicians towards precisely such overload situations in order to force them to make their own choices – thus using notation to address ironically the unavoidable contingencies of performance' (p. 168). Black's solution to Cage's impossible score requirements is to 'start to work with the *sound* [and] improvise with all that kind of stuff.' After practicing with the timbral, tonal,

and rhythmic characteristics of the piece in an improvisatory manner, Black feels that he eventually reaches a point in which 'I just trust that it's [what is notated upon the last page] gonna come out'. Thus, it is the unrealistic demands of the piece that compel Black to consider performance solutions other than what is explicitly stated in the score's directives. As Black is an experienced improviser, he incorporates improvisation into his performance.

In addition to a written key, composers may use para-notations to guide the performer in the execution of a section or passage.

> **BG:** At the top here, there's an instruction for the pianist which says, 'In this first duo section the piano should generally play quietly. However, the spare orchestral clusters invite a response.' So basically I'm telling them exactly what's going on – 'Play quietly, but you're going to hear this and then respond.' […] It depends […] on the material, but I sometimes give instructions to the players of the best direction to go.

Guy uses para-notations to impart information for which there may be no suitable notational equivalent, such as the character of a performer's accompaniment and how to react to improvised events. As with a written key, the expectation is that the performer will heed the directives of the composer. However, after describing his para-notations, Guy adds, 'But they [the performing musicians] can ignore everything, and often they do, so .. [both laugh]'. Though Guy is clearly making a joke, his statement is also an acknowledgment that, in improvised performance, there are moments the composer cannot control. Though the composer may communicate

expectation, ultimately it is the performer who determines a piece's sounding outcomes.

7.4 Verbal communication from composer

Participants state that speech is the most common communication method when working directly with a composer. According to Lindberg, the unfamiliarity of a graphic score's notation makes verbal communication essential to performance.

JL: If we see, you know, an A and a B and a C of quarter notes written on a stave, we've seen it. We know what that is. We know what the person wants. If I see a blotch of yellow, the word 'hyena' and then a brown line that goes for six inches and parallel, I'm gonna need some explanation, verbally.

Lindberg's hypothetical scenario demonstrates the need for supplementary instruction from the composer. By using the phrase 'We know what the person wants', Lindberg indicates that he is concerned with performing the composition in accordance with the wishes of the composer. Likewise, even without specific instruction, he believes direction from the composer is essential.

> **JL:** *Or*, you know, the composer might just say, 'No, no explanation. Just play that.' Well that's explanation verbally, too.

The degree of instructional specificity is not Lindberg's central concern. What is important is that he interpret the score in a way that the composer deems appropriate.

Participants also state that, as composers, they use verbal communication to supplement the written key. As Mezzacappa explains, 'First there's a key, normally, if there's a lot of symbols, that I'll explain'. Though the key offers instruction for the performer, supplementary verbal communication clarifies aspects of the score that may challenge comprehension. She says her scores 'could be really difficult to navigate […] even though they're not difficult in the sense of executing some really difficult notated passage'. Thus, to clarify her ideas, she supplements textual instruction with speech, with much of this verbal communication occurring during rehearsal.

For Mezzacappa, rehearsals are a vital part of communicating her ideas as a composer.

> **LM:** I'm always, or almost always performing as, along with the musicians who are playing the piece um, and rehearsing, rehearsing the group is a really important part of that. That's really my chance to convey the relationships that I'm looking for, to convey things like the dynamic levels, or what should be in the foreground or the background.

As Mezzacappa is involved in the performance of her compositions, she takes advantage of her proximity to the performers to communicate her ideas. In this way, potential ambiguities of her notation may be clarified through speech and aural assessment. By participating in rehearsal, she can verbally address sounding events as they occur. Indeed, all participants state that rehearsals, particularly those that directly involve the composer, are

instances in which they may clarify how to enact the composer's ideas during performance.

7.5 Communication and creative output

Apart from *Maria Ave.,* I composed the creative output for this thesis either for myself or for an ensemble of performing musicians who were yet to be named. As the latter precluded the option of verbal communication with the performers during the composition process, I endeavoured to develop strong textual communication in the form of a written key for each piece. My aim was to construct a written document that a musically trained performer or conductor could comprehend in the absence of verbal clarification. This process is described below.

First, I reflexively considered the written text, assessing whether I clearly communicated how to perform each piece. Next, I envisioned a range of experiences that a potential performer would have prior to performance. These included skills such as reading music, familiarity with free improvisation, the ability to facilitate different playing techniques and prior experience performing graphic scores. I then revised the key to explicitly state what skills and performance methods each piece required so performers could ascertain whether they possessed the appropriate abilities to perform them. The final stage was to share the compositions with other composers in the University of Edinburgh postgraduate program. Providing

no additional verbal clarification, I asked them to assess the clarity of the written instructions. This was done person-to-person, as I believed quantitative methods would be inferior to an interview format in which I could respond directly to their comments and suggestions. From this final process, I further revised the written instructions based on the feedback I received.

7.6 Establishing trust

Composers may also use verbal communication to build trust with performers uneasy with graphic notations. Guy illustrates this point by recounting working with the BBC Symphony Orchestra for his piece, *D.*

> **BG:** So basically what I tried to do was to say to the players, 'Follow my instructions; what will come out is perfectly acceptable'. The idea was to provide clear information regarding articulations that would give confidence to the performer.

Guy states that a performer must believe that the instruction given is sufficient to correctly perform the notation. To enable this, Guy uses rehearsals as a time to 'build up a sense of trust', taking care not only in communicating information, but also in insuring that the recipient is at ease with the message. However, building trust need not be limited to performers unfamiliar with graphic notation.

Mezzacappa uses rehearsals to communicate verbally to performers why she is using graphic notation.

> **LM:** So, I *think* the rehearsal process is really important for me, uh to convey, 'Ok, what is this movement of this piece that's graphically notated?' First of all, why is it notated like this? I think the performers deserve to know that because I'm asking them to learn this whole other language, and they've worked a lot to learn the other language that's much more traditional. So I feel like I need to also convince them that I thought this out and that it's considered, and that there's a reason for it. Um, so it kind of tells them the why a little bit and tells them the inspirations behind it.

By sharing her logic for using graphic notation, Mezzacappa attempts to establish trust by convincing the performers that her actions are carefully considered. As previously discussed, Mezzacappa believes that composers should only use graphic notation when standard notation is inefficient to convey a musical idea. This points to the idea that she establishes trust so that performers will not see her notations as ill-conceived.

In addition to explaining why she uses graphic notation, Mezzacappa uses rehearsals to familiarise the performers with the music so that they will be at ease in performance.

> **LM:** I'll usually try [inaudible] to get us into the zone of a section, just so that we can hear what it's like. So, without the formal structure of, I'll try to sample kind of the uh, the content rather than the form, in a way –
> **RW:** Ok.
> **LM:** - so maybe there are pitch class sets and graphic symbols and images that represent texture or something like that, and uh, I'll try to get us to *sample* each of those. So what is, here's this image that you're responsible for playing, like, let's just, let's just live in that world a minute and someone else is going to improvise on top of that, so let's just do that for a while.

Mezzacappa rehearses in sections so that the performers can establish aural familiarity. This may include building familiarity with tonalities, textures and improvisational processes. Though this process is typical to Western musical rehearsal methods, what is unique is that Mezzacappa uses rehearsals to link the notation to its representational aural properties, as the performer is likely to be unfamiliar with the meaning of the notation. In doing so, she continues to build trust with the performers by putting them at ease with the compositional parameters.

7.7 Conclusion

This chapter has discussed communication between composer and performer and the impact of these findings on my creative practice. Participants stated that composers should only use graphic notation if it best conveys their musical ideas. Participants also said composers typically use textual and verbal communication to explicate and clarify a score's method of performance. In addition to conveying technical information, participants described using rehearsals as a time to build trust with the performers so that they may confidently perform new notational systems.

These findings are significant for revealing how methods of communication from composer to performer can be informed by social practices. Historically, views of musical communication have been influenced by speech metaphors and unidirectional transmission models in which a communicator transmits

information to a receiver (Cross, 2005, pp. 27-28; Hargreaves, *et al,* 2005, pp. 3-4). Realising the limitations of such models, recent research has proposed a more comprehensive framework for studies of musical communication that includes reciprocity between communicating parties, behavioural influences of the communicators, and the environment in which communication occurs (Hargreaves, *et al,* 2005, p. 5). The findings of this thesis demonstrate the value of such an approach to musical communication scholarship. It has demonstrated how social interactions, such as observing the frustrations of other composers, have prompted participants to reflect upon their use of notational communication. This research has also shown that composer-participants, by participating in rehearsals, modify their communication to address issues that can only manifest through performance due to the performer's creative role in graphic composition. Thus, by having an expansive approach to studying musical communication, this thesis demonstrates the social nature of graphic composition as a practice.

This chapter has also demonstrated how the sociability of graphic composition affects stages ranging from conception to performance. In the composition process, participants draw upon past observations to consider how performers will receive the notational instruction. In the rehearsal stages of a graphic score, participant-composers describe speaking directly with performers about their compositional aims. The significance of this should not

be overlooked. Compositions within Western art traditions, including improvised musics such as jazz, are typically composed so that pieces can be rehearsed and performed outside of the composer's presence (Berliner, 1994, pp. 64-65; Goehr, 1992, p. 225). That the participants' experiences so often involved direct contact between composer and performer indicates that graphic composition as a process is highly social compared to other forms of Western concert music.

The importance of interpersonal interactions in graphic composition is further reinforced by the importance that graphic score composers place on composing for specific individuals and being familiar with the performing musicians (chapter 5). Research into social identity shows that the perception of competency and favourable identity characteristics contribute to effective in-group communication (Bandura, 2002a, p. 271; Tajfel, 1978a, p. 39). The belief that their messages would be understood by a knowledgeable in-group member likely contributes to the importance that composer-participants place on selecting and knowing the performing musicians. In this way, the communicative needs of both the composer and performer are achieved via an interpersonal relationship, even when that relationship is limited to the composer's knowledge of the performer's musical abilities. My own output demonstrates that one can create a graphic work without specific individuals in mind. However, I would still be selective about who I chose to perform these works and would wish to communicate with these performers directly. I

would also be reluctant to select a performer without knowing their experience with and attitudes towards graphic notation, as research by Sullivan and Cantwell (1999) has shown that these skills are not commonplace (pp. 252-254). In the next chapter, performing graphic notation, I address this knowledge deficiency.

Chapter 8 Performing a graphic score

8.1 Overview

This superordinate theme examines participant views on graphic score performance. In this chapter, discussions of performance extend beyond staged presentations to include the preparatory processes in which one learns a piece. This research thus investigates solitary practice on one's instrument, group rehearsal, score study, formulating a conceptual approach to graphic interpretation, preparations unique to a specific score, and performance techniques applicable to a range of works. The superordinate and emergent themes for this chapter are tabled below.

Superordinate theme:	Performing a graphic score
Emergent themes:	• Preparing for performance • Mapping • Disregarding the score

Table 8.1 Performing a graphic score

The first emergent theme discusses the preparatory stages of graphic score performance. Participants state that one must first learn any supplementary instructive material supplied by the composer. For performing works in which graphic notations do not have predetermined meaning, participants say that one must begin by assessing the score's visual characteristics. Participants also state that thorough preparation is essential to improvised performance, as it enables them to react quickly to unexpected musical events. This theme

concludes with participants' views on the value of knowing a composer's aesthetic and the importance of technical proficiency on one's instrument.

The second emergent theme explores mapping – the technique of assigning musical meaning to a graphic notation. Participants say that visual characteristics such as size, colour, latitude and shape often correlate to a specific interpretive strategy. However, without explicit instruction from the composer, the performer may choose to eschew these common interpretations. Participants also state that one may choose not to map specific meaning to a graphic prior to performance.

The last emergent theme examines situations in which one may deliberately deviate from a graphic score's performative directives. Data indicates that participants may prioritise improvisational interactions over the formal structural components of a composition. This decision often depends on one's improvisational skill, musical identity and knowledge of the ensemble's collective abilities.

8.2 Preparing for performance

Participants state that preparation is essential to graphic score performance. As John Lindberg asserts, 'It's *all* about the preparation.' This viewpoint coincides with conventional ideas about performance: difficult music requires work on the part of the performer. To explore how this axiom applies

specifically to graphic composition, I present findings on the importance of preparation as well as specific preparation strategies.

8.2.1 Learning new determinate features

As discussed in chapter 7, participants state that preparing a graphic score often entails learning and understanding the score's determinate features. As Robert Black states, 'Let's understand that [the score's instructions] first [as] these are your tools [needed for performance]'. However, in addition to internalising notational meaning as intended by the composer, familiarity with a work's determinate features enables performers to address performance issues that are not reflected directly in the notation. Barry Guy's account of rehearsing his graphically notated double bass duet, *Anaklasis* (2002) (fig. 8.1) demonstrates this idea.

> **BG:** [Stefano Scodanibbio and I] both had our scores ahead of time and […] the idea was to […] take each module [and] work out the precise character of the sounds. We then spent a day working together. A lot of the rehearsal was not only realising the technical aspects of it, but finding out *why* we're doing things and how we can best create complementary sonorities.

In Guy's example, preparing *Anaklasis*' determinate material lets the performers address how their creative personalities will work together in performance. Additionally, Guy's description of using rehearsal to discover '*why* we're doing things and how we can best create complementary sonorities' indicates a reciprocal creative exchange between composer and

performer as well as an acknowledgement of the performer's creative contributions. In this way, learning the score's notational system is crucial to developing a unique and personalised aesthetic approach to performance.

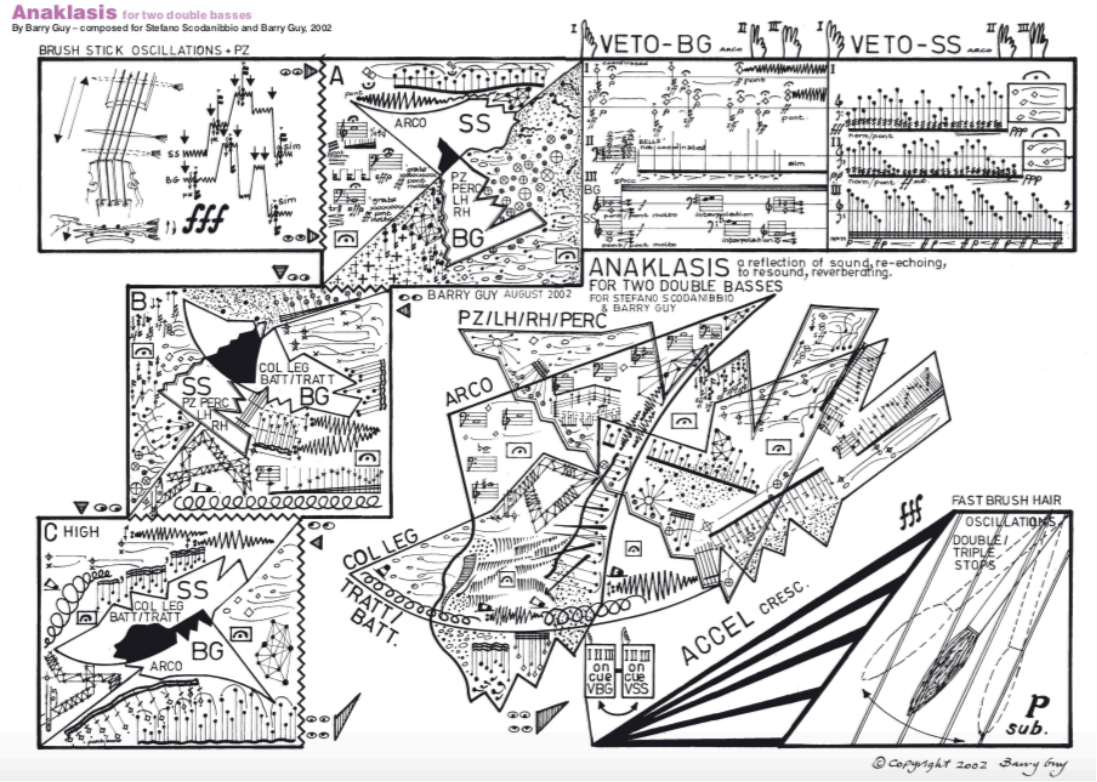


Fig. 8.1 Barry Guy, *Anaklasis (for two double basses),* (2002)

8.2.2 Assessing visual components of the score

Participants view preparation as essential to performing graphic notations without meanings pre-determined by the composer. The first stage of this preparation, which is common amongst all participants, is to note the visual features of a score. As Simon Fell explains, this process allows him to form a conceptualisation that aids him in performance.

> **SF:** So just make sure I've understood what the composer has given me, and […] I've looked at the score and thought a bit about

> what it is as an image, what, you know, what kind of image it is. What use of colour or lack of colour, you know, just anything you might look at with a visual image.

Fell assesses and considers a graphic score's visual attributes prior to performance. He later elaborates by saying that 'there's a certain kind of discipline and preparedness implied in graphic scores which is just the same as I would expect from a notated score'. These statements indicate that purely graphic scores are not merely stimulus for extemporaneous improvisation. As research into the values and practices of improvising musical communities indicates, practitioners of free improvisation typically prioritise spontaneously created musical structures rather than the reiteration of previously formulated ideas (Borgo, 2002, p. 184; Nettl, 1974, p. 17). Fell's description of assessing and reflecting upon a score's visual features implies a deliberation prior to performance that, per Wilson and MacDonald (2015), is often absent in freely improvised settings (p. 2). Having established that these preparatory processes distinguish graphic score performance from spontaneous improvisation, it is advantageous to examine how preparation can aid improvised graphic score performance.

8.2.3 Preparation enables flow

For Lindberg, preparation is essential for his improvised performance in Smith's *Mount Kilimanjaro*.

> **JL:** And it's been the greatest thing for an improviser because, when you're well prepared, you're ready to face anything that

> might happen and you don't have to think about it so you can *truly* improvise.

Lindberg says preparation enables him to 'face anything' and reach a mental state in which 'you don't have to think about it [improvising]'. Other participants offer similar accounts. Black advocates integrating improvisation into technique practice so that one can 'kind of let go of all your control'. Lisa Mezzacappa aspires to 'be in that moment'. For Guy, his best improvised performances are 'similar to being on a magic carpet'. Though not labelled as such by the participants, these descriptions resemble Csikszentmihalyi's (1992) concept of flow. Per Csikszentmihalyi, flow is an optimal experience occurring when a person directs the whole of their attention towards accomplishing a difficult task for which they believe themselves well prepared (Csikszentmihalyi, 1992, pp. 3-4). People who have experienced flow often report losing a sense of self and time as they apply themselves seemingly effortlessly to a complex activity (Csikszentmihalyi, 1992, pp. 63-66). This description is reflected in Lindberg's assertions that, when improvising, one needs 'non-cognisant thought' and 'reaction and action, as opposed to a cerebral calculation process'. In this way, he aspires to be in a state of concentration without mentally questioning what to play or how to proceed in performance.

Lindberg believes meticulous preparation is essential to attaining the ideal mental state for improvisation. However, he views preparation and

improvising as ‘two different functions’. He states that ‘thinking about what you’re gonna play’ occurs ‘in the preparation aspect.’ Once he has ‘prepared everything I need to prepare,’ he can perform at a point where he is ‘simply playing.’ These ideas coincide with Csikszentmihalyi’s requisites for flow: challenging, skill-based activities, clearly defined goals, and the feeling that one is exercising control over their environment (Csikszentmihalyi, 1992, pp. 49-50, 54-55, 59-60). When I ask Lindberg specifically how he would prepare to perform *Mount Kilimanjaro*, his answers become elusive. He jokes that he would ‘run ten miles a day, do eighty-five push-ups every morning’ then says, ‘So how do you prepare? Voluminously, fastidiously [laughs] and with great care.’ While these answers may seem opaque, I believe they contain a deeper meaning. Lindberg’s emphasis on comprehensive preparation indicates the performer should assess a piece’s performative requirements and construct a practice regimen that equips one to meet these objectives. To examine this process, I turn to my own preparations for improvised graphic score performance.

8.3 Preparing to improvise

To survey practice strategies for improvised graphic score performance, I will discuss my preparations for three compositions. The first two pieces, *Graphic Piece for Solo Bass* and *A.B. W.L.S.,* contain determinacies regulating performance, though they differ greatly in the degree to which a performer may creatively contribute. I must, however, acknowledge an interpretive and

perhaps preparatory advantage for these works. As the composer, I may fall back on conventional attitudes towards composer authority and claim that my preparations most accurately suit the pieces' compositional objectives. Whilst I do believe that examining how I prepare my compositions offers valuable insight into my creative output, I also wish to apply the findings to the works of other composers. For this reason, I will include preparations for p. 164 of Cornelius Cardew's *Treatise* (1967).

8.3.1 *Graphic Piece for Solo Bass*

Graphic Piece for Solo Bass presented a unique preparatory challenge in that it combines traditional notation with graphics that may be freely interpreted by the performer. Keeping with participant statements stressing the need to learn any determinate material, my first objective was to practice the traditionally notated phrases so that I could execute them correctly. I then considered that, per the piece's instructions, these phrases occur indeterminately and are often preceded and followed by improvised material. For insight into how to prepare for this, I turned to Lindberg's description of a piece in which traditionally notated parts were spontaneously texted to the performers via iPad.

> **JL:** You knew how to play them [the parts], but you didn't know when they would come or in what order or how long they would stay on your screen. Or, how you'd interpret them based on what he had texted to the other members of the ensemble […] I don't think when I play, but in *preparing* to play, um, that made the preparation a whole 'nother thing.

Though not providing specific details, Lindberg's statement denoted careful consideration of the piece's performance environment whilst practicing. To apply this to my own efforts, I assessed what could occur before and after each traditionally notated phrase. As the traditionally notated phrases were often preceded and succeeded by indeterminate material, I practiced improvising freely, then jumping abruptly to the traditionally notated phrases to gauge whether I could facilitate them in an improvised performance. That process led me to evaluate different fingerings, bow placements and other technical considerations that might impede performing the determinate material.

Next I evaluated how I would interpret the modules containing graphic notation. To do so, I considered Black's descriptions of a composer's 'sound world'. Black believes that a performer should know 'what their [the composer's] vocabulary is, you know, what their sound, what their musical world is', as this will 'influence how you, the choices you might make in deciding […] how it's gonna sound.' He states that deviating from this 'sound world' indicates that the performer is on the 'wrong track' and that their interpretation is 'not in line with their [the composer's] thinking'. Black's statements are significant, as they suggest he believes a performer, though given interpretive freedom, may still play a piece incorrectly.

To apply the 'sound world' concept to *Graphic Piece for Solo Bass*, I first needed to consider what compositional attributes would best indicate the aural aesthetic of this piece. As the piece contains traditionally notated phrases, I used pitch relationships to establish its sound world. To apply this to performance, I decided that improvised pitch material should correlate to the pitch structures of the determinate material. I revisited the theoretical structures of the traditionally notated phrases, which originate from two separate tone rows. I then began practicing each row forward and in retrograde, eventually working to transpose and invert each pitch class set according to 20th-century compositional practice. Next, I practiced improvising by limiting myself to pitches deriving from these permeations of the two rows. In this way, when improvising in performance, I could retain the tonal character established through the determinate material. From there, I applied this process to the indeterminate modules, practicing each one separately. For example, when practicing a module containing only the word 'PIZZ', I improvised *pizzicato* using permeations of the two rows. Likewise, when practicing a module labelled $\frac{5}{4}$, I improvised using the two rows in five-four time. Once I had worked through all the modules, I performed the piece in its entirety. In these ways, I drew from participant data to inform my preparations of determinate and indeterminate material.

8.3.2 *A.B. W.L.S.*

A.B. W.L.S. requires a different preparatory approach. Though containing no traditionally notated phrases, the written key specifies the meaning for each category of graphic (app. 6). In the first category, traditional five-line staffs with curved lines indicate that the performer should improvise melodically in a way that reflects their subjective impressions of the musical worlds of Anthony Braxton and Wadada Leo Smith (fig. 8.2). For the second category of graphics, coloured circles indicate textual improvisation (fig. 8.3). Each colour correlates to a quality that I associate with Braxton and Smith (ex. intensity, wisdom). These descriptors are meant to metaphorically inform the textural improvisations.

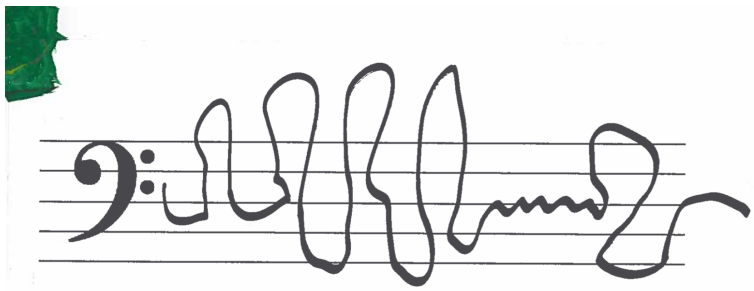


Fig. 8.2 Russell Wimbish, *A.B. W.L.S.*, excerpt, (2018)

Fig. 8.3 Russell Wimbish, *A.B. W.L.S.*, excerpt, (2018)

In preparing the first category, I relied on typical means of studying an artist's music: score study, transcription and listening to recorded output. I then practiced improvising in a manner that I felt linked to the melodic vocabulary of Braxton and Smith. The second category was informed, conceptually and in preparation, by Lindberg's account of Smith's *Mount Kilimanjaro*.

> **JL:** So there's some stuff, like, in *Mount Kilimanjaro*, for example, where there'd be some designations, you know, for uh, playing a velocity that's, very uh, slow, and a texture that's very thick. It's a lot less specific. […] So then, in preparation, and that's, you know, you know, it's almost like going in to a laboratory and having trial and error. […] Then I would, you know, in the course of practice, think of things that could be thick and slow. And then I may use, I may have an arsenal of those. You know, I might have, let's say, seven of them that I came up with and I think, 'Boy, these, these, any of these seven might work really good depending on what's happening. And I might use them, or I might not. I might come up with something else in the moment that's none of them. But it certainly would be informed by having practiced and prepared those seven.

In this example, experimentation was part of Lindberg's preparation process. He developed techniques with sounding properties he believed fit Smith's designation of 'thick and slow'. By preparing several options, he could select sounds during an improvised performance that best fit with the piece's other components, which he says were 'very different every time.'

For *A.B. W.L.S.*, I applied this data directly to my own preparations. I experimented with sounds that I believed matched the qualities represented by each colour, documenting each one in a notebook. Indeed, the compositional idea of graphics representing descriptors that are subjectively

interpreted by the performer derived from Lindberg's account. As such, the ideation of this compositional feature originated from a description detailing how to prepare for it.

8.3.3 *Treatise*

Cardew's purely graphic score *Treatise* offered a distinct preparatory challenge. As it was published with no supplementary composer instruction (Cardew, 1967), my preparations were informed by participant data as well as my past musical training. I began by following the process described in 8.2.2 of scrutinising the score's visual features. Of interest was Cardew's inclusion of traditional notation (fig. 8.4). As Fell states, the addition of disambiguated notational symbols within a graphic score deserves special consideration.

> **SF:** I think it's, it's a very strong ingredient to add. As soon as you add that specificity, you, you immediately force a relationship with that material upon the performer, and a relationship which is much more explicit and comprehensible than any relationship with a, with a visual, purely visual abstract image, so that you either, you know, ok, you either, did you play those? Did you *not* play them?

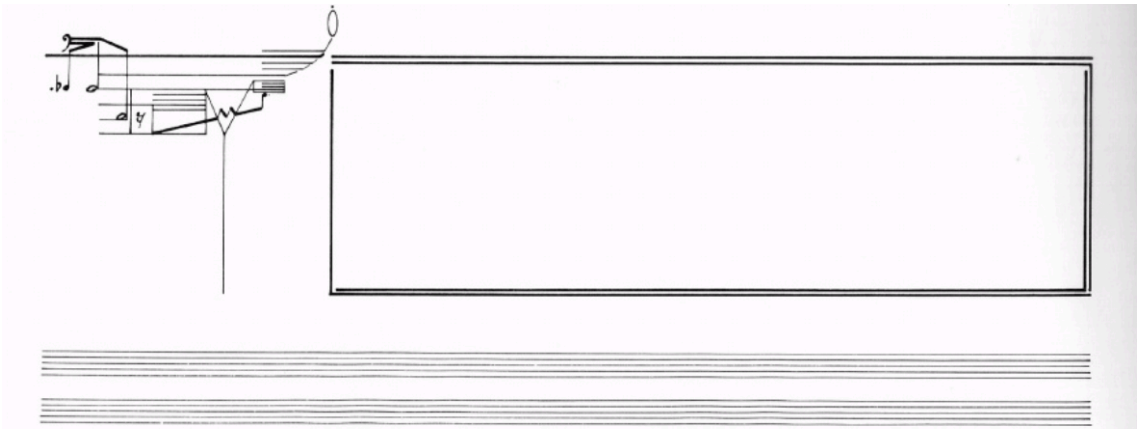


Fig. 8.4 Cornelius Cardew, *Treatise,* p. 164, (1967)

For Fell, pre-associations with traditional notation are difficult to excise from a performer's past experiences. Furthermore, asking 'did you […] did you not play [the notations]' suggests he views these associations as potential indicators of correctness in graphic score performance, or at least that justification is needed for not addressing the notation in one's interpretation.

When developing an interpretive approach to *Treatise,* I linked my performance to the traditional notations included on the page. For example, Cardew's inclusion of a bass clef influenced me to keep much of my playing in a low register. For the stemmed notes and rest (fig. 8.5), my interpretive strategy was that these notations serve as the beginning and ending points of improvisational phrases. Some aspects of the traditional notation were applied literally. I played the leftmost note as a flatted tone, though without predetermining the actual pitch. I designated the rightmost note a D written in treble clef, which served as the target note for an ascending improvised phrase. In addition to these interpretations, the latitudinal relationship between the white note-heads served as a contour indicator for an improvised phrase, thus leading the phrase to end on a lower pitched note than it began. In these ways, I integrated a contemplation of traditional notation with strategies for improvised graphic performance. [N.B. Excluded from this account are strategies for interpreting Cardew's original graphics. That topic is covered in section 8.4 using a different composition.]

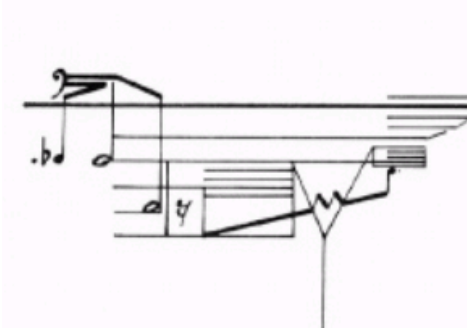


Fig. 8.5 Cornelius Cardew, *Treatise,* p. 164, excerpt, (1967)

8.3.4 Preparation, improvisation and the double bass

Participants believe that maintaining technical facility on their instrument is an important part of preparing for improvised graphic score performance.

> **SF:** My approach to a graphic score would be first of all, make sure, as the jazz musicians say, that my chops are up. So, just kind of physical exercises, I mean, you know this, you're a bass player. So, the bass is an instrument where, if you don't practice, you can't play the thing. It's, you can't just pick it up and say, 'Oh, I haven't played for a couple of months, but it will be fine.' No, it's physically quite difficult. So, you know, I'll be doing my, you know, I'm not a great person for keep fit and sport, but when I do the bass, it's very rigorous.

Fell elaborates on his instrumental practice. To begin, he states that he is 'not thinking about aesthetic questions too much'. Instead, he focuses on 'hitting a certain speed, getting a certain quality of intonation, or, you know, getting a certain, you know, technique with the bow' as well as 'play[ing] a lot of scales'. He says this approach is informed by traditional pedagogical methods, specifically mentioning 'the Simandl [*New Method for the Double Bass*]'. Fell describes his goal as 'just really getting into the best physical shape that I could so that in the performance, if I wanted to do something, I

would have the technique to do it'. By doing so, he strives towards a level of comprehensive preparation that, as an improviser, prepares him for unplanned musical scenarios.

In my investigation of what technical preparation may benefit improvised performance, I considered that Black, Fell, Guy and Lindberg indicate that traditional classical music methodologies influenced their musical development. These findings keep with studies demonstrating the importance improvising musicians place on practicing scalar material and established methodologies (Porter, 1998, pp. 33-34, 88; Berliner, 1994, p. 215). Indeed, one may examine literature limited to improvising double bassists and find ample evidence supporting the use of scalar patterns and traditional Western classical pedagogy (Dwyer, 2014, p. 136: Turetzky, 2014, p. 40; Uitti, 2006a, pp. 560-561; Uitti, 2006b, pp. 451-453). Of course, the graphic works discussed in this study differ greatly from the common-practice Western classical repertoire. However, the emphasis that participants place on traditional pedagogical methods indicates that these methods are still of value to the contemporary graphic score performer.

Applying these findings to my own preparations did not require significant modification of my existing practice routine. Daily practice included classical double bass solo repertoire, orchestral excerpts, scalar exercises (*arco* and *pizzicato*) and improvisational practice of repertoire within the jazz canon. In

this way, I endeavoured to, as Fell described, 'have the technique [to execute improvisational ideas]'. However, I did not limit myself to traditional practice. I experimented with harmonics, *col legno* techniques, percussive sounds and preparing the instrument by threading objects through the strings. As these techniques often do not have a pedagogical tradition, I drew influence from Black's description of teaching Jacob Druckman's *Valentine* (1969) (fig. 8.6), a piece that uses idiosyncratic notations to indicate playing the double bass with a mallet.

> **RB:** And somebody's doing something with the drum, you know, the mallet, and you're trying to figure out that first page.
> **RW:** Yeah
> **RB:** Right. And it's so, so um, new for some people. For *everybody* the, the first time.
> **RW:** Yeah.
> **RB:** And it's very frustrating to do, and I say, 'Why don't you just *improvise*. Get, get the mallet and just improvise on the instrument so you get familiar with the sounds, and you get, you get a physical familiarity with tapping the instrument in all these different ways.' And you're not trying to do something specific and right –
> **RW:** Ok.
> **RB:** - so you can be a little more free.
> **RW:** Alright.
> **RB:** And you can, you can really reduce the anxiety and the stress level as you get used to the material. […] So I think that's a way to get used to, to the physical things of something that's unfamiliar, and it's also a good way to get used to the sound of something that's a little unfamiliar.

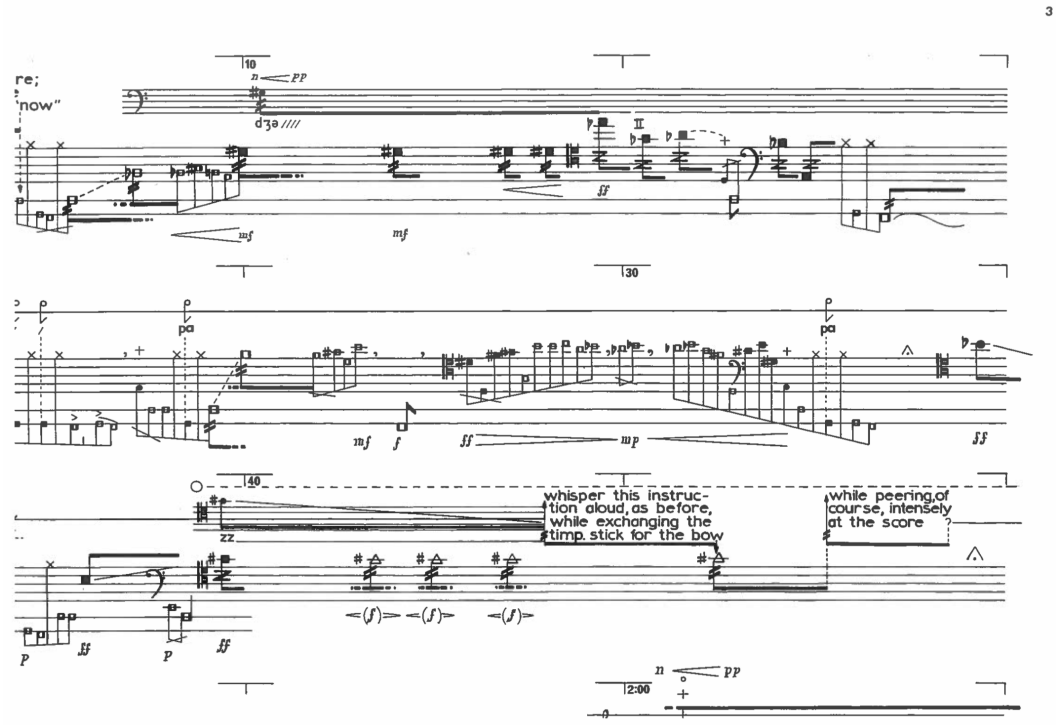


Fig. 8.6 Jacob Druckman, *Valentine,* p. 2, (1969)

Black's comments illustrate the use of improvisation as a tool to familiarise oneself with unfamiliar playing techniques. For Black, *Valentine*'s technical demands are so foreign that even having a goal is counterproductive in the early stages of learning. However, using improvisation as a practice tool enables the performer to develop the physical coordination and aural contextualisation needed to begin learning the piece. This use of improvisation helps the student avoid what performance coach and former Cincinnati Symphony principle double bassist Barry Green (1986) has termed a 'trying state' (p. 45). Per Green, a trying state is a mental state that distracts from the awareness of physicality that one must have during performance. When a musician stops trying and brings awareness to bodily

movement, Green states that they can ‘subtly shift to a more relaxed and accurate kind of performance’ (p. 45). Returning to *Valentine*, Black states that once physical awareness and familiarity with the new techniques have been achieved, the student can ‘go back to the score and start to do the specifics.’ In that way, people inexperienced with the technical demands of a contemporary work can avoid anxieties that are often a barrier to learning and performing new material.

I integrated Black’s instruction to ‘get a physical familiarity’ with new techniques into my daily practice of extended and experimental techniques. Doing so was helpful even when there was no direct correlation between a technique and how I might eventually apply it to a graphic score. As such, my technical practice not only aimed to facilitate improvisation, but also to directly utilise improvisation as a developmental process.

In these ways, I prepared technically to perform graphic scores. Significantly, though these scores made unique interpretive demands, the technical proficiencies needed to perform them were cultivated through performing other musical traditions, i.e. classical, jazz or free improvisation. I did find exceptions to this observation. Druckman’s *Valentine* and Cage’s *59 ½” for a String Player* required specific physical gestures applied to the instrument that could serve as incubators of new techniques not found in other musical environments. But for scores in which all specific aural attributes derived from

my interpretation, that observation rang true. It also underscored Fell and Lindberg's emphasis on extensive preparation. As there were no specific directives of what to play, my interpretations derived from past musical experiences and current technical abilities.

8.4 Mapping

As Mezzacappa explains, mapping is the procedure in which a performer assigns meaning to graphics not defined by the composer.

> **LM:** So, looking at, you know, this one is gonna go left to right and uh, and this colour is this tonality or these series of intervals um, this texture is this technique. So mapping techniques, textures, sonorities um, if it's an ensemble, ways of interacting, dynamics, um, durations, directionality, all, you could just map all of these things onto something on the something that you *see*.

Per Mezzacappa's description, mapping may include directionality (how one reads the notation), technique, timbre, specific tonalities, ways in which the performers interact and temporal procession. This range of interpretational possibilities invites scrutiny on the mapping process. This research therefore explores participant statements on prevalent mapping strategies.

When asked, participants state they observe common approaches to mapping graphic notation (table 8.2).

Visual quality	Participant	Mapping Strategy
Colour	Robert Black	If I saw it [the score] go into the red and the yellow and the bright colours like that, then I'd probably think more *ponticello* kind of sounds.
Colour	Robert Black	If it [the score] had gotten to the blue and purple, I'd probably think, 'Oh, that's got to be *sul tasto* or a darker sound or something like that.'
Colour	Robert Black	You can say also when it [a colour] gets bright, that means that has speed. It'll go faster. Brighter and faster […] So, you can start to combine things in that way.
Placement	Barry Guy	The top of this particular graphic indicates high pitch area; the middle suggests mid-range instrument sonorities and the bottom obviously invites low register articulations.
Shape	Lisa Mezzacappa	To notate a pointillistic texture with a bunch of tiny dots is something that nobody invented; everybody just does that sometimes.
Shape	Lisa Mezzacappa	Something really gnarly and dense and continuous [is represented by] a bunch of squiggly lines, like that's something you see a lot, too.
Size	Simon Fell	A larger blob might be louder than a smaller blob.
Size	Robert Black	I think something that's big or bold […] generally is interpreted as loud […] or something strong.

Table 8.2 Mapping strategies

In the above table, participants relate common mapping strategies and postulate that a graphic may, in Black's words, contain 'multiple mappings'. Often, and as discussed in section 8.3.3, these strategies have a corollary in conventional notation. In Guy's example, latitudinal placement indicates pitch

register. For Mezzacappa, a dot without a hollowed note head implying extended duration and a beamed stem implying melody might indicate to the performer a short, isolated and 'pointillistic' sound. Likewise, Mezzacappa says that unbroken 'squiggly lines' could imply beamed notes, a slur or *glissando*, thereby signifying continuous sound. Additionally, the visual similarity to a *glissando* could signal to the performer 'texture' rather than melody. It is important to note that these observations vary amongst participants. For example, unlike Black, Mezzacappa sees no common interpretive strategy for colour. Nonetheless, this research indicates that strategies for graphic interpretation may often be influenced by traditional notation, an idea that is supported by current musicological research. Bamberger's (2005) study on children's strategies for developing original musical notation shows that the semiotics of conventional notation often correlated to the syntactical properties of new notations, which Bamberger refers to as a 'double classification strategy' (pp. 159-160). What is significant in this research is that, in the absence of explicit direction, the performer may or may not choose to adhere to these conventions in their interpretation.

8.4.1 Mapping and creative output

This section examines how participant data influenced my mapping strategies for the purely graphic piece *Imachinations*. To begin, I needed to consider data indicating that is not always necessary to map specific meaning prior to performance.

> **RB:** How do we want to interpret what we see? […] Do we wanna actually come to an agreement that this one means this sound or it's, you know, if it looks like this it's gonna be a, a non-pitched sound or something like that. Or, or the other way is to decide we don't want to, we don't wanna be that specific.

Per Black's comment, my first task was evaluating if mapping specific meaning in advance of a performance would suit my compositional objectives. I originally conceived of *Imachinations* as a purely graphic score which could be aurally recognisable across multiple performances. I decided that this could best be achieved by mapping aural characteristics onto the notations, then documenting and retaining these meanings for subsequent performances. Having reached this decision, I then considered how data on specific mapping strategies would influence my interpretations.

The data in table 8.2 indicates participants perceive common links between visual characteristics and musical interpretations. Size often correlates to volume or prominence; colour to timbre and velocity; latitude to pitch; shape to density. However, as Fell states, 'There's nothing necessarily, in a graphic sense, which might indicate [these correlations between image and sound]'. Thus, though common interpretations exist, purely graphic scores offer no explicit directive to adhere to these commonalities. At the beginning stages of mapping, I found that information both practical and liberating. I felt I had a solid grounding on common mapping strategies, yet at the same time I could deviate from these interpretations if I wished.

Next, I contemplated the aural properties I envisioned for the piece. As I wanted the piece to be largely textural, I resolved that my interpretation of the graphics would rely more on techniques and effects rather than melodic and harmonic structures. I then began mapping techniques and textures to the piece's graphics. Upon reflection, I found that my interpretations aligned with commonalities described by the participants linking size to prominence and colour to timbre and velocity. For example, the centre graphic (fig. 8.7) was mapped as quick *glissandi* played with a *ponticello* technique, producing rapidly fluctuating harmonics and overtones. For the lower left-hand circles (fig. 8.8), thick colour saturation and darker hues corresponded to thicker textures (double stops) in the lower register that were articulated with a slower bow stroke. Furthermore, mappings for larger reddish circle contrasted with those of the smaller, bluish circle (fig. 8.8) in that it was temporally longer, used higher pitched tones and contained brighter timbres. Though these mapping techniques coincided with the data, I found myself asking: were they indeed derived from my research?

Fig. 8.7 Russell Wimbish, *Imachinations,* excerpt, (2018)

Fig. 8.8 Russell Wimbish, *Imachinations*, excerpt, (2018)

Though I endeavoured to be rigorous in my documentation and subsequent reflexivity of mapping strategies, I found it difficult to conclusively confirm from what source these mappings derived. Was it participant data? The realisation of imagined sounds as I was composing? The result of cultural influences that exist independently of musical training? Likely it was a

confluence of all three. Through my analysis of the data, I became deeply familiar with specific mapping strategies shared by the participants. During analysis, I contemplated how I might apply these strategies to my own playing. Concurrent with this analysis, I was contemplating my graphic compositions for double bass and the sonic possibilities for this solo repertoire. And, as discussed in 8.3.4, my musical training and personal background have influenced my interpretations. I concluded that my interpretive approach was a combination of formal study (including analysis of data), environment and personal creative effort.

8.5 Disregarding the score

Until now, this chapter has examined how participants engage with graphic scores as performers. Typically, participants abide by a score's directives, be they explicit or subjectively interpreted. However, there are exceptions. As discussed in chapter 7, a performer may amend a graphic score's performance directives to better suit available resources, personal preference and musical identity. Data also suggests participants may, during performance, spontaneously decide to disregard the score and prioritise improvisational interactions over determinate structural components.

> **RW:** Do you think that there's ever a point where it's ok to disregard the score and just kind of go with what you hear?
> **LM:** I think usually. [laughs]
> **RW:** Alright.
> **LM:** Don't tell any of my musicians! [both laugh] But, but yeah, usually.
>
> […]

> **LM:** We're all just trying to make a piece and play together, so I think, in a sense, we're playing together first and we're keeping an eye on the score. I guess it depends on how prescriptive the score is but, I think, I think we're uh, using the score to work together and make something happen together sonically, as opposed to the score, isolating us in some kind of weird non-interaction vacuum or something.

Mezzacappa's statement that 'we're playing together first' indicates the primacy that she gives to improvisational processes. Strict adherence to a score's compositional parameters is, in her words, secondary to '[when the music] goes somewhere unexpected, that seems more the *goal*'. This divergence from notation is unplanned and depends on aural evaluation. For Mezzacappa, what she hears in performance is 'mostly what's influencing you'. To illustrate the point, she relates an anecdote of how aural cognition changes performer interpretations of the written score.

> **LM:** I can definitely think of moments where you're looking at the score, you grab a dowel and turn your bow over, and then somebody does some sound and you're like, 'Nope!' [both laugh] And you drop them, and you start to do some pizz thing!

Though the score indicates to Mezzacappa a specific musical gesture, she modifies her performative approach to accommodate a newly introduced sound. This illustrates how, even when engaging with a graphic with no pre-determined meaning, awareness of concurrent musical events may cause a performer to disengage from interpreting notation and react with their sonic environment. In those ways, improvisational processes may take precedence over compositional structures.

Mezzacappa is not alone in acknowledging the possibility to disregard the score during performance. Guy jokingly acknowledges that performers of his music 'often do' disregard explicit instruction in favour of their own judgements of how to improvise. Lindberg states that, during what he judged to be a poor performance of his music, he 'went to every music stand and turned the music over', as he judged that improvising freely would be an improvement over the current performance. Thus, prioritising improvisation over notation is a common attitude among participants and might indicate widespread practice in improvising musical communities.

There are several insights to be gained from participant accounts of disregarding the score in favour of improvised musical activity. First, Guy, Lindberg and Mezzacappa each have strong musical identities as improvisers. As musical identities can reciprocally influence social behaviours and practices (Hargreaves *et al*, 2002, p. 12), the participants' musical identities as improvisers may explain why the participants are willing to disregard the cultural norm of adhering to the composer's directives. However, this norm is not abandoned completely. When asked about dismissing the score, Guy, Lindberg and Mezzacappa each use their own compositions as an example of how this practice is common and acceptable. They do not mention disregarding the directives of another composer. This again points to the influence of the Romantic ideal that it is the composer, not the performer, who is the best arbiter of the musical direction a composition

should take. And lastly, collectively abandoning the score, even temporarily, can only be done with performers who are comfortable improvising without predetermined structures. Therefore, one will need to know the abilities of the other performers, reinforcing the importance of social processes and interpersonal relationships in graphic score performance.

It is notable that disregarding notational directives is not usually practiced in the Western classical tradition of which the early graphic composers claimed lineage. However, as musicologist Robert Walser (1993) writes, jazz performance is typically characterised by the expectation that a performer will alter, if not abandon, a composition's melodic and harmonic structures (p. 351). In addition to their musical identities as improvisers, Guy, Lindberg and Mezzacappa each have a performance background in traditional jazz. This could indicate why they are willing to engage in a practice not associated with the Western classical tradition.

8.6 Conclusion

This chapter examined participant views on graphic score performance. Participants stressed the importance of preparation, stating that one must first learn explicit instruction provided by the composer, engage with the score's visual characteristics, and develop a practice regimen that comprehensively addresses performance challenges. This chapter also discussed strategies for assigning meaning to graphic notation. Lastly, it

explored situations in which a performer may intentionally disregard a score's written directives and instead prioritise improvisational activity over the explicit compositional directives of a score.

By looking at methods of graphic score performance, this chapter investigated the commingling of the composer and performer's voice within a single composition. Keeping with the findings of previous chapters, the data indicates that creative agency is distributed between composer and performer, thus challenging the Romantic ideal of the composer as the sole originator of a work. And like chapters 5 and 7, findings in this chapter demonstrate that, although participants recognise the performer as an active co-creator in graphic score performance, they view the composer as the foremost compositional authority of a work. Hence, this chapter has shown that participants expect a twofold outcome in graphic score performance. First, that a performance will adhere to the composer's directives and aesthetic. Second, that the unique creative voice of the performer will be present in performance.

This chapter has also shown that performers' contributions to graphic performance are, and are expected to be, highly personal. Participants personalise their approach to performance through idiosyncratic instrumental techniques, personalised approaches to graphic interpretation, and individualised reactions to the concurrent contributions of other performers.

These findings indicate much variety within graphic performance and suggest why participants had difficulty making generalisations about how to perform a graphic work.

The findings of this chapter have had a significant impact on how I perceived distributed creativity in my compositional output. As also indicated in chapter 7, though I could attempt to influence performers of my compositions, certain aspects of indeterminate performance would likely to be out of my control. Because of that, for each composition, I have considered what aspects of performer agency I wished to tightly control and what deviations, if any, I should be willing to accept. I therefore embedded some compositions (*Duo for Melodic Improvisers*, *Graphic Piece for Solo Bass*, *Machrie*, *Maria Ave.*) with determinacies that allow me to perceive my own creative imprint regardless of the specific contributions of the performer. For others (*A.B. W.L.S.*, *Imachinations*, *Le temps est écoulé!*), I decided that I would need to be accepting of performer interpretations and decisions, even if that meant not recognising the composition as my own. This process has resulted in a better understanding of Fell's idea, discussed in chapter 7, that graphic images without composer explication cannot communicate specific ideas. This understanding in turn influenced how I revised the visual characteristics and method of performance for each score. Hence, composing and creating graphic notations has shaped my understanding of the data.

This data has indicated that, in a process that resembles Csikszentmihalyi's (1992) concept of flow, participants seek a level of preparation that enables them to effortlessly execute ideas as they occur. To facilitate that improvisational skill, participants emphasised comprehensive practice, thorough knowledge of the compositional framework and instrumental technical facility. Per these descriptions, I used traditional pedagogical methods and repertoire to maintain technical facility and devised technical exercises derived from the performance requirements of my creative output. Additionally, per Black's statements, I used improvisation as a tool to develop fluency with non-traditional techniques. In these ways, I sought to enable the fluent and effortless use of improvisation in performance. But – did I achieve a state of flow during performance?

For the pieces discussed in this chapter, no. I do not, however, believe this was due to lack of preparation. To achieve flow, one must direct the whole of one's psychic energy towards a challenging task (Csikszentmihalyi, 1992, p. 59). When I performed these graphic pieces at academic conferences, I found my attention split between performance, discussing the works and monitoring the length of my presentation to avoid surpassing my allotted time limit. I thus found it difficult to devote the whole of my attention towards musical performance. Nonetheless, I felt my improvised performance was improved by aiming for comprehensive preparation as described by the participants.

This chapter has explored graphic score performance, noting the importance of distributed creativity between the composer and performer. It has also demonstrated that performer contributions are greatly personal, which makes generalisations about graphic performance difficult to assert. While chapter 8 has primarily examined graphic performance from the perspective of a single performer, the next chapter, intergroup communication, extends these concepts to an ensemble setting.

Chapter 9 Intergroup communication

9.1 Overview

This chapter looks at how ensemble members communicate with each other in performance of a graphic score. Like chapter 8, the term performance includes staged musical presentations as well as rehearsals and other developmental phases of a concert piece. This broad definition is necessary, as the data indicates that most intergroup communication occurs during the preparation of a piece. Unlike the previous chapter, this superordinate theme does not examine specific performance outcomes such as mapping strategies or methods of graphic interpretation. Rather, this chapter explores how participants communicate, the objectives of communication and the importance placed on resolving interpretational differences. The following table lists the superordinate and emergent themes.

Superordinate theme:	Intergroup communication
Emergent themes:	• Collective decision making • Building consensus through performance

Table 9.1 Intergroup communication

The first emergent theme, collective decision making, examines how participants establish a group consensus on graphic interpretation. Participants state they often use verbal communication to supplement textual communication provided by a composer. This analysis indicates that the importance of a graphic notation may reside more in its ability to stimulate

intergroup discussion than its actual sounding properties. This theme also discusses how ensembles collectively form an interpretive approach to graphic notations when their meaning is not predetermined by the composer. Lastly, this theme looks at how participants attempt to resolve interpretational differences.

The next emergent theme, building consensus through performance, analyses how participants establish cohesion through the process of performing a graphic score together. For some participants, this is a preferred means of building consensus, as it enables performers to address and amend sounding events as they occur. Participants also view this communicative medium as an effective means of conflict resolution.

9.2 Collective decision making

Participants state that they often collectively decide upon graphic notational meaning and methods of score interpretation. It is therefore essential that they develop strategies for intergroup communication and conflict resolution. It should be noted that these strategies cannot be universally applied. As Simon Fell states, the preparation methods and communicative processes one uses 'depend on the context of the performance'. Nonetheless, examining how participants communicate and what they try to accomplish through communication enables this research to explore the role of

intergroup communication in formulating an approach to graphic performance.

9.2.1 Supplementing communication from the composer

Data indicates that participants often use intergroup communication to supplement communication from the composer. In the following example, John Lindberg's group, String Trio of New York, communicates verbally to facilitate a better understanding of the textual instruction provided by composer Wadada Leo Smith.

> **JL:** And, so we noticed – we're looking at it [Smith's composition *Billie: The Queen of Holiday* (1994)] before we play it – [laughs] we notice that this one symbol says, 'The shortest possible amount of space.' And then we looked at the score and we're trying to find it, and we only see that one place: at the very beginning. It's the first musical gesture notated. So we had to sit around for quite a while trying to figure out how do you start a piece with 'the smallest possible amount of space.' What does that even mean? How do you, and then, how do you do it? And is there one way of doing it or endless ways of doing it, right? So before we could even get to the point of making the *sound*, we really had to grapple with, what is the concept of space, and what would the shortest possible amount of it possibly mean? […] Now if it started with a quarter rest, for example, we wouldn't have had to have a discussion about that, really.

The ambiguous representational properties of the opening graphic require a lengthy group discussion on how to interpret it in practical terms. Lindberg believes this conversation would not be necessary had Smith used traditionally notated rests, as traditional notation provides a consistent framework for measuring duration. Of course, this type of intergroup

discussion is not unique to graphic composition. Ensemble rehearsals of fully notated works typically rely on verbal communication to elucidate notational and para-notational directives (including rhythmic durations) within a score (Sawyer, 2005, p. 47). However, the significance of Smith's graphic may be that it facilitates such discussions.

For Lindberg, the opening graphic's significance derives not from its sounding properties, but in providing a catalyst for creative engagement. Certainly, there is little musical justification for its inclusion. It is audibly imperceptible in the recording session for which it was commissioned (String Trio of New York, 1994). Moreover, Lindberg never mentions the eventuated sonic properties of this graphic. He does, however, elaborate on the creative results of the intergroup discussions. He states that engagement with Smith's notation 'forces you into a level of creative thinking before you play, and then creative reaction while you're playing'. This idea is not new to graphic composition. In his earliest graphic works, John Cage uses graphics and textual instruction as a means of engaging the performer's creative impulses, with the notation's aural properties being a secondary concern (Gann, 2011, p. 59). Significantly, Lindberg's account differs from the Cagean tradition, as Cage's professed musical aesthetic did not include improvisational interactivity (Lewis, 2002, p. 99; Cage & Charles, 1981/2000, pp. 171-172). Lindberg, though, concludes that engagement with Smith's graphic aided

improvisational performance, saying ‘every interpretation [of Smith’s piece] was, on a volatile level of difference as to length, how everyone interacted’.

The above account by Lindberg again highlights the importance of social processes embedded within graphic notation (see chapter 5). Smith’s opening graphic could potentially be dismissed by a performing ensemble as trivial. However, the interpersonal relationship between Smith and String Trio likely impacts upon how String Trio responds to Smith’s graphic. Per studies by social psychologist Henri Tajfel, individuals typically favour and reward people who are perceived to be members of one’s own in-group (Tajfel, 1978c, pp. 77-83). This being so, as members of the same musical community with lengthy collaborative relationships, String Trio of New York rewards Smith’s compositional efforts by contemplating all notational meaning. Thus, graphic notation acts not only as a communicative medium from composer to performer, but as a catalyst for discussion amongst performers.

9.2.2 Establishing an interpretive consensus

In addition to clarifying composer directives, participants use intergroup communication to create strategies for performance. When asked, Black states that his preparation techniques in a group setting are the same as when playing solo.

> **RB:** I think part of the preparation is to do what, with um, with the other people that you're working with, that same way that I described doing it when I'm first looking at a score by myself.
> **RW:** Ok.
> **RB:** And that is to […] as an ensemble or a duo or something, talk about the elements.

Black states that ensemble members prepare to perform a graphic score by first discussing its visual elements. The data indicates that this practice is common to all participants. As he explains, these discussions can enable a group consensus on how to apply sounding qualities to specific visuals.

> **RB:** I can say, 'That looks big and small.' And you can say, 'That's close and far away.' Um, but we might decide big means loud and close means loud.
> **RW:** Ok.
> **RB:** You know, and then you kind of, 'Ok, so we're looking at it differently, but we feel that we were, the results are the same. We have the same mapping like that.'

In Black's example, verbal communication helps create a shared interpretive response to graphic notation. Through spoken clarification, the performers collate their individual mapping strategies, realising similarities and differences in their interpretations. As Lisa Mezzacappa explains, knowing how aural properties have been mapped onto graphic notation can help guide an ensemble in performance, particularly in discerning temporal process. She states that an ensemble can 'know we're moving through time because a new sound has entered and that's how we know that we're no longer in the last section. The new section is *triggered* by an aural event.' In this way, the ensemble relies on previously established mappings to discern

temporality in a score without traditional notational markers. Through intergroup communication, the ensemble can assess the score's visual components, map musical meaning to the graphics and then use this shared knowledge to navigate the score.

Factors external to the score can also impact group strategies for score interpretation. For Fell, the aesthetics of the composer influence the degree to which an ensemble verbally engages with the notation. He says that for composers with an interest in 'unrelated simultaneous activity', the ensemble could decide to 'just do it and see what happens'. Conversely, if the composer 'had a more conventional approach to ensemble work', he would be 'more inclined' to verbally discuss with other members of the ensemble what the score 'makes me think'. As such, the interests of the composer determine the amount of intergroup communication and the degree to which the ensemble applies specific meaning to graphics. In Fell's estimation, the composer interested in 'unrelated simultaneous activity' is likely to have evaluative criteria other than aurally perceivable group cohesion. The composer who leans aesthetically towards musical cohesion likely wants the ensemble to have a unified approach to graphic interpretation. Though Fell does not say what that might be, the above examples from Black and Mezzacappa offer insight into how ensembles use communication to establish consensus in interpretation and performance. Regardless of the interpretive approach, the ensemble responds appropriately to the

conceptual and aesthetic interests of the composer. Of course, letting the aesthetics of the composer guide performative approach doesn't preclude interpretive differences within the ensemble. With that in mind, this research examines strategies for conflict resolution.

9.2.3 Resolving differences

Participant responses indicate that it is common for members of an ensemble to have contrasting ideas about how to interpret a graphic score. Not surprisingly, methods for conflict resolution often depend on the performance environment. In many cases, the presence of the composer can effectively settle interpretational contretemps. Barry Guy states that, when conducting his graphic works, 'the ensemble […] respond[s] very much to *my* instructions'. In such situations, the composer can serve as an arbiter of potential disputes. For pieces rehearsed or performed without direct composer input, avoiding highly specific mappings can help prevent disagreements.

> **RW:** How do you resolve those types of differences when, say, you see it one way, someone sees it another, […] how do you talk that through?
> **RB:** Well I think when, if that's the case, it, that depends on how you decide to, to interpret them in a, in a sound world-way. […] In my, my experience it's not, not been a lot of, […] 'We're gonna make this *mean* that'.
> **RW:** Ok.
> **RB:** And if we have a difference of opinion we're gonna have to figure out what it is.

The above quote suggests that focusing on the general qualities of a piece's 'sound world' can aid in avoiding disagreements. This example also indicates that, in Black's experience, ensemble mapping strategies are not exceedingly specific. As discussed in chapter 8, the common mappings put forth by Black correspond to musical attributes he describes as 'loud', 'strong', 'speed', '*ponticello*' and '*sul tasto*'. Though these terms represent perceptible musical qualities, they can each be enacted in a multitude of ways. Should disagreements arise the ensemble can attempt to resolve them and 'figure out what it [the problem] is' through additional conversation.

Though Black never explicitly states this, my experiences as an improvising musician lead me to believe Black is implying that internal conflict is less likely if the musicians believe they have the freedom to contribute in a way they find rewarding. Indeed, studies on both social conflict and jazz improvisation tend to corroborate this idea. As Tajfel explains, one's voluntary group membership often depends upon the degree to which an individual perceives this membership to be advantageous (Tajfel, 1978a, p. 39). One important means of evaluating both the benefits of group membership and the value of the group itself is the degree to which membership enables one's positive expectancies to be actualised (Tajfel, 1978b, pp. 68-70). Individuals can avoid conflict and frustration when they believe that their group membership does not contribute to negative outcomes (Tajfel, 1978a, p. 53; Tajfel, 1978b, p. 64). For improvising

musicians, one means of actualising a positive expectancy within group membership is the belief that they can contribute creatively and according to their personal aesthetic (Berliner, 1994, p. 418). Thus, avoiding overly specific (and thereby creatively restrictive) mappings in a graphic score performance can reduce intergroup conflicts by allowing the ensemble members to realise their expectancy for a positive musical experience.

The findings in this chapter show that Black's mapping techniques favour broad strategies for graphic interpretation rather than the application of specific tonal, rhythmic or motivic musical structures. Additional data suggests that this is a common practice, as participant descriptions of mapping strategies typically correlate to amplitude, texture, prominence and methods of interaction (see chapter 8). This is not to say that graphics are incapable of representing specific musical motifs or ideas. Orning's (2013) study of Helmut Lachenmann's solo cello work *Pression* (1972) reveals that not only do Lachenmann's graphics correspond to specific gestures, but the gestures themselves have only one correct performative realisation. A cellist herself, Orning writes, 'It might be seen as paradox with regard to his use of [graphic] notation, but for Lachenmann there is *one* right crush, *one* right pitchless sound, *one* right *col legno*, and so on' (p. 107). Clerc (2013) refers to this compositional process as 'sound towards score', that is to say, when graphics represent both a predetermined sound and the gesture required to

produce it (p. 114). However, this research shows that, when generated by the performer, mappings tend to be generalised rather than specific.

Though participants employ tactics for resolving or avoiding interpretational differences, Fell says that he is not adamant about reconciling these disagreements in advance of a performance.

> **SF:** Seeing if there's a consensus, not necessarily trying to force consensus, so if we find two different responses, ok, so we're gonna have, you know, kind of two ways of looking at this happening at the same time. Is that a problem? Should we try and work out something that we can agree on? Does it matter if we agree?
>
> […]
>
> **SF:** The resolution, and I mean this quite seriously, often doesn't happen.

Fell states that there are two reasons why differences may not be resolved. The first is the nature of a graphic composition. Fell believes that graphic scores grant 'a certain amount of license for divergence' amongst performer interpretations. He elaborates, saying 'the less specific the notation, the more you have to move away from controlling the outcome of the performance situation.' However, this is not 'necessarily a negative idea'. 'The interest', Fell says, 'is in what happens along the way, rather than achieving [a specific result]'. In his view, a unified ensemble approach which seeks to meet a defined goal is not the objective in graphic score performance.

Fell's second reason for why differences may not be resolved is that 'often you don't have time, really'. In performing with the London Improvisers Orchestra, Fell relates that he would often have 'a rehearsal in the afternoon and then you play the piece in the evening […] and you don't really have time to resolve, you just find a way of working through the piece'. Of course, limitations on rehearsal and preparation are a perennial concern amongst composers and performers. What is unique about Fell's perspective is that this problem – lack of resolving musical differences – is so recurrent in performance situations that it becomes a common extra-musical characteristic of graphic composition itself.

9.3 Building consensus through performance

As discussed thus far, ensembles use verbal communication to develop interpretive strategies for graphic score performance. However, verbalisation is not an all-encompassing means of coalescing an ensemble's approach to the music. For Black, the act of playing codifies ideas in a way that is not possible through verbal communication.

> **RB:** Ok, we understand that this is what it is and this is what we're looking at, and now let's play and see what we've got, and *then* let's start to work with the sound we have.

For Black, the experience of performing is the process that genuinely gives a group the means to come to a consensus on how a graphic work should be performed. This finding keeps with current musicological research on musical

communication and evaluation. Per Hargreaves *et al* (2005), musical meaning may only be established through the social evaluation of sound (p. 2). Though speech is a necessary preliminary, the performers need the experience of hearing and working with sounding materials to determine what is satisfactory and what is not. Similarly, as Lewis (2002) notes, evaluation of improvised performance must consider the context in which it takes place (p. 94). As such, if the performers are using improvisation in their interpretation, they may only assess their performance while it happens or after it occurs. This being so, if a group truly learns a graphic work through the act of playing it, are there other communicative benefits to experiential learning?

As Mezzacappa explains, ensembles may use graphic scores as a catalyst for individual and collective musical development.

> **LM:** I started working on it [a purely graphic score] a lot with a duo collaboration that I have with a drummer here in the Bay Area and, we just used it as a, kind of a springboard for working out ideas together, um, for mapping all kinds of information onto the scores. It was really very process driven kind of way of rehearsing and developing vocabulary and kind of ways of interacting together. Um, so we kind of just made it our own. We made up our own rules and they kept changing, and then sometimes we would just play one in a concert uh, without talking about the rules, but we had rehearsed so many different versions of it that we had some kind of a shared sense of the possibilities.

Mezzacappa states that the shared experience of repeatedly discussing, mapping and performing a graphic score with no predetermined meaning has helped the duo to cultivate individual strengths and develop an intuitive approach to ensemble performance. The score has become not just a piece

for performance, but a tool for pedagogical development. To be certain, this practice is not confined to graphic composition. In Western classical and jazz traditions, repertoire functions as a catalyst for musical development as well as a feature for staged performance (Heath, 2018, March 30, 45:28; Wilf, 2014, p. 216). What is unique in this example is that it is the performers who determine both the totality of the work's aural parameters as well as the means of evaluating performance competency. In this way, Mezzacappa's methods of performance and evaluation exhibit close ties to free improvisation, as this tradition typically features collaborative, extemporaneous musical creation and evaluative methods that incorporate the social and cultural conditions of musical production (Borgo, 2002, p. 176). Indeed, Mezzacappa seemingly confirms this connection when she discusses the similarity between her current improvisational approach and her early experiences as an adolescent rock musician participating in unscripted musical interactions: 'I think a lot of free improvisation has that feeling for me making something up and no one's brought in a written piece of music or we're not playing anybody else's thing and we're trying to find something together'. Much like these valuable experiences in her musical development, improvised graphic performance helps strengthen the ensemble's individual and collaborative abilities. This being so, do participants see other practical benefits to learning through musical performance?

9.3.1 Resolving differences through performance

Black sees the experiential process of learning a piece as an effective way to resolve creative differences.

> **RB:** And if we have a difference of opinion we're gonna have to figure out what it is. I think after, after that, you start to work on the score, and I think that you come to a consensus on how to interpret these things through the act of, of rehearsing and, and playing.
> **RW:** Ok.
> **RB:** And I, I like, I favour that approach in, in a lot of music – of chamber music or something. Even, you know with Bang [on a Can All Stars] or even, even, you know, classical chamber literature. I really do think playing together is more valuable than a lot of analytical discussion.

Black views the experience of playing as the most efficacious way to establish a consensus on graphic interpretation. In his opinion, 'analytical discussion' is inferior to the act of playing when resolving a conflict. Dissimilarities, however, don't always need to be discussed as, by playing the music, 'we're all aware of it.' This awareness can lead to musical concurrence:

> **RB:** Let's play it again and make some modifications on the spot, almost like improvising –
> **RW:** Ok.
> **RB:** – and see if we come up, if we find a way that, through the act of playing, then we say, 'Oh, yeah. We all agree on that.'

By playing music, an ensemble can address differences as they happen, an option that is not available through speech. As demonstrated by Bamberger's (2005) research into score reading and performance strategies of the

Guarneri Quartet, members of a performing ensemble may aurally assess and modify their performance based on accepted stylistic conventions of the piece, personal aesthetics and the directionality of a musical phrase (pp. 166-167). Moreover, as Mario Dunkel's study of Charles Mingus' compositional methods and Jane Davidson's research into bodily communication in musical performance both demonstrate, the performative act enables the use gesture to signal variation, expressivity and emphasis (Dunkel, 2011, p. 232; Davidson, 2005, pp. 215-216). In these ways, the act of playing music and learning from experience is an invaluable communicative tool for the graphic score ensemble.

9.4 *Le temps est écoulé!*

The data in this chapter led directly to the ideations behind my composition *Le temps est écoulé!*. For that piece, I wished to compose a graphic score that would impel an ensemble to collectively create a strategy for performance. To accomplish this, I decided the score would be purely graphic with no explicit directives other than it must be performed by an ensemble. However, I was wary that potential performers might use minimal intergroup communication and simply decide to treat the piece as stimulus for spontaneous group improvisation. I therefore devised a sparse key to help prompt intergroup discussion and engage the performers with the notation. The key addressed concepts of performance duration and stated that a performer was not compelled to perform every graphic. I did, however, omit

references to graphic interpretation or how the piece should be performed. That was intentional, as I assigned no musical meaning to any aspect of the piece. Moreover, unlike my purely graphic piece *Imachinations* (see chapter 8), I deliberately refrained from imagining any type of musical properties during the composition process. Instead, I focused on attributes that might stimulate a discussion of interpretive strategies: colour and saturation, the aberrations in the clock face, references to temporality, cultural symbols from different geographic regions, and the use of French language (fig. 9.1). In these ways, I endeavoured to provoke creative communication amongst performing musicians.

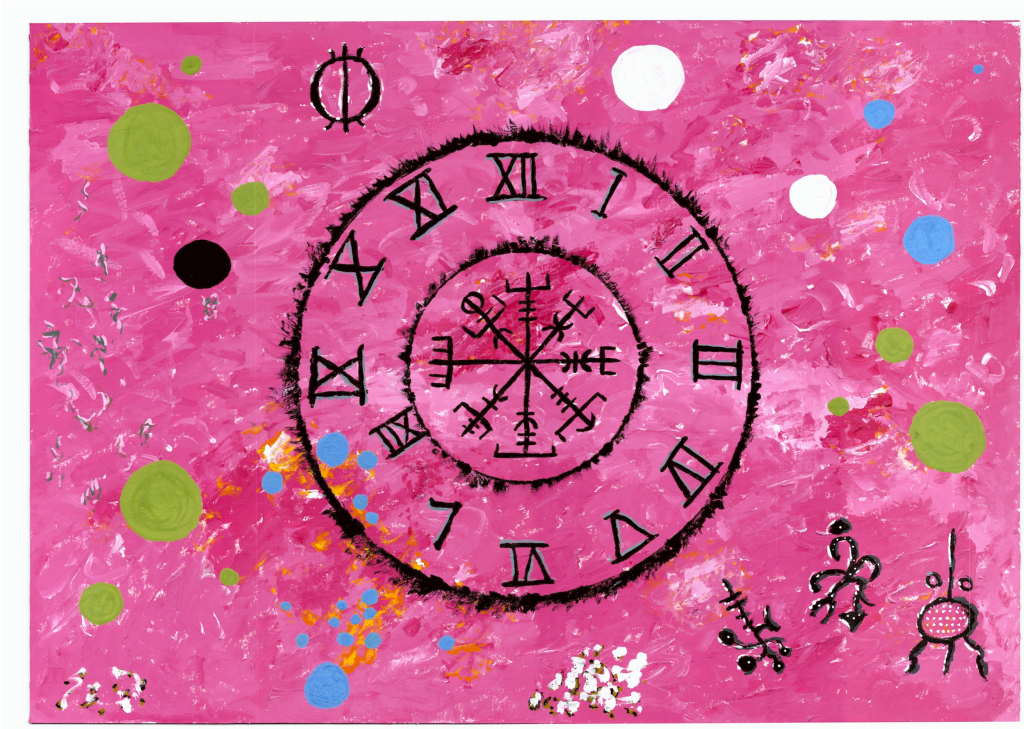


Fig. 9.1 Russell Wimbish, *Le temps est écoulé!,* (2018)

Reflexively evaluating the compositional process of this piece gives rise to a crucial question: is this a musical composition? It has no musical qualities embedded within the notation. And though the key specifies an ensemble performance, there is no indication that this must be a musical performance. Speech, dance or any other non-sounding creative expression is not explicitly prohibited per the sparse set of instructions. And finally, unlike *Imachinations*, the principle compositional objective of *Le temps est écoulé!* is to stimulate intergroup communication rather than provide a notational framework for musical performance. Is it appropriate, then, to consider this piece 'music'? To answer that question, I need to assess concepts of musical meaning and discuss how they relate, if at all, to the piece's creation.

Since the arrival of the New York School, graphic scores have challenged traditional concepts of what may be considered a musical composition (Lewis, 2002, p. 96). Be it emphasising performative script over sounding properties or by functioning as visual artworks independent of musical activity, graphic scores have demonstrated that extra-musical processes can become indispensable characteristics of a musical composition (Gutkin, 2012, pp. 260, 274). Still, even by this criterion, *Le temps est écoulé!* may be found lacking in musicality. The composition contains no script for performance, and, apart from being designated as a score, it contains no musical qualities to complement its visual aspects. Yet, I believe there is musical meaning in this piece. Per Hargreaves *et al* (2005), musical

meaning, sounding or otherwise, is collectively constructed through the interactions between an artist and the recipient of their work (p. 2). Accepting this, it is the process of collectively generating musical meaning that gives the composition musicality. In this instance, I, the composer, designate the piece as a means for engagement between myself, performers and an audience. As others accept, or even reject, this process as a means of musical composition, the piece becomes musical through the social evaluation of the score as a framework for enabling musical performance. Furthermore, it does not matter that, as of this writing, I have not shared the piece with another ensemble. As influential philosopher and educator John Dewey has posited, all artistic creation is social, as even in isolation one is considering the work's reception (Dewey, 1934, p. 106). In these ways, sociability produces musical meaning in a work that, as an entity unto itself, would seem to not fit traditional criteria for a composition.

9.5 Conclusion

This chapter examined how the participants use intergroup communication during the performance of a graphic score. Participants use intergroup communication to clarify composer directives, develop a consensus on how to interpret graphic notations, and resolve interpretive differences within an ensemble. Though responses indicate that participants rely heavily on verbal communication, performing the score itself is also considered an effective

and even superior method of resolving differences and developing a cohesive approach to score interpretation.

As this research has demonstrated, intergroup communication is crucial to graphic score performance. That verbal, gestural or performative communication is critical to effective ensemble playing keeps with current musicological research on musical communication and performance (Davidson, 2005, p. 216). As Bayley's (2017) research on cross-cultural musical collaborations indicates, gestural and bodily communication are often necessary to clarify score markings such as tempo, timbre and accentuation (p. 105). However, intergroup communication in graphic composition extends beyond establishing the character or quality of a pre-composed passage. Rather than operating as an activity external to the composition itself, the data suggests that communicative processes can be embedded within graphic notation with the intention of facilitating creative interactions, musical or otherwise. Thus, the collective social processes necessary for the creation of any artistic work can manifest in graphic scores as compositional components intended to spark social interactions regarding its interpretation and performance. Though other notational systems may require interpersonal communication to establish interpretive consensus, the intentional use of graphic notation for this purpose makes it unique. Hence, as this data demonstrates, social communicative processes are important to the creation, interpretation and performance of graphic notation.

These findings have also shown the importance of distributed creativity in graphic score performance. While the distribution of creative agency between composer and performer was discussed in chapters 6 and 8, this chapter has examined how multiple performers collectively construct musical meaning from graphic notation. Data indicates that, even with explicit composer instruction, methods of graphic score interpretation are socially negotiated. This research therefore suggests that predictability in graphic score performance varies according to the piece, performers and performance environment. These findings were consistent with research by Sawyer and DeZutter (2009) showing that distributed creativity outcomes ranged from relatively foreseeable and 'constrained' to exceedingly unpredictable (p. 82).

In addition to directly informing the creation of *Le temps est écoulé!*, these findings have influenced my creative life as a musician. Unfortunately, as the ensemble compositions of my creative output have yet to be played in their entirety, I have been unable to apply the data to the performance of these works. However, I did utilise this data frequently as a tutor leading the Contemporary Improvisation module at the University of Edinburgh. In this module, I used Earle Brown's *November 1952* (1952) and *December 1952* as well as Cornelius Cardew's *Treatise* to introduce strategies for improvised performance. In doing so, I applied the data much as it appears in this chapter. The students and I: a) discussed the visual characteristics of each score; b) decided upon an interpretive approach; c) mapped information to

the notation; d) discussed differences of opinion; e) performed the piece; and f) modified our interpretive and performative approach based on a deliberation of what we felt was successful. This process allowed beginning improvisers to familiarise themselves with the musical personalities within the ensemble and to develop an expectancy for performance, two sociomusical attributes found to be valued amongst to free improvisation ensembles (Wilson & MacDonald, 2017, p. 139). Hence, these findings provided valuable pedagogical tools for introducing contemporary performance and improvisation to students with little experience in these areas.

To conclude, this chapter has demonstrated the importance of social processes to graphic score composition, interpretation and performance. It has shown that graphic notation, in addition to imparting information to the performer and acting as a catalyst for creative engagement, can enable complex social interactions that are crucial to performance. Most importantly, these findings have indicated that interpersonal engagement is crucial to the performance of a graphic score.

Chapter 10 Evaluating Performance

10.1 Overview

Examining how musical communities (including listeners) evaluate performance reveals both the aesthetic values of a community and the artistic standards expected of practitioners. Be it Socrates' admonition to avoid certain musical modes due to their deleterious effects on society (Plato, ca. 420 B.C.E./2003, 398c-399c) or the 19th century idea that performers should strive for the *Werktreue* ideal, with perhaps only a cadenza to express individuality (Goehr, 1992, pp. 232-233), methods of performance evaluation can offer rich insights into artistic and cultural practices. This chapter thus looks at how and by what criteria participants evaluate graphic score performance. Participant responses typically refer to the act of performing a work, though in some instances, participants evaluate the compositional framework itself. Table 10.1 lists the superordinate and emergent themes for this chapter.

Superordinate theme:	Evaluating performance
Emergent themes:	• Difficulties evaluating graphic score performance • Determining a successful graphic score performance

Table 10.1 Evaluating performance

The first emergent theme explores the difficulties of evaluating graphic score performance. Participants state that in-the-moment evaluations of performance are often too subjective to be reliable indicators of performance quality. Because of this, participants say that listening to a recording of their

performance offers a more reliable means of assessment. The second emergent theme surveys participant strategies for graphic score evaluation. These strategies include assessing compliance with a composition's determinate features, a score's ability to engage the performer without limiting creativity, aural assessment and relying on feedback from members of one's musical community. This section also explores how this data impacts on my creative output.

10.2 Difficulties evaluating graphic score performance

Participants report difficulties evaluating graphic score performance. For some, their experiences performing music are too subjective to be reliable indicators of quality. John Lindberg states that his attention may be focused on 'something I'm reflecting on about my *individual* performance rather than the overall thrust'. Likewise, Lisa Mezzacappa says that, as a composer and bandleader, 'I can only tell [the quality of a performance] *later*, as a leader, because I get so caught up in […] whether all of the ideas are being realised'. For both participants, attention to their individual concerns hinders comprehensive evaluation.

Lindberg and Mezzacappa believe that re-listening to a performance offers a more reliable means of assessment than in-the-moment evaluation. Lindberg explains.

> **JL:** I've had the experience […] when you're recording or there's a performance, sometimes you think, 'Wow, that, that really went

> well,' and you go back to hear it and you go, 'Yeah, that really, really wasn't that happening at all.' And vice versa.

In Lindberg's experience, in-the-moment critiques of performance may change upon re-listening. As there is the possibility that evaluations will change over time, he has difficulty judging the quality of a performance as it happens. Not that reflection always provides evaluative clarification. As Simon Fell explains, 'Sometimes it [a graphic score] just works and it just creates something, and you're not quite sure why.'

Given these participant descriptions, it is important to consider if attributes unique to graphic performance contribute to ambiguity in its assessment. This is not a trivial consideration. Studies of both professional and amateur musicians indicate that in-the-moment aesthetic assessment is a common, even fundamental, component of musical performance (MacDonald & Miell, 2002, pp. 171-172; Berliner, 1994, pp. 411-413). I explore what may inhibit in-the-moment evaluation from two perspectives. The first focuses on musical perception; the second centres on the lack of evaluative criteria for experimental performance.

10.2.1 Musical perception

A study of how musicians evaluate their craft must consider what they are able to perceive, as there are limitations to the amount of musical information human beings can cognitively process, order and retain upon hearing

(Cohen, 2005, p. 68). As not every musical event that occurs in performance is perceivable, this research examines how the participants' performative environments can affect musical perception. Disregarding acoustic barriers to perception such as staging placement and volume imbalances, two factors common to all participants can inhibit musical cognition and therefore make immediate evaluation difficult. The first concerns the prominence of improvisation in graphic performance. Aside from pre-composed musical passages, the participants hear much of the music for the first time during performance. As improvisers, they must process the sounds of the other performers, create an expectancy for musical direction, and contribute to this direction themselves (Michael & Wolf, 2014, p. 178). Research into information processing capacity shows that one can only process a limited amount of information before reaching 'channel capacity', that is, the point in which one is unable to accurately retain information or stimulus (Miller, 1956, par. 9).[7] For this reason, the participants, due to the volume of new information being generated in improvised performance, likely have difficulties retaining sufficient information for holistic assessment. Though

[7] Though Miller's (1956) 'The Magical Number Seven Plus or Minus Two' is one of the best-known and most cited papers in psychology, his assertation that our capacity for information processing is limited to about seven units has been re-evaluated and challenged in the late-20th and 21st centuries (Cowan, 2015, pp. 2-3). Whilst Miller's 'magical number seven' may not be entirely accurate (and is likely an *overestimation*), advances in cognitive research confirm small-scale capacity limits for the information that one may accurately retain (Cowan, 2001, p. 87). As Doumont (2002) writes in 'Magical Numbers: The seven-plus-or-minus-two myth', 'Our capacity for processing information and, specifically, our span of unidimensional absolute judgement is severely limited. There lies Miller's main message' (p. 93).

research suggests that musical training increases the ability to identify and retain pitch structures (Cuddy, 1968, p. 1075), the participants' high level of musicality is potentially offset by the fact that they often perform in large ensembles where the amount of information to process likewise increases. The sheer volume of new musical information to process and retain suggests why Lindberg and Mezzacappa say that they can more reliably use audio recordings to evaluate a performance, as doing so enables them to build familiarity with the music through multiple listenings.

This confluence of improvised performance and limitations of information processing capacity exacerbates problems of in-the-moment evaluation that may be less present in other musical styles. Were the participants performing a predominantly through-composed work, they would (presumably) be familiar with the piece's tonal, rhythmic and dynamic parameters and could more readily evaluate the degree to which the performance conformed to expectation. This points to why Mezzacappa states that she, as a composer, focuses on a piece's determinate parameters during performance. She is familiar with these aural properties and can therefore evaluate and, if needed, attempt to amend their execution.

The second factor potentially affecting perception is the music's tonal characteristics. Though an analysis of even a portion of the works discussed in this thesis would constitute a study unto itself, simply put, most musical

examples veer towards atonality, chromaticism and rhythmic instability. These attributes can directly affect perception and evaluation. Research into auditory cognition indicates that diatonic melodic patterns constructed around a major triad are superior to chromatic, non-diatonic patterns for the retention of musical information (Cohen, 2000, p. 452). As such, graphic performance, which is typically not diatonic or triadic, may compound previously discussed difficulties in musical retention and evaluation. Furthermore, Rohrmeier and Koelsch (2012) assert that Western avant-garde music is difficult to predict due to its 'complex and non-aligned concurrence of features' (p. 166). As research has linked predictive success to positive emotional response (Gebauer *et al*, 2015, p. 50; Huron, 2007, p. 13), participants may have trouble determining their emotional response to the music due to their inability to gain a sense of musical expectancy. As emotion is also linked to cognitive appraisal (Juslin, 2005, p. 90), this can further impede the participants' ability to undergo in-the-moment evaluation. The difficulties in predictive processing suggest why Lindberg and Mezzacappa use audio recordings and find them useful in evaluating a performance. As repetition helps facilitate expectancy (Vuust & Witek, 2014, par. 3), they may only be able to gain a sense of expectancy through repeated listening. In these ways, the music's structural characteristics impede both retention and prediction, thus hindering evaluation.

A consideration of musical perception helps in understanding why participants report difficulties evaluating graphic performance. It does not, however, address by what standards participants evaluate their performance. As I will now discuss, new music performance suffers from a lack of clearly defined evaluative criteria, which can hinder evaluation.

10.2.2 Lack of standardised evaluative criteria

In Lindberg's opinion, a lack of standardised evaluative criteria in new music makes appraisal difficult.

> **JL:** Like you're saying, you're playing [Giovanni] Bottesini or somebody, somebody can clearly just say, 'Look, these are the notes and the dynamics and the flow that is written down; this sucked. You missed half of it, the other half was out of tune, and the third half [both laugh] was at the wrong dynamic level', or whatever!
> **RW:** Right, yeah, sure.
> **JL:** Ok, it's very specific, right?
> **RW:** Yeah.
> **JL:** And you could say, 'Well, that's my creative interpretation, and maybe Bottesini would have actually dug it.' Eh, the general consensus would be no. It, you didn't make it.

The codification of accepted performance practice aesthetics enables a 'general consensus' in evaluating classical performance. A crucial component of this consensus, in Lindberg's estimation, is repetition. He can assess a Bottesini piece because 'I've heard so many different versions'. He contrasts this with Wadada Leo Smith's *Mount Kilimanjaro*, saying, 'I doubt there's many people sitting in the audience that have *ever* heard it, and if they did, it'd be unusual and they probably wouldn't have any expectations

about the *next* performance just because of the nature of what it is.' Through this example, Lindberg says evaluating graphic performance is difficult because there is little reference for how the piece should sound. Nor does repetition across multiple performances resolve this unfamiliarity. As the piece relies heavily on improvisational processes, there is an expectation for subsequent performances to be different.

Lindberg's account suggests that the evaluative qualities for improvised graphic performance lean not towards tonal or rhythmic precision, but towards spontaneity and innovation. However, establishing a consensus on what exactly constitutes true spontaneity and innovation in improvised performance is difficult. Such evaluations are dependent on the knowledge and experiences of the assessor as well as the history of the performers. As research into jazz improvisation demonstrates, what may be seen as radical innovations in improvised performance can also, with the proper historical contextualisation, be viewed as mere modifications of well-established practices (Berliner, 1994, p. 280). Moreover, there is little criteria in Western art music for assessing extemporaneous creativity and experimental performance. As Toynbee (2012) contends, avant-garde and experimental performance lacks the 'stable codes' used for evaluating classical music (p. 169). And Borgo (2002) states that the performance aesthetics of free improvisation are often incompatible with 'accepted conservatory methods' for musical evaluation (p. 168). Hence, it may be difficult to articulate why an

improvised graphic score performance is successful. Nevertheless, difficulties in performance evaluation have not prohibited participants from developing strategies for evaluation.

10.3 Determining a successful performance

This section explores participant strategies for evaluating graphic performance and links the findings to my compositional output. As data analysis ran concurrent with the composition of my creative output, there is a direct influence of the participants' evaluative strategies upon my compositional process. This research thus provides the opportunity to document how specific evaluative strategies relate to and impact my own compositions.

10.3.1 Using determinacy to measure success

Successfully performing determinate structures can serve as a means of evaluating performance. For Barry Guy, if the determinate material can 'come together' and '[make] a transition from one area to the other without any obvious hiatus, then I think, "This is a good performance"'. This method of evaluation, common to all participants, keeps with traditional assessment criteria for Western musical performance (Goehr, 1992, pp. 224-225). Moreover, this practice appears prevalent in improvising musical communities, as research outside of this study shows that improvising ensembles use determinacy to gauge musical preparedness (Zorn,

2004/2019, pp. 278-279; Steinbeck, 2008, p. 405; Lock, 1988, pp. 75, 197-198).

This finding should not imply that determinacy is the only means by which Guy, a prolific improviser, assesses performance. As discussed in chapter 6, Guy states that performing musicians, working through improvisational processes, can enable 'a successful moment' that has 'quite a lot of magic'. Participants Fell and Mezzacappa each make similar statements, thus suggesting that graphic composers and performers use multiple methods of performance evaluation. As Fell, Guy and Mezzacappa all have musical identities as composers and performers, they employ evaluative strategies appropriate to each discipline. For composition, the successful performance of determinate structures and conformity to expectation serve as the criteria for performance evaluation. For improvisation, evaluation is based on facilitating creative and unanticipated moments.

For my own graphic output, determinacy figures prominently in evaluating performance. For works containing traditional notation – *Graphic Piece for Solo Bass, Machrie*, and *Maria Ave* – adherence to written specifications of pitch (including intonation), rhythm and dynamics are central to determining performative success. This is particularly true of *Maria Ave*. As it is a predominantly tonal and traditionally notated work for chamber orchestra, a poor execution of the written figures distracts from the Western classical

aesthetic in which the piece is rooted. However, accurate readings of notation are not the only determinacy by which I evaluate the performance of my output.

Guy's emphasis on musical material transitioning 'from one area to the other without any obvious hiatus' has had a significant impact on the composition of *Machrie*. The piece comprises six modules that are cued at the conductor's discretion. The conductor may also at any point choose ensemble members to stop performing the written material and improvise. Thus, it was critical to consider how to best signal these transitions during a performance. Though I was well aware of composers such as John Zorn and Barry Guy using flash cards to signal musical changes (Brackett, 2010, p. 50; Guy, 2012, par. 5), I felt that a system of hand signals would easier to use during performance. To increase the probability that these signals could be easily read by the ensemble, in many cases I have co-opted familiar hand gestures that the performers would likely recognise. In this way, I have developed determinate structures to effectively facilitate transitions and thus increase the likelihood of a positive performance evaluation.

Evaluative systems that rely on both determinacy and creative improvisation are reflected in the creative impetus for *Duo for Melodic Improvisers*. Per the written key, improvisers shift between featured and supporting roles according to pre-determined time frames. The degree to which this occurs is

one of the primary means of gauging a successful performance. However, it is not the only means of assessment. I also evaluate the performance based on my own subjective perceptions of creativity and innovation. Evaluation therefore resides in how performers creatively develop musical material within the confines of the piece. By considering this during composition, the conceptual origin of *Duo for Melodic Improvisers* links to the evaluative strategies uncovered by the data.

Significantly, a listener unaware of *Duo for Melodic Improvisers*' compositional directives could, theoretically, enjoy a performance that nonetheless fails to comply with its determinate markers. This scenario contrasts with how determinacies function in *Maria Ave* and *Machrie,* where failures to meet determinate specifications are more readily perceivable (for example, poor intonation, missed notes resulting in uncharacteristic dissonances and faulty transitions). But for *Duo for Melodic Improvisers*, detecting compositional accuracy is not possible without the aid of the written score and a timekeeping device. Is the score then superfluous? To answer, I will explore Fell's ideas on evaluating a successful graphic score performance.

10.3.2 Engaging and influencing the performer

Fell states that a successful graphic score performance is dependent on three factors: engagement with the score, the score's ability to influence the performance and Fell's satisfaction with his own contributions.

> **SF:** I'd probably say that was still a, you know, a successful performance in the sense that, uh, the score, I think I made a, a faithful representation of the score, and I went where the score wanted me to go but I felt as an individual performer, my, my skills weren't really fully incorporated. Uh, so, it was a sort of two-thirds success scenario.
> **RW:** Ok.
> **SF:** Uh, the three-thirds –
> **RW:** [laughs]
> **SF:** success is where I also feel, yes, and also I was unable – able to bring something *of myself* that made that performance specific, not to just *that* score and that composer, but also to *this performer*.

For Fell, a performance is successful when it is guided by the score, musicians give a 'faithful representation' of it, and he is satisfied that his personal aesthetic and 'skills' as a musician are 'fully incorporated'. Fell believes successful engagement with the score occurs when a performer is 'playing a certain way because it [the score] looks a certain way' as opposed to situations where a performer decides to 'just ignore it'. When evaluating performance, it is crucial for Fell to believe that the improvised performance 'would not have happened the way it did without the score'.

Fell's definition of a successful performance has had a significant influence on my creative output. This is perhaps most profoundly reflected in *Duo for*

Melodic Improvisers. For this piece, I have aspired to develop a structural framework for improvisation that would otherwise not occur. This concept is represented by the predetermined temporal alternations between leading and supporting roles and, to a lesser extent, the requirement that performers improvise melodically. Likewise, Fell's statement that a graphic score's visual characteristics should affect what one plays manifested most prominently in the purely graphic pieces *Imachinations* and *Le temps est écoulé!*. For these compositions, I created heterogeneous graphic components that were grouped according to similarity of appearance. This was done with the intention of demarcating sections of the score that would correspond to noticeably different musical material. For example, in *Imachinations*, I placed a row of half circles to the left of buta shapes followed by smaller multi-coloured dots (fig. 10.1). My intention for grouping visually similar graphics was to prompt the performer to render a musical interpretation with aurally differentiated musical structures. I used similar concepts when creating *Le temps est écoulé!*. I surrounded a clock face with different coloured circles (fig. 10.2) nonsensical drawings (fig. 10.3) and concentrations of colour (fig. 10.4) as a means of getting the performer to consider musical events that may occur within the temporality of the piece. Though this means of guiding improvisation is much more subjective than that of *Duo for Melodic Improvisers*, the intention is similar: to use graphic notation and explicit direction to creatively engage the performer with the components of the score.

Fig. 10.1 Russell Wimbish, *Imachinations,* excerpt, (2018)

Fig. 10.2 Russell Wimbish, *Le temps est écoulé!,* excerpt, (2018)

Fig. 10.3 Russell Wimbish, *Le temps est écoulé!,* excerpt (2018)

Fig. 10.4 Russell Wimbish, *Le temps est écoulé!*, excerpt, (2018)

10.3.3 Improvisational freedom

Though Fell says that a graphic score should directly impact on improvisation, it is also important to him that he not feel constrained as an improviser.

> **SF:** [A successful] score has somehow had an input into what we're doing, and yet, it hasn't .. taken away .. the power of our creative uh, improvisation or, or quasi-improvisation skills to create something.

Fell is concerned that the score will not be 'sufficiently free to just allow the musicians to improvise', a view that is informed by his musical identity as an improviser. After 'having spent thirty-five years playing freely improvised music and having heard the most amazing things that happen when people improvise', Fell feels that 'anything that you can make happen through a graphic score, could happen just through improvisation.' In other words, he doesn't need a graphic score to make great music. Moreover, he believes that graphic scores have the potential to creatively limit and possibly even 'ruin the music that you're making.' Because of this, he often feels 'ambivalent' about graphic scores as a form of composition.

As an improviser, it is important to me that improvising performers not feel creatively limited by my compositions. Nonetheless, the degree to which my output satisfies this ideal depends upon the piece. *Maria Ave* offers almost no opportunities for improvised creative expression. And though *Machrie* contains many opportunities for improvised performance, those opportunities

are strictly regulated by both the compositional design and the actions of the conductor. For the other pieces, however, I wish to encourage the performer's creative contributions whilst still satisfying my own compositional objectives. This idea most clearly manifests in the leeway given to the performer for graphic interpretation. Though *Graphic Piece for Solo Bass*, *Imachinations* and *Le temps est écoulé!* all have performative restrictions, there are no explicit conditions on how one may interpret the graphic notations. In this way, I strive to avoid performer dissatisfaction by placing no limitations the performer's interpretational methods. Nonetheless, I do affect the improvised performance by providing the performative framework and, if I have been successful as a composer, creating graphics that influence creative interpretation (see chapter 6). Likewise, though *A.B. W.L.S.* contains specific instructions on graphic interpretation, these instructions are highly subjective and are intended to encourage the performer's creativity. Per the written key, the performer alternates between improvising melodically in a manner that is informed by the music and musical interests of Anthony Braxton or Wadada Leo Smith and improvises texturally based on subjective qualities I ascribe to both musicians. Though this does place limitations upon the performer, the performer can nonetheless provide their own creative reaction to both Braxton and Smith's compositional and performative oeuvre. In this way, the compositional guidelines serve to instigate creative exploration rather than inhibit it.

10.3.4 Aural confirmation of success

For Robert Black, aural assessment is crucial to evaluating performance.

> **RB:** There is a point in which you know it [the performance] is wrong. Or this isn't going well, or […] the intentions are not in line with [the composer's] thinking.
> **RW:** And you would base that just off of what you've heard?
> **RB:** I think so.
> **RW:** Ok.
> **RB:** You know, and you have a general […] understanding of […] the creative world of that person.
> **RW:** Yeah, sure.
> **RB:** And so you kind of go, 'Well, what we're doing is really outside of that.'

Black uses his knowledge of the aural characteristics typically associated with a composer to gauge whether or not a performance aligns with that composer's aesthetic. Failure to recognise these characteristics indicates that 'maybe we're on the wrong track.' In this way, even when performing a purely graphic score, Black can create an expectancy for music that, as previously discussed, is difficult to predict. Certainly, it is possible that what one believes to be the composer's aesthetic is, in fact, a misconception, or at least a misconception of what the composer wishes for a particular piece. Nonetheless, it is his perception of the composer's aesthetic that, accurate or not, guides Black's evaluation strategy. (And perhaps it is not too presumptuous to state that Black's professional esteem, particularly amongst modern composers, indicates the accuracy of his aural cognisance). To use this method of evaluation, two criteria must be satisfied. First, the composer must have a body of documented work that establishes their sound world.

Second, the performer must be able to recognise these aural characteristics. Recognition can come through the study of traditionally notated compositions, recorded media, essays and memoirs of the composer, and personal interactions. As not every graphic composition, particularly new works by younger composers, will meet these criteria, these means of assessment are not an option for every graphic performance.

10.3.5 External confirmation of success

As a final means of evaluating performance, participants state that they often rely on external confirmations of success. As Lindberg explains, one may rely on feedback from the composer to gauge the quality of a performance.

> **JL:** So, let's take, take, something like, you know, Wadada's Ankhrasmation pieces. And I've been in rehearsals with him, you know, where he […] just as much as, you know, we're talking about some traditional notation, he's just saying, 'No, you know, you're not playing that right.' Or, I remember that Billy Bang wrote a, a graphic piece that it was all with colours, and I remember him saying to uh, somebody in the ensemble, this is for a larger ensemble, he said, 'You know, you're, you're flat. On every time we play red, you're flat.' […] It sounds comical in a way but, it's very serious.

Lindberg views composer feedback as valid critiques from an authoritative source. Though criticisms of intonation might seem 'comical' when applied to notations indicating ideas or qualities rather than specific tones, Lindberg believes the performer should heed these comments. This reliance on the composer for evaluative feedback also shapes his assessment of a performance. He states that, 'With *Mount Kilimanjaro*, when the composer at

the end of the performance says, “John, that was great! Man, it was just fantastic!”, that would give me the feeling that it probably went well.’ This belief further demonstrates that the Romantic ideal of the composer as the foremost authority of their work shapes participant perspectives of the success of a graphic performance. Though this thesis discusses how composer and performer collaborate to create a piece’s sounding properties (chapters 5, 6 and 8), data suggests that participants often defer to the composer when evaluating performance.

Lindberg also uses audience response and group consensus amongst performers to evaluate performance.

> **JL:** One way you can know if it goes well is the audience has a very enthusiastic and positive response to it.
>
> […]
>
> **JL:** If ten people [in the ensemble] go, ‘Wow, that was really special,’ yeah, then you kind of know.
> **RW:** Yeah.
> **JL:** And if ten people go, ‘Wow, we just fell flat on that’, then you kind of know, too.

Lindberg relies on majority consensus to help him evaluate the quality of a performance. This reliance on external evaluation is not unusual when assessing one’s own musical achievements. Research into how musical identities are constructed indicates that peer and environmental feedback influence an individual’s perception of musical ability (Dibben, 2002, p. 121-122; MacDonald & Miell, 2002, pp. 171-173). However, Lindberg’s feeling that external confirmation may be one of the better ways to evaluate his own

work points to the difficulties new music performers face in forming opinions about work that is quite dear to them.

10.4 Conclusion

This chapter examined strategies for evaluating graphic score performance. Participants reported difficulties with in-the-moment evaluation and stated that they often relied on recordings to properly assess a performance. Analysis has indicted that these difficulties could be perceptual and thus result from inherent limitations of information processing and retention. Participants also revealed strategies for performance evaluation such as assessing the degree to which a performance abides by the score's determinate features, the degree to which a performance engages with but is not limited by the score, aural assessment, and external confirmations of success.

As indicated by Lindberg, another factor possibly inhibiting performance assessment is the lack of global evaluative criteria for experimental musical performance. Though graphic composition has roots in Western classical music and American jazz (Brown, 2008, p. 6; Lewis, 2002, pp. 91, 102), it differs from these two traditions in that it lacks a codification of aesthetic criteria by which to evaluate performance (Borgo, 2002, p. 168). It is at this point important to draw a distinction between notions of correct performance and one with high aesthetic value. Participants state that compliance with a

composition's determinate features serves as an indicator of performance value. However, as philosopher of arts and aesthetics Richard Wollheim has argued, adherence to notation alone is insufficient for aesthetic determination, as one must also consider how a performance is situated within the work's history of production (Wollheim, 1978, p. 47). This distinction between the correct and the artistic is unproblematic for most musical traditions. Western classical music, improvised traditions and popular musics typically utilise a broad consensus on the application of idiomatic musical devices to assess both performance capability and aesthetic value (Heath, 2017, November 3, 6:04; Gracyk, 1999, p. 206; Nettl, 1974, p. 12). However, this research indicates that aesthetic assessments of graphic performance tend to be local and shaped by one's environment. Participant responses show that the perception of innovation, the belief that the score has enabled unexpected musical events, and the feeling that one's talents have been properly utilised serve as measures of aesthetic evaluation in graphic performance. As such, evaluative criteria are shaped by the evaluator's past experiences, performance environment and personal history to the composition and other performers.

Despite difficulties in evaluation, participants have developed strategies to assess performance. It is important to note that, with the exceptions of determinacy and aural evaluation, the evaluative methods discussed are individual to each participant. Though the ability to aurally compare a

performance with a composer's oeuvre must develop through training and personal experience, this process is nevertheless consistent with established methods of performance assessment (Whittall, 2017, p. 23). The other evaluative strategies, however, depend upon environment and experience. The feeling that a performance utilises one's talents and engages one's creative interests is unique to the individual. And though feedback from others can demonstrate consensus, it nonetheless constitutes a fluid means of evaluation. For example, when discussing Anthony Braxton's use of graphics in *Composition No. 114 (+108A)* (1984), Lindberg states that 'I had to conclude it [the recording] didn't go too well because the composer thought it was horrible.' I find Braxton's assessment surprising, as I credit *Composition No. 114 (+108A)* specifically with generating my interest in Braxton's music and Lindberg's artistry as a bassist. This personal anecdote illustrates how peer responses may vary according to environment and personal history. Lindberg seemingly confirmed this by saying that 'a lot of people seem to like that recording' and 'he [Braxton] might like it now'.

Though many evaluation strategies in this chapter rely on local assessment criteria, they nevertheless manifest either structurally or conceptually in my creative output. This juxtaposition of the concrete and the fluid presents a polarity. Though graphic composition has discernible characteristics, requires rigorous preparation and enacts challenging performance standards, evaluation can be difficult and largely determined by one's experience and

environment. As such, this research has shown that it is an art form for which environment and social processes cannot be separated from its construction and performance.

This concludes an analytical narrative that seeks to better understand how practitioners define, create, perform and evaluate graphic scores. As I now turn to the discussion, I bear in mind that the resulting products of creative effort and the environment that enables creation are uniquely and inextricably linked. Therefore, each composition, performer and even performance may indeed be a study unto itself.

Chapter 11: Conclusion and Discussion

11.1 Overview

This thesis has examined graphic composition from the perspectives of active practitioners. Through participant accounts and reflexive evaluations of my own creative output, it brings to light crucial insights into modern composition and performance. These findings challenge Romantic ideas about compositional authorship and contribute to current scholarship on improvisation, musical communication, performance and the nature of creativity.

This chapter will revisit the findings of the thesis in relationship to the original research questions. It will also examine the influence of these findings on the seven compositions of my creative output and show how those pieces could be used in future research and educational initiatives. The chapter will conclude with a discussion of the limitations of this study, questions that arose from the research that were not addressed by the analysis and areas for further research.

11.2 Research question 1

What strategies do participants use for interpreting graphics in music?

This thesis has documented and analysed methods of graphic score interpretation as related by some of the genre's foremost practitioners. It has examined methods of performance preparation, looked at how composers

use graphics to convey musical meaning to the performer, examined specific performer strategies for assigning musical qualities to graphic notation, and discussed performance environments in which participants felt it appropriate to disregard a score's compositional dictates. It has also noted similarities between participants' methods for interpreting graphic notation and investigated why they believe an approach is best suited for a specific piece, performance environment and their own musical identity. Through analysing participant responses on methods of graphic score interpretation, this research has demonstrated that graphic scores can accommodate the individuality of the performer and that there is an expectation for each interpretation and performance to be highly individualistic and unique.

Chapter 5 addressed this research question by showing that a composers' knowledge of the performer's personality and musical abilities can directly affect the creation of compositional structures and methods of performance. In doing so, it has demonstrated that social processes themselves can be written into a graphic score as compositional features. Establishing the importance of social processes to graphic composition and performance is a significant finding of this thesis. In addition to challenging hegemonic ideas of power relations between composer and performer, it has practical implications regarding the creation and performance of graphic notation. As this research has demonstrated, sociological and interpersonal issues such as the environment in which a piece is performed, shared knowledge

between composer and performer, and the willingness of the performer to learn a new notational system can directly affect the creation and performance of a graphic score. Moreover, this analysis has shown that composers often develop and assign meaning to graphic notation with the objective of negotiating a shared creative agency between themselves and the performer. Thus, by examining specific methods of creating and interpreting graphics as well as the underlying social processes that surround their composition and performance, this research has discovered strategies that participants use for interpreting graphics in music.

11.3 Research question 2

What is the role, if any, of improvisation in a graphic score?

This research has shown that participants view improvisation as essential to graphic scores both as a method of performance and as a compositional component. Chapter 6 has revealed that participants consider the improvising performer an active creative contributor in graphic score performance. These findings link graphic scores to Cook's (2012) theory of music as performance, as the aural attributes of a graphic work may only manifest through performance. In this way, graphic scores democratise the musical process by distributing creative agency between the composer and performers. This research has also indicated that creative agency is typically not distributed equally, as participants state that graphic composers often attempt to limit and control the performer's improvisation through

compositional dictates. Moreover, this thesis has shown that participants typically (though not always) accept these limitations on the performer's creative autonomy and acknowledge the composer as the foremost authority of a work. This research has therefore contributed to studies of distributed creativity by demonstrating how social expectations and conventional performance practices can affect the distribution of creative agency in graphic score performance.

To better understand how improvisation functions in graphic composition, this research has analysed participant strategies for evaluating improvised performance. Chapter 10 has examined participant strategies for evaluating graphic score performance and noted their difficulties in assessing improvised performance. Due to these difficulties, participants state that they often rely on the correct performance of non-improvised material, subjective feelings of engagement and feedback from members of their musical community. These findings are notable for suggesting that evaluative frameworks for improvised and new music performance must address the social and environmental aspects of performance in addition to traditional methods of musical evaluation. In these ways, this thesis has explored the role of improvisation in graphic composition.

11.4 Research question 3

What is the role of communication in performance?

This thesis has evaluated how graphic score composers and performers use written, verbal and nonverbal communication to convey compositional directives, strategies for score interpretation and aesthetic expectation. In analysing methods of communication from composer to performer, chapter 7 has demonstrated that graphic score composers typically use written communication (an accompanying key, para-notation), notation (traditional and graphic) and verbal communication to convey technical information to the performer. Chapter 7 has also shown that composers often use verbal communication to establish trust with the performer. These findings are significant for demonstrating that, in addition to imparting technical information, composers may use communication to cultivate interpersonal relationships deemed essential for performance.

This thesis also examined the role of intergroup communication in the performance of a graphic score. Participants state that they use verbal intergroup communication to clarify communication from the composer, build a consensus on how to interpret graphics, resolve differences of interpretation and establish methods of performance. Additionally, some participants favour nonverbal means of communication, stating that performing music together is the ideal way for an ensemble to develop a cohesive approach to score interpretation. These findings therefore

demonstrate that communicating technical information works in tandem with social processes in the preparation and performance of a graphic score.

11.5 Research question 4

How do these findings inform my creative output?

The findings of this thesis have been highly influential to my creative output. As my conceptions of compositional structures and use of graphic notation derive directly from the data, this creative output can be considered evidence-based composition. To elaborate, participants' descriptions of assigning meaning to graphic notation have informed how I use graphics to represent musical qualities and convey compositional objectives to the performer. This data has also influenced the appearance of these notations and how the visual characteristics relate to the sound world I wish to establish. In these ways, my creative output demonstrates findings on strategies for graphic interpretation and participant descriptions of common relationships between the visual components of graphic notation and their musical meaning. This creative output also reflects data on the diversity of graphic compositional forms and essential characteristics of graphic scores – namely the idea, expressed by all participants, that graphic scores combine composition and improvisation. Furthermore, this research has led me to consider how the abilities and attitudes of potential performers can be reflected in my own compositional structures and how graphics can enable the unique voice of the performer.

Findings on improvisation have also been integral to my creative output. Each score demonstrates participant accounts of how creative agency is distributed between the composer and performer and how a composer can attempt to influence an improvised performance. Moreover, participant statements emphasising the importance of performers' attitudes and musical abilities have been influential to my compositional process. Considering the abilities of potential performers as well as their likes and dislikes has affected how I use improvisation compositionally. For example, *Machrie* and *Maria Ave,* are works most likely to be performed by a classical chamber ensemble and can be performed with scant improvisation (though *Machrie* can also accommodate experienced improvisers). By contrast, *A.B. W.L.S.*, *Duo for Melodic Improvisers*, *Imachinations* and *Le temps est écoulé* are designed to engage performers creatively and encourage improvised contributions.

Lastly, findings on communication in graphic score performance have substantially impacted on how I communicate my compositional objectives. These findings have led me to consider what information I need to impart to the performer and how to effectively use textual, notational and para-notational communication. The influence of these findings extends beyond simply transmitting information. On a macro level, this research has compelled me to consider ways of engaging performers creatively and formulating criteria for a successful performance. This compositional influence has derived as much from participant descriptions of social

interactions as it has from descriptions of the musical attributes of a score or performance. Because of this, my compositions contain not only musical characteristics associated with the graphic score tradition, but also embody communicative processes that this research has demonstrated are common to graphic compositional practice. My creative output has thus shown how interpersonal relationships and social processes can directly impact on musical structures. In these ways, the analytical findings of this thesis have informed my creative practice.

11.6 Contributions to current research

This research has added much to current graphic score scholarship. It is significant for uncovering how eminent practitioners define and classify graphic compositions. As discussed in section 5.2.1, the differences in participant responses indicate that definitions and classifications for graphic scores are fluid and dependent upon environment as well as the practices of individuals and musical communities. This gives rise to a topic that has seen little scholarly attention. Important scholarship on graphic scores by Iddon (2013), Hicks and Asplund (2012), Holzaepfel (2002) and DeLio (1984) focuses on the output of a single composer or compositional school and does not establish criteria for defining or classifying a graphic score. Notably, Kanga (2014) has proffered two categories of graphic scores: ‘precise schematic’, in which graphics represent specific actions undertaken by the performer to generate predetermined musical effects; and scores in which

graphics function as stimulus for creative interpretation (p. 42). By contrast, Anderson (2013) offers classifications of: 'symbolic', that is, graphic scores that follow the syntax of traditional notation; 'pictorial', meaning scores whose notations have no direct relationship between image and sound; 'text scores' that are textual instructions for the performer; and any combination thereof (pp. 131-133). While Kanga and Anderson's groupings encompass common approaches to graphic composition, support for their categorical derivations remains unexplored in both studies. This research is therefore notable for empirically demonstrating that definitions often vary, and, to understand categorisations derived through practice, one needs to evaluate the milieu in which a graphic score has been created and performed.

This research is also significant for demonstrating the centrality of improvisation to contemporary graphic compositional practice. These findings provide a much-needed counterweight to graphic score studies centring on non-improvisational performance methods typified by David Tudor's work with the New York School (Kanga, 2014; Iddon, 2013; Brown, 2008; Holzaepfel, 2002; Cage & Daniels, 1981/2000). And while recent studies into contemporary composition do acknowledge the role of improvisation in graphic score performance (Williams, 2016a, par. 2; Bhagwati, 2013, p. 170; Harris, 2013, p. 197), this research is unique in that it has empirically examined how performance environment, score preparation, interpersonal interactions and evaluative reception have influenced improvised

performance. This research therefore contributes to studies of modern compositional practice by demonstrating the multi-faceted role improvisation plays in graphic composition and performance.

This thesis has also contributed to studies of distributed creativity by demonstrating how creative agency is dispersed between the composer and performer. In doing so, it has challenged the nineteenth century idea of the composer as the sole originator of a work. Of course, this research cannot claim this as an original finding. Arnold Whittall, Lydia Goehr and Nick Kaye have each presented research that challenges the Romantic compositional ideal and used the music of John Cage to demonstrate the idea of distributed creativity within a single composition (Whittall, 2017, p. 32; Goehr, 2006/2015, p. 25; Kaye, 1994, pp. 93, 97, 98). Moreover, the idea that a work is collectively created is common to improvising musical communities, particularly amongst practitioners of free improvisation (Linson & Clarke, 2017, p. 56). Nonetheless, the traditional idea of composer supremacy and the autonomous work is so rooted in Western musical thinking that it continues to influence contemporary perceptions of composition and performance (Small, 1998/2011, pp. 5-7). This research thus acknowledges findings on the significance of distributed creativity in graphic composition as part of an established narrative that is still gaining traction within contemporary musicology.

To conclude, his thesis has added to current research on the relationship between improvisational performance and social processes. The link between the two has been well established in educational studies (MacGlone & MacDonald, 2017, p. 280), historical accounts (Lewis, 2008, pp. 92, 100-101) and disquisitions on improvisation (Bailey, 1993, pp. 90-93). Additionally, the significance of sociological interactions in jazz improvisation is an overarching theme in studies by Behling (2010), DeVeaux (1997) and Monson (1996). However, these studies have typically discussed improvisation as a separate process from the compositional framework in which it occurs. This research has revealed a socially negotiated expectation that the composer can use compositional dictates to influence and limit the performer's improvisation. This study is thus significant for demonstrating that the effects of social processes upon improvisation are not necessarily independent of formal compositional structures.

11.7 Applications for evidence-based composition

As evidence-based compositions, my creative output can have applications for musical pedagogy and cross-disciplinary research initiatives. Of course, printed scores of any genre have long been used for purposes other than performance. Studies of musical analysis, composition, music history and musicality building pedagogies have all used musical scores to facilitate their educational and research objectives. Acknowledging these precedents, my

compositions' embodiment of the research data suggests that these works could function beyond that of performance repertoire.

To start, these scores have pedagogical applications. They could be used to educate composers and performers about a) the uses of graphic notation, b) methods of graphic interpretation, c) varieties of graphic compositional frameworks d) different methods of performance and e) how the composer and performer share creative responsibility. Moreover, as pedagogical research has demonstrated that educational interventions using graphic notation benefit younger music students (Gill *et al*, 2015, pp. 85-86), my output could be integrated into childhood music curriculums to increase competencies in critical areas of musical development. Building on Barrett's (2005) research into how children create notation to represent musical ideas, these scores also could encourage creativity in childhood education by modelling how to communicate musical concepts through original notation. Moreover, as McPherson and Gabrielsson (2002) have posited that emphasising traditional notation too early in childhood can impede the aural perception of musical structures (p. 113), these scores could be used to stimulate creative agency and aural cognition in young students whilst still introducing the representational concepts of notation. These scores could also cultivate collaborative music-making and creative problem-solving by letting students collectively assign their own meaning to the notations. And lastly, as illustrated by Barry Guy's account of using free improvisation to

overcome psychological barriers to performance (Clark, 2007, p. 9), these scores could be combined with traditional pedagogy to foster creative exploration without the pressure of accomplishing a technically correct task.

These scores could also be used in improvisation pedagogy. As a tutor at the University of Edinburgh, I had success using graphic scores to introduce free improvisation to students with little or no improvisation experience. I found that assigning a type of musical activity (e.g. loud notes in a high register, soft sustained tones, sound generated through extended techniques) to graphic notation and then discussing the performance helped students develop the creative and interactional skills essential for improvisation. However, classroom applications for these scores need not be limited to beginning improvisers. They could help develop personal and group improvisational skills for experienced improvisers on the collegiate and professional level. In these ways, the creative output of this thesis could be used in musical pedagogy.

These compositions also have applications for cross-disciplinary collaborations and research. As many of these scores contain notation whose meaning is wholly determined by the performer, artists and researchers without formal musical training would not be excluded from using these scores as research tools. Expanding on research by Ganter and Macdonald (2015), this output could help facilitate collaborations between

musicians and visual artists by exploring how the relationships between music and image impact on performance, improvisation and inter-disciplinary collaboration. Additionally, these scores could be used for research into a) how artists in fields other than music approached graphic composition, b) how their efforts were received by performing musicians and c) how these scores could facilitate improvisation across different artistic disciplines.

11.8 Further considerations

Throughout this study, questions arose that this research has been unable to address. Building upon participant Simon Fell's assertion that graphic notation can 'suggest' an idea to a performer, the question arose as to what degree graphic notation can indicate a concept that will be similarly interpreted amongst performers of different backgrounds. This question became more pertinent after a colleague informally performed my piece *Imachinations* during a rehearsal. As he was unfamiliar with my previous performances of the piece, I was struck by the similarities between our interpretations. Observing similar interpretations of a graphic score is not unique to my own experience. Studies into graphic score performance have reported similar phenomena in realisations of works by David Young (Kanga, 2014, p. 40) and Earle Brown (Anderson, 2013, pp. 131-132). These findings suggest that a study of interpretive similarities amongst multiple performers is an area for further research.

Data on performance evaluation has also indicated areas for additional research. When asked the question, 'How do you decide if a performance is going well?', participants discussed evaluation of group performance from a global perspective rather than focusing on their individual contributions. This emphasis on collective results has pointed to the collaborative nature of graphic composition and improvised music. As such, a case study of long-term musical collaborations amongst graphic composers and performers could reveal much about modern musical practice. Assuredly, there have been precedents for this type of research. Iddon's (2013) chronicle of written correspondences between John Cage and David Tudor has provided spectacular insights into Cage's music, distributed creativity and musical communication. And Steckler (2013) incorporates the collaborative histories of the participants into his phenomenological study of improvisers collectively learning a new work (pp. 5, 47-48, 54). The effectiveness of these studies indicates the merit of an in-depth study of collaborations among living artists working with graphic scores.

11.9 Beyond graphic scores

The findings of this thesis point to additional research in areas other than graphic composition and performance. As discussed in chapters 5 and 7, a crucial finding of this study is that the performer can influence the creation of a graphic score's structural components. However, investigation of this phenomenon need not be confined to graphic works. Research into

distributed creativity in music as well as research hosted by the International Institute for Critical Studies in Improvisation, *Institut de Recherche et Coordination Acoustique/Musique*, and the Orpheus Research Centre in Music (among countless others) show a robust field of examining performer influences upon the compositional process. Acknowledging this, the findings of this thesis have applications for research into how non-graphic works have been influenced by the performing musicians. Doing so has the potential to build upon the results of this study and contribute to research into composition, musical collaboration, music history and distributed creativity.

As discussed in chapters 6 and 7, participants state that performances should reflect the aesthetics and intentions of the composer. This performance principle has also been expressed by musicians performing in Western classical and American jazz traditions, be it through studies of concerto repertoire (Kohn, 2019, pp. 15-16), the 'authentic' performance movement (Lipman, 1990, p. 53) or jazz improvisation (Berliner, 1994, p. 204). Nonetheless, modern renditions of renaissance, baroque and classical music as well as early jazz have frequently featured performance practices that are historically inaccurate (Goehr, 1994, pp. 247, 250, 280-281). Acknowledging this study's findings in conjunction with the proliferation of historically inaccurate performance practices, musicologists could be prompted to re-examine the idea of an accurate or correct performance.

Lastly, in chapter 9, Fell states that interpretive disagreements often remained unresolved due to limited rehearsal time. Though not stated explicitly by Fell, contemporary music studies have indicated that inadequate funding and lack of profitability are often barriers to preparing and staging musical performances (Eastburn, 2018, p. 142; Steckler, 2013, pp. 5, 9-10; Borgo, 2002, pp. 175-176; Smith, N.D., par. 6, 16) As with other findings, this is a phenomenon I have experienced in my own career as a professional musician. Though this problem has been well documented, its impact has been discussed largely from an economic perspective. I suggest that a phenomenological study into the effects of funding pressures on creative musicians could improve understanding of how these pressures impact career satisfaction and mental well-being.

11.10 Conclusion

This study has added to knowledge of graphic scores as a compositional practice by exploring the relationships between notation and performance. It has also provided a better understanding of graphic compositional practices by examining musical structures in conjunction with the interpersonal relationships between composer and performer. Furthermore, it has shown how the results of this study were applied towards evidence-based composition. These compositions thus demonstrated distributed creativity between composer and performers, social processes embedded within graphic notation and performance strategies uncovered by the data.

Findings show that participants' approaches to graphic scores are highly personalised and influenced by environment and social processes. The findings have demonstrated how composers and performers have collaborated to create works that were often reinvented from performance to performance. Findings also have shown how improvisation and composition combine to enable creative collaborations and unique performances. And lastly, they have shown that communication between composer and performer has reciprocal compositional influence, thus challenging long-held assumptions about the nature of musical communication and creativity.

In conclusion, this thesis has demonstrated that graphic composition is not a reified object, but a vibrant, collaborative process. It has given an abundance of practical information for graphic score performance and has illuminated the central role of improvisation to both performance and composition. It is my hope that the findings of this study will enable the performance of existing graphic compositions and encourage the creation of new ones.

APPENDICES

Appendix 1: Interview schedule

1. How did you develop an interest in performing graphic or non-traditionally notated music? (narrative)
2. Can you tell me how you began to prepare for _____? (descriptive/structural)

   Follow ups:

   1. What are some specific experiences or periods of development that you drew from? (narrative)
   2. Did you write out your ideas beforehand?
3. How do you decide when a technique is appropriate for some sections and not appropriate for others? (contrast)

   Follow ups:

   1. What about rhythms? Tonalities? (contrast)
   2. What aspects of the score do you feel implied these [rhythms/tonalities/techniques]? (evaluative)
   3. How does what you are hearing influence what you play? (descriptive/evaluative)
   4. Is there a point where it is acceptable to disregard what is written?
4. How did your relationship with the composer affect your preparations? (evaluative)

   Follow ups:

    1. How did feedback/instruction you received from the composer affect how you approached the music? (Circular)
    2. How familiar were you with the composer's previous work? (descriptive)

5. Can you tell me about the rehearsals? (descriptive/narrative)

   Follow ups:

    1. Were you asked to change anything?

6. Did you have a prior relationship with the other performers?

   Follow ups:

    1. How do you communicate expectations, criticisms, or encouragements? (descriptive)

7. Tell me about the role, if any, that improvisation plays in the actual performance.
8. How do you think the group/composer decides if a performance is going well? (circular)
9. How is preparing for _____ different than preparing for _____? (comparative)
10. Do you have anything else you would like to add?

Appendix 2: Edinburgh College of Art Ethics Approval

PGR Self Audit Checklist for Ethical Purposes 2016

100% complete

You have finished this self-assessment.

Completion receipt

Receipt number: 193399-193392-24332777
Submission time: 2017-06-28 16:01:35 BST

Appendix 3: Email to prospective participants

Dear,

I hope you are having a nice summer. I'm writing to you in the hopes of interviewing you for my PhD research at the University of Edinburgh, which focuses on score interpretation.

As part of my research, and because I myself am a bassist, I'm interviewing double bassists about their experiences with graphic and non-conventional notations, be it as a performer or composer. I wanted to interview you for this project because of your significant contributions to new music performance.

The interview will cover three topics:

1. Interpretational strategies for graphic and non-traditional notation
2. The role of improvisation in performance
3. The role of communication (between performers, between composer and performer) in preparation and performance.

I estimate our conversation will last between 45 minutes and an hour.

Would you be interested in participating in an interview of this nature? If so, would you have any availability in the next few months?

If possible, I'd like to hold our conversation in person and can travel to wherever would be most convenient for you. I'm also hoping to interview you in a space that can accommodate a double bass so various ideas and techniques can be demonstrated.

Sincerely,

Russell Wimbish
s1668970@sms.ed.ac.uk
07491 262 600
www.ruswimbish.com

Appendix 4: Participant consent form

CONSENT FORM

TITLE: Graphic Score Interpretation and the Double Bass

RESEARCHER: Russell Wimbish

PURPOSE: The purpose of this research project is to learn more about interpretational strategies for graphic and non-standard notation, the role of improvisation in performance and the role of communication in preparation and performance. As an experienced practitioner, you are in a position to provide me with insight into this process, and I would appreciate it if I could interview you.

PROCEDURES: The format of the interview will be a one to one discussion. I expect that the interview will take no longer than 1 hour. With your permission, I will audiotape the interview solely for the purposes of accurately transcribing the conversation.

CONFIDENTIALITY AND RISK: There is some risk involved if, for example, you divulge confidential information. Please know though that you do not have to answer any questions or discuss any topics that make you feel uncomfortable.

WITHDRAWAL OF PARTICIPATION: Should you decide at any time during the interview or discussion that you no longer wish to participate, you may withdraw your consent without prejudice.

REQUEST FOR MORE INFORMATION: You may ask more questions about the study at any time. Please contact Russell

Wimbish at s1668970@sms.ed.ac.uk

SIGNATURE: I confirm that the purpose of the research, the study procedures, the possible risks and discomforts as well as benefits have been explained to me and all questions have been answered.

_____

Signature Date

The participant agrees to be audio-taped YES NO

The participant consents to have his/her name used YES NO

Descriptive Linguistic Conceptual E.I.

592 **RW:** There's more than one type of
593 person, so.
594 **LM:** No, that, it can be a really
595 sensitive thing as someone leading an
596 ensemble. Um, sometimes it's easier to
597 get a specific change in a part, like uh,
598 'Can you play that note shorter?' Or,
599 'Can you,' uh, you know, a very
600 specific thing you can often get quite
601 easily. But, asking uh, asking someone
602 to improvise? *Differently?* I find is a
603 really strange thing to ask. Um, so, I
604 think a lot about that in terms of how
605 I'm structuring things for people to
606 improvise. Uh, it's kind of a deep
607 question because you're, partly this,
608 I'm playing this game of like 'how

is aware of performers feelings

Easier to get a performer to change determinate structures or easily identifiable articulations

Difficult to ask someone to improvise differently

Is aware of performer's feelings

Easier to get a performer to change determinate structures

Difficult to ask someone to improvise differently

Is this of someone's musical identity as an improviser is so tied to their output?

Implies that you shouldn't have to ask someone to improvise differently

But - how best to do it! Or would to

Implies that she tries to compose a way that will guide the improver in the direction she wants

Tries to guide the improviser

Descriptive Language Conceptual Ed.

609 much can I control, how much can I tie

610 their hands,' and then something new

611 emerges, 'how much can I uh, give

612 people things that they do already so

613 well and they love to do.' Uh, and so I,

614 I'm really conscious of, if I'm saying

615 you can improvise here, how much am

616 I tying your hands? How much am I

617 really controlling you, and how many

618 ways can I ask you to change that if

619 I'm really saying you can improvise

620 here? So, I think I wind up asking for a

621 lot of *ensemble* changes, as opposed to

622 individual changes in a way. Like,

623 'I'm going for a texture that's a little

624 more sparse and bare and ethereal

625 here.' Like, 'Can, can we all play less?

Considers the attitudes & abilities of the performer when composing or assigning parts

Has considered aspects of performer freedom when composing

doesn't want to limit players

Implies that if someone is given freedom to improvise, then you shouldn't constrict them too much

Considers abilities & attitudes of performer when composing or assigning parts

Considers performer freedom when composing

doesn't want to limit players

Depersonalises his critiques by focusing on the ensemble rather than the individual

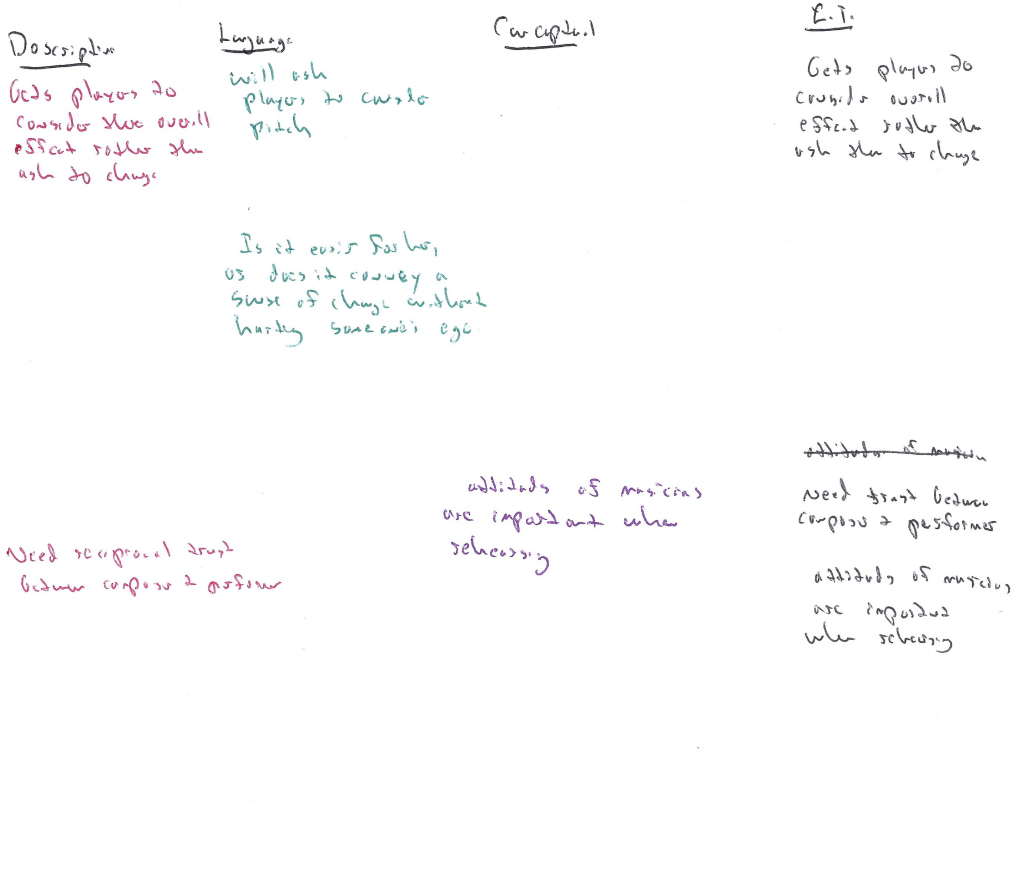
Depersonalises critiques by focusing on ensemble, not individual

Texture is enabled through graphic notation

GN can convey texture

Steadily for getting someone to improvise differently

626 Can we think about our range and how
627 dense, how densely we're playing in a
628 certain frequency range?' Or, and I
629 think that winds up being a little more
630 productive than trying to get somebody
631 to play a certain way if it's an open
632 ended uh, section.
633 **RW:** Sure.
634 **LM:** Yeah, but, but good players are
635 really into being challenged, so
636 luckily, if you all trust each other, you
637 can ask for something uh, and people
638 won't take that personally [laughs] and
639 they'll try it.
640 **RW:** Yeah, sure. Ok and, how do you
641 decide, when something's going well?
642 25:03



Appendix 6: *A.B. W.L.S.* (2018)

Original size: 42cm x 29.5cm

A.B. W.L.S.

This graphic score is a homage to musicians Anthony Braxton and Wadada Leo Smith. It is to be performed by a soloist of any instrument.

Graphic key

The three staffs indicate that the performer is to improvise melodically in a way that represents their impressions of the musical worlds of Anthony Braxton and Wadada Leo Smith. The curved lines traversing each staff do not indicate a literal contour for the performer to follow; they simply serve as signifiers of an improvised melodic line. The inclusion of three separate staffs indicates that the performer should be familiar with a broad spectrum of each artist's work, thus drawing upon many different musical aspects for performance.

The five patches of colour represent textural improvisation. The composer has assigned each colour with a quality that he associates with both Braxton and Smith. The performer is meant to develop, on their instrument, a textural musical expression of each quality. The colour code is listed below:

Blue – wisdom
Brown – unity
Green – creativity
Red – intensity
Yellow – vitality

Performance

The performer may start at any point within the score

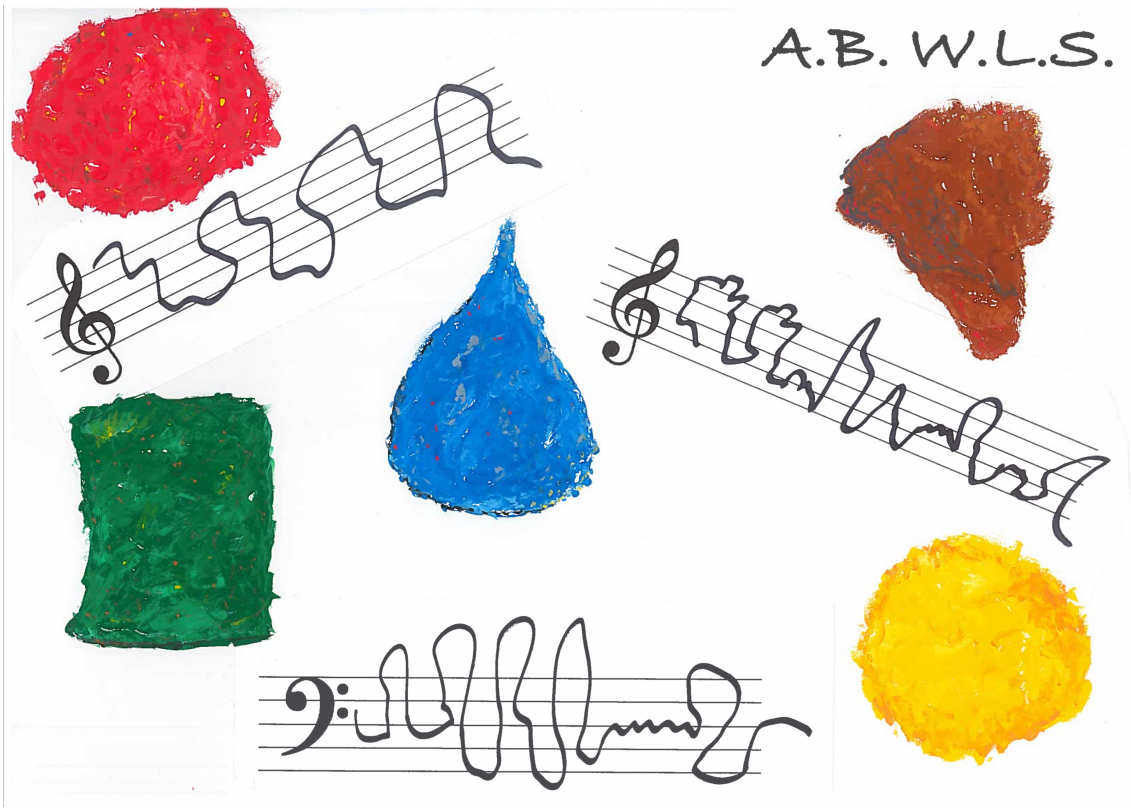
The performer may perform the graphic notations in any sequence

The performer may repeat a graphic notation as often as desired

The performer determines the amount of time it takes to perform a single graphic notation, which may vary each time that graphic is performed

The performer determines the duration of the piece

The composer recognises that all graphics are subjectively interpreted and encourages creative liberties not specified in this accompanying key


A.B. W.L.S.

Addendum: Notes on performance

In this addendum, I examine my own practice in order to make clear the relationships between the written key, the graphic notations and performance. I begin by discussing the graphics that instruct the performer 'to improvise melodically in a way that represents their impressions of the musical worlds of Anthony Braxton and Wadada Leo Smith'. My intention here is not simply to replicate and apply pre-composed phrases or improvised 'licks' from either Braxton or Smith. Rather, the performer should improvise using their knowledge of Smith and Braxton's music, freely referencing and exploring musical and even extra-musical ideas that they associate with each musician. In my own performance, this has included: references to specific compositions; blues vocabulary (common to both composers); atonality (common to both composers); serialism (common to both composers); angular melodic lines (that I associate with Braxton); a tuneful, Miles Davis-esque lyricism (that I associate with Smith); and genre conventions of bebop (in which both composers are proficient) such as chromatic embellishment, swing rhythms, and common harmonic structures found in jazz repertoire. I also extend this approach to Smith and Braxton's musical interests. For example, Braxton's love of Arnold Schoenberg's music might lead me to incorporate ideas from Schoenberg's creative world. To explore these concepts further, I discuss methods of score preparation and examine transcribed excerpts of my own performance.

The following examples illustrate how Braxton's music and musical interests have informed my performance. In fig. 1, I integrate the type of angular melodic lines and quartal intervals often found in Braxton's music (specifically 'Composition No. 69 M' (1983) and 'Composition No. 105 A' (1983), both of which I had previously transcribed for my personal study) with blues vocabulary and harmonic movement typical to the jazz tradition.

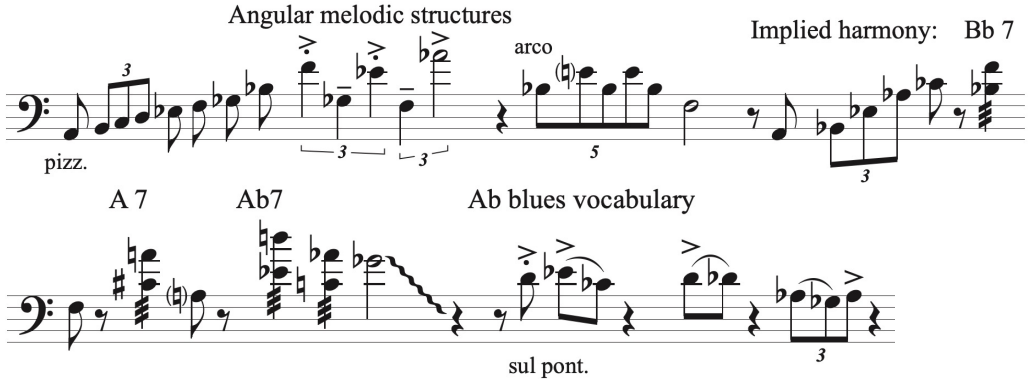


Fig. 1 Russell Wimbish, *A.B. W.L.S.*, (2018)
Transcribed from practice session 2/4/2020

In the next example (fig. 2), I outline a C minor tonality with chromatic embellishments often found in the bebop style. This dovetails into a melody of repetitive fifths resembling bars 5-6 of Braxton's 'Composition No. 69 M' (1983) (fig. 3). Rather than keeping this fifths pattern static (as Braxton does), I base the root movement on the first six tones (G#, E, C, D, Bb, C#) of the opening piano figure in Arnold Schoenberg's *Pierrot lunaire* (1912). In these ways, I reference both the music and musical interests of Braxton in my improvisation.

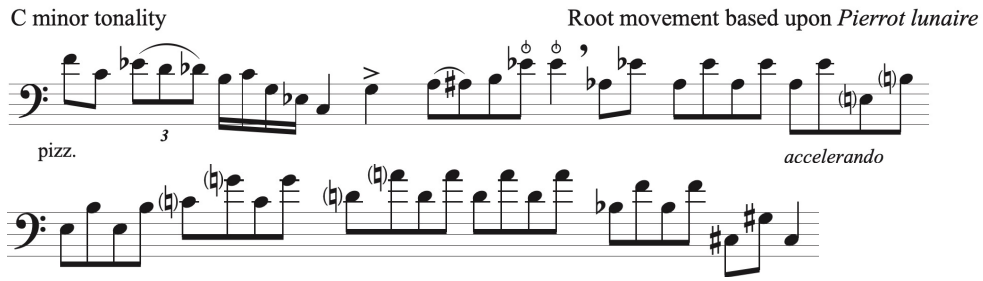


Fig 2 Russell Wimbish, *A.B. W.L.S.*, (2018)
Transcribed from practice session 2/4/2020

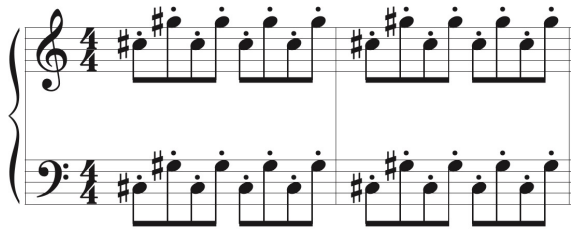


Fig 3 Anthony Braxton, 'Composition No. 69 M, score reduction mm. 5-6, (1983)
Transcribed from Anthony Braxton, *Four Compositions (Quartet) 1983,* track 2 (1983)

These are but a few brief examples of how I have engaged with Braxton's music in my own performance. To build improvisational fluency, I encourage performers to be methodical with their preparations. For example, to add structure to my practice, I often create a list of musical characteristics found in a particular piece or section of music that I wish to draw from when improvising (table 1). I improvise on these ideas, applying different instrumental techniques, timbres, pitch registers, key centres, etc. As a final point, I do not think that this method of practice leads to a derivative performance. For myself, this process has led to a better understanding of my own musical voice by facilitating a creative engagement with ideas that I might not be instinctively drawn towards.

Queen Hatshepsut
1. Minor tonality that is destabilised but never fully abandoned
2. Slow tempo
3. Metric irregularity
4. Use of silence and space between phrases
5. Emphasis of non-diatonic tones

Table 1 Practice checklist derived from the opening theme to Smith's 'Queen Hatshepsut' (2013)

Lastly, I offer a table of how I have thus far interpreted the colour graphics on the double bass. This table is not intended as an example of how bassists should perform the colour graphics. Rather, it demonstrates just one of the many ways in which these graphics may be interpreted.

Graphic	**Technique**
Blue (wisdom)	1. Freely improvise using a *pizzicato* double *glissando* technique on the D and G strings 2. In the right hand, hold the bow downwards within the palm so that the wood bounces upon the E and A strings whilst playing
Brown (unity)	1. Bow double stops in the lower positions of any two strings 2. Slowly slide one of the notes out of tune, eventually settling into another interval
Green (creativity)	1. Lightly draw a full bow quickly across the string, so as to not produce the fundamental tone 2. At the same time, repeatedly move the bow placement between the *ponticello* and *ordinario* positions 3. Alternate this technique between the E and A strings 4. Tap the left hand anywhere on the D or G strings, sliding the resulting tone either upwards or downwards in pitch
Red (intensity)	1. *Tremolo* bow just above the bridge (any string) 2. On the same string, trill between any two notes in thumb position 3. Intersperse this with double stops consisting of natural and artificial harmonics
Yellow (vitality)	1. Alternate between a *ricochet* bow technique and rolling the bow across all four strings 2. In the left hand, finger double and triple stops

Table 2 Textural techniques applied to colour graphics

Appendix 7: *Duo for Melodic Improvisers* (2017)

Original size: 21cm x 29.5cm

Duo for Melodic Improvisers

1. To be played by any two instruments, each represented by a circle on either the right or left-hand side of the page.

2. Times given correspond to the point at which each section begins.

3. The piece ends at 5 minutes and 35 seconds.

4. Times are approximate.

5. Players are to improvise melodically. That is to say, performers should aim to present a clearly discernible melodic line. Extended techniques and unconventional timbres are allowed *so long as they are in service of the melodic line*.

6. The size of each circle represents the degree to which the material one performs functions as either featured melody or accompaniment. Therefore, the larger circle indicates the dominant performer. For the smaller circle, as the size increases, so does the prominence of the accompaniment. Circles of the same size indicate that both players are featured equally.

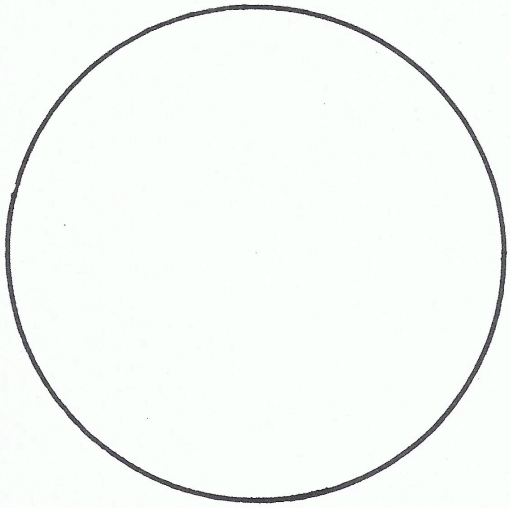
7. Sizes are not approximate and are meant only to suggest levels of dominance and accompaniment.

8. Dynamics are chosen by the performers.

9. Dynamics may be pre-planned or chosen freely during performance.

p. 1

:00



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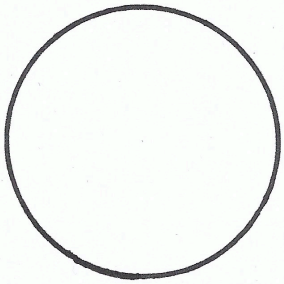

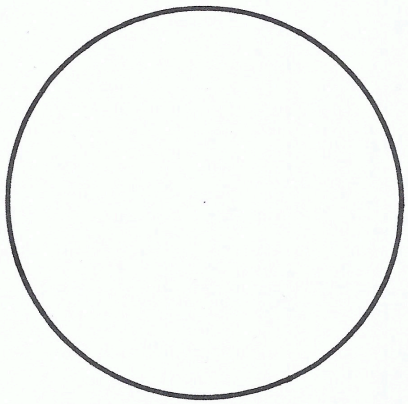

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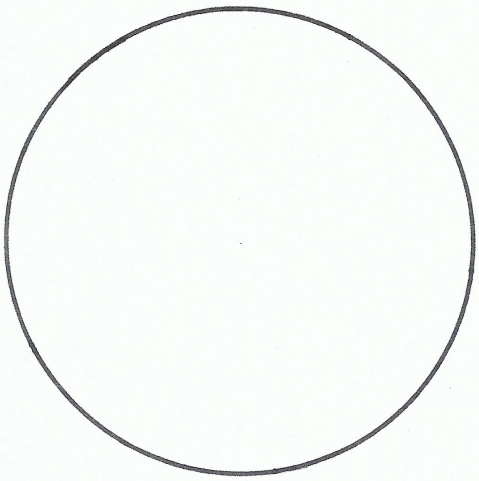

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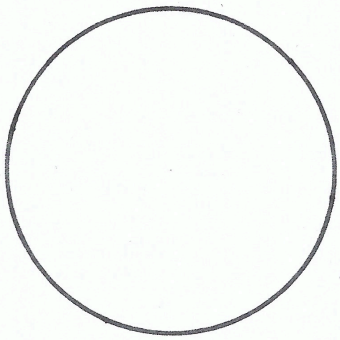

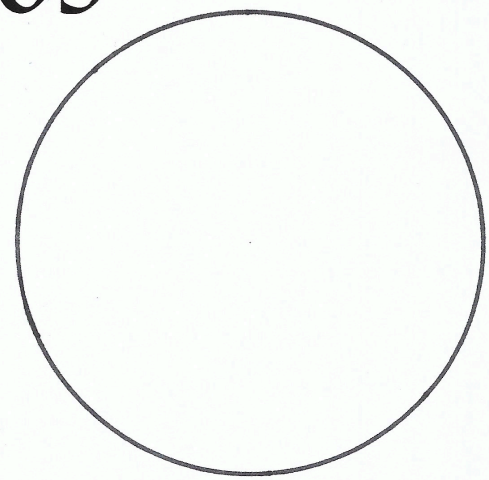

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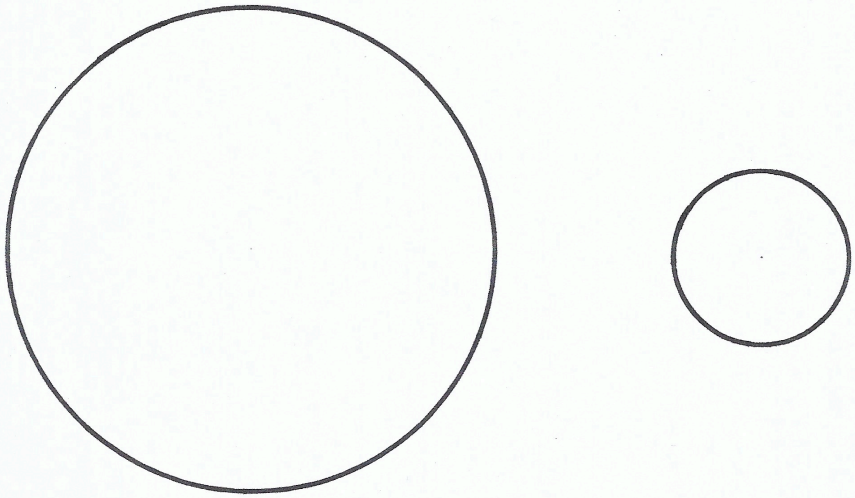

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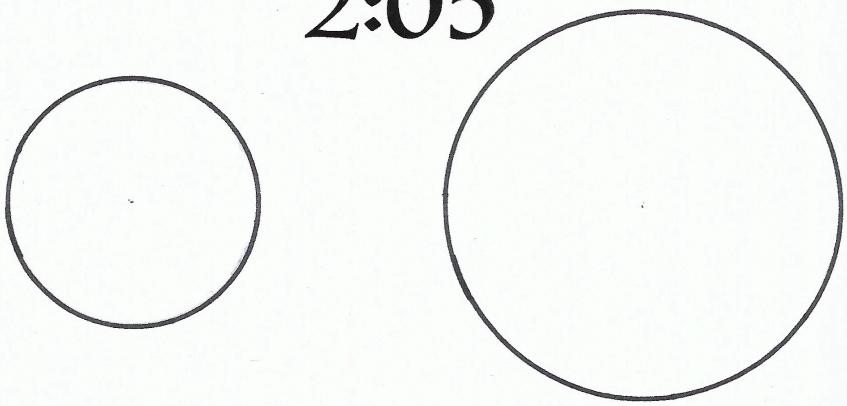

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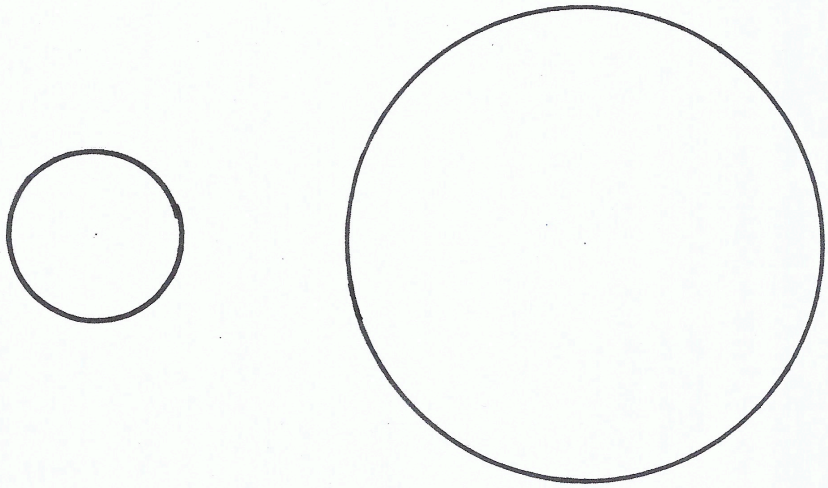

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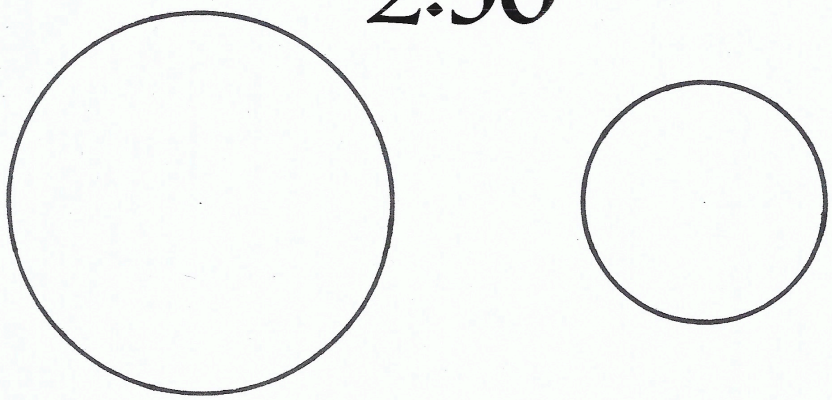

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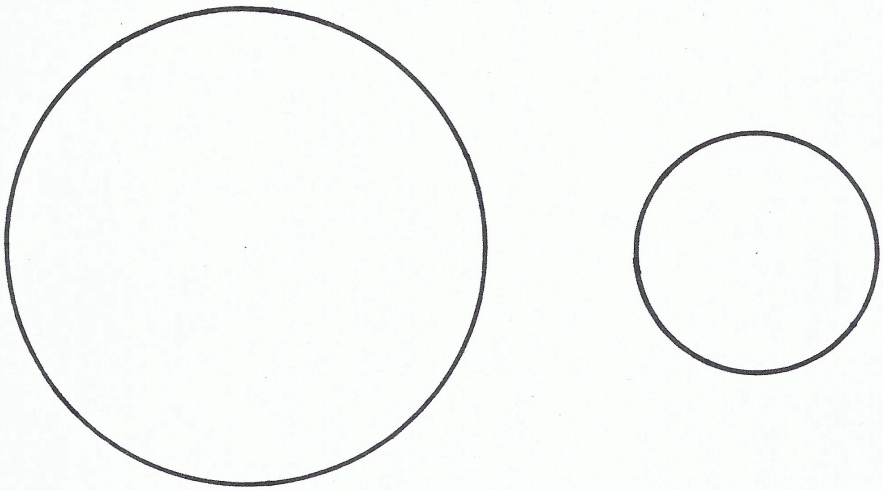

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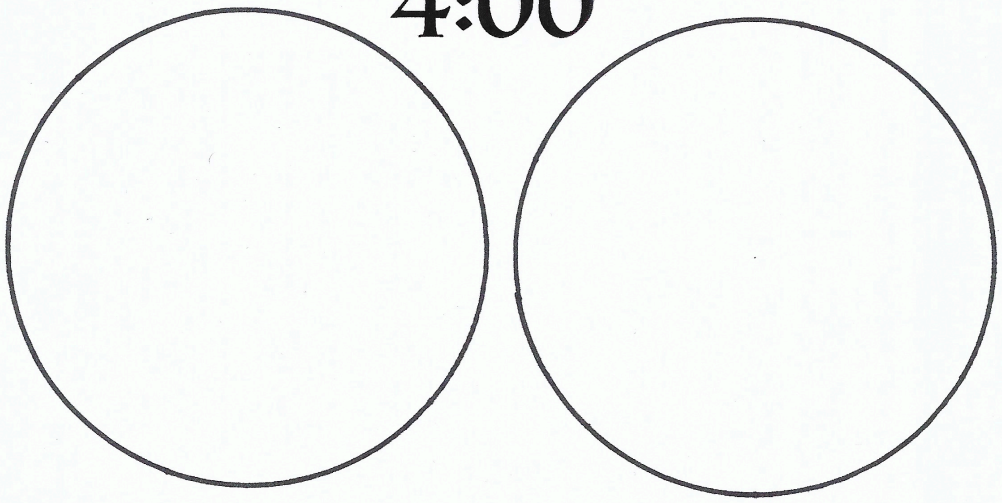

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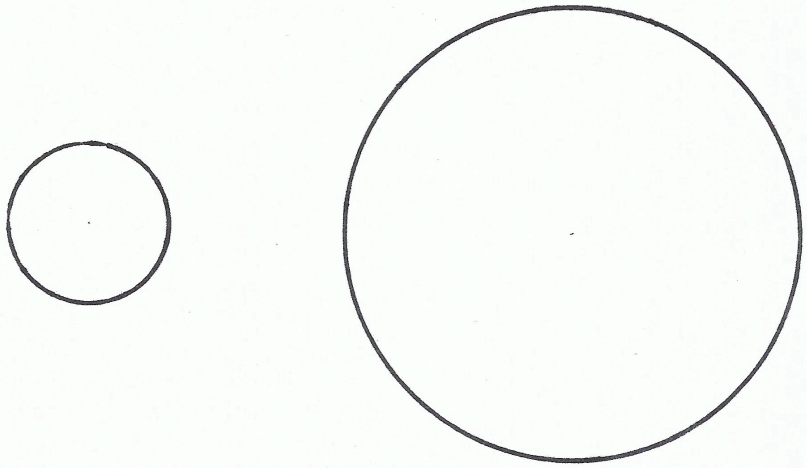

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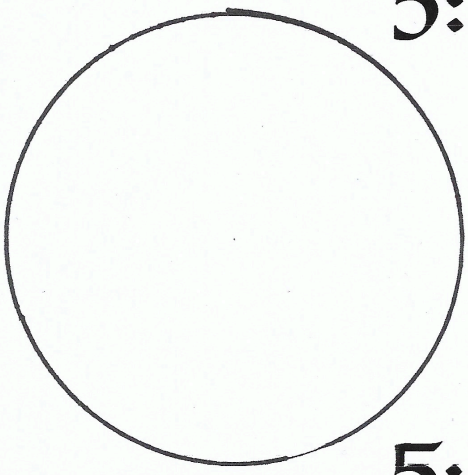


5:35

Practice suggestions

Experienced improvisors may find that the greatest challenge of this piece is adhering to the points in which one must shift between a dominant or supporting role. Rather than following intuition and letting improvised ideas and interactions develop organically, the performers' interactions are regulated by the score's temporal boundaries. For this reason, when rehearsing, I suggest full run-throughs of the piece without stopping to address or discuss musical interactions, perceptions of dominant and supporting roles, and missed cues. This will help orient the performers with the temporal progression of the score which, once accustomed to, will begin to feel natural.

Performers are strongly discouraged from deciding upon tonal or rhythmic strategies prior to performance. An important part of this piece is the real-time creation of and reaction to melodic content. It is my feeling that pre-establishing a tonality or metre, when combined with the score's regulation of the improvised interactions, adds a level of predictability that has little aesthetic value. Rather, I encourage taking risks and exploring sounds and ideas as they occur. Atonality, polytonality, and even moments of serendipitously created tonal coherency are all acceptable and encouraged. 'Playing it safe' is not.

Appendix 8: *Graphic Piece for Solo Bass* (2019)

Original size: 42cm x 59cm

Graphic Piece for Solo Bass

1. The performer navigates through the circles, or modules, within the score, following the connecting paths and performing the notations within each circle.

2. The piece begins with the large circle in the lower left-hand corner; it ends when the performer has played the phrase within the large circle in the upper left-hand corner.

3. The performer must play each module at least once.

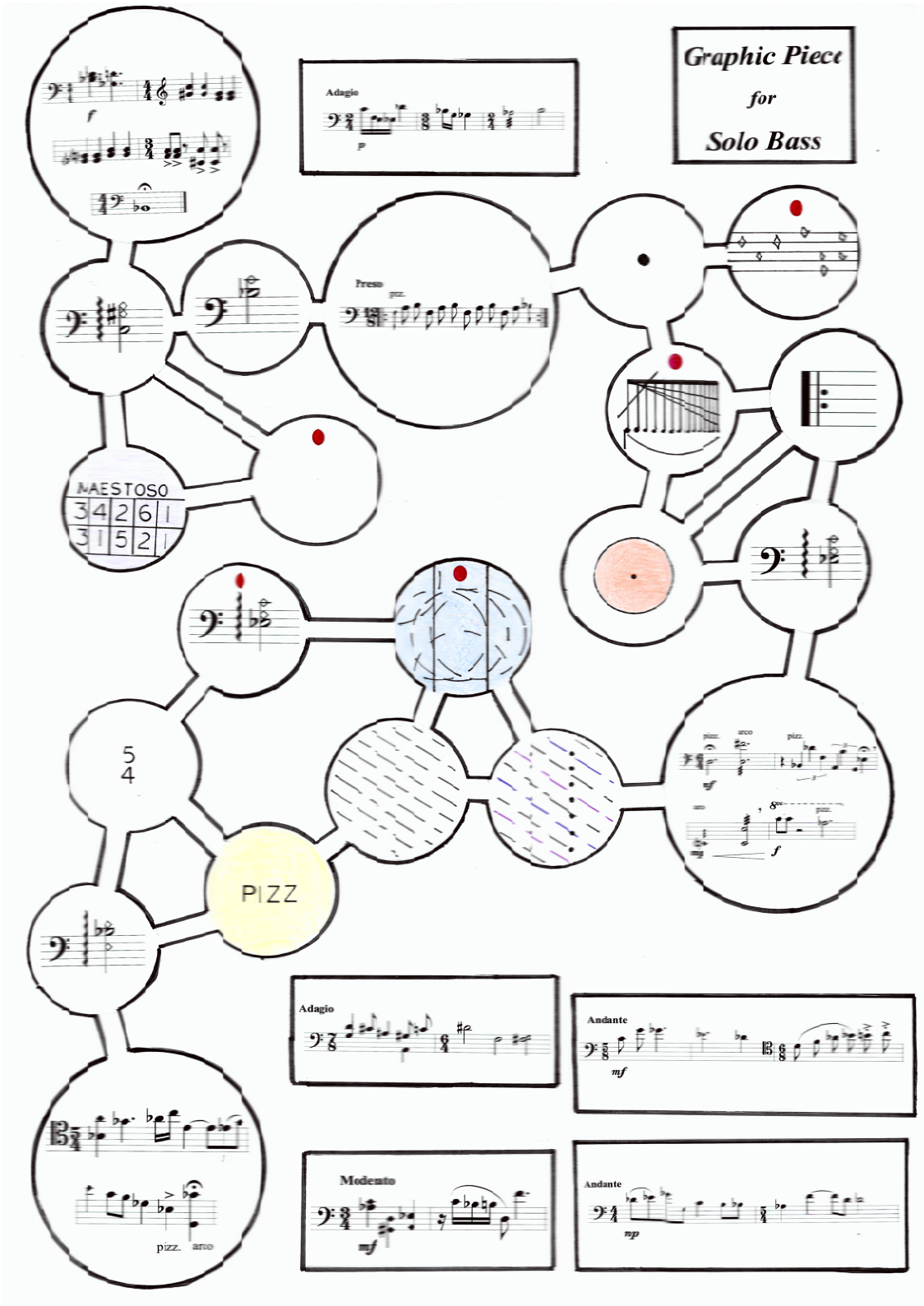
4. Once a cluster of small circles has been entered, the performer may move between them in any direction and in any order allowed by the connecting paths. A performer may return to a small circle as often as they like.

5. The written phrases within the large circles can be played only once. These phrases act as barriers between the three clusters of small circles. Once the performer leaves a cluster of small circles by playing the phrase within a large circle, the player may not return to the previous cluster.

6. When a performer arrives on a circle containing a red dot, they have the option of playing any one of the melodies within the rectangular boxes in addition to the notations within the circle. The performer may return to the circles with red dots as often as they like and may play material from different rectangles upon each visit.

7. Modules containing graphic notations are to be freely interpreted by the performer.

8. Diamond-shaped note heads signify a natural harmonic played in the location of the written note. As such, pitch or octave may not be approximate.


Graphic Piece
for
Solo Bass
Adagio
Presto
MAESTOSO
3 4 2 6 1
3 1 5 2
5
4
PIZZ
pizz.
arco
Adagio
Andante
mf
Moderato
mf
Andante
mp

Performance Notes

To aid those who may be unfamiliar with performing graphically notated works, I discuss my own approach to interpreting the modules of this piece. Certainly, not every module requires supplementary explanation. Those containing traditionally notated figures can simply be played as written. But for many of the modules, a word or two regarding interpretation and performance may be beneficial. Nonetheless, these comments are intended only as starting points for those wishing to perform this piece. I encourage each performer to develop a personalised approach to interpreting the graphic modules.

1. Elements of notation: Many of modules contain only elements of traditional notation: a time signature, an abbreviation for *pizzicato*, a repeat sign, and feathered beams. In such modules, these notational components can be taken literally. For example, the performer can play in five-quarter time, use *pizzicato* techniques, repeat a phrase or idea, etc. As for the feather-beamed *accelerando*, the quarter note with the downward stem indicates a sustained tone throughout the *accelerando*, which I typically accomplish by using an open string or natural harmonic. The peculiar appearance of this *accelerando* is intentional, and the performer must be creative with how this affects performance. For example, are there, in fact, multiple tempos? Should articulations be exaggerated? Should one attempt

virtuosic speeds? Do the small note heads imply a *delicato* passage? Consider these questions and attempt to devise your own strategies when playing this module.

2. Pitch: When interpreting the modules containing graphic notations or components of traditional notation, the performer must consider how their own pitch choices relate to the traditionally notated phrases. The phrases themselves are derived from two separate tone rows: Bb, D, Gb, Ab, C, E, Eb, G, B, A, F, Db; and G, Ab, A, E, Eb, C, Bb, B, D, F. To prepare for my own performance, I begin by practicing each row forward and in retrograde, eventually working to transpose and invert each row according to 20th-century compositional practice. My goal is to gain fluency in this process so that, when interpreting the smaller circles, my improvised lines keep with the character of the pre-composed material. Though this preparatory method is not required, the performer should carefully consider their tonal strategies and take care so that the traditionally notated material transitions seamlessly with the other modules.

3. Colour: With the exception of the red dots, the sparse use of colour is limited to soft, light hues. Consider what interpretation and performance strategies are appropriate for these colour tones. Does a light blue or purple indicate a loud, aggressive performance with biting timbres? Does light

yellow suggest a heavy, sombre *maestoso*? In both instances, I would think not. Plan, practice and perform accordingly.

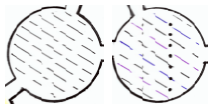
4. Graphics: In this section, I discuss my mapping strategies for some of the graphic notations. I have given many of these graphics multiple interpretations and often play them several different ways within a single performance.

A)  I often use this graphic to indicate moments of silence. In other instances, this graphic indicates vastness or emptiness – the sound of being outdoors and hearing only wind or of being in an environment so bereft of sound that one hears one's heartbeat. These ideas can be translated musically by lightly drawing the bow in *sul tasto* position whilst muting the string with the left hand (wind); rubbing the fingertips at varying rates across the wood (wind); or drawing the bow in a circular motion on the E string whilst muting with the left hand (heartbeat).

B) 

This graphic has multiple interpretations. I often use it to indicate the number of notes to perform within a rhythmically stable unit (each square = one unit). Other times, the numbers indicate the number of beats to sustain a single note, with each square indicating a note change (e.g.. for first row: Bb for 3 beats, D for 4 beats, etc.). The two rows can also be combined. For example, I might play three pitches (as indicated by first square of the top

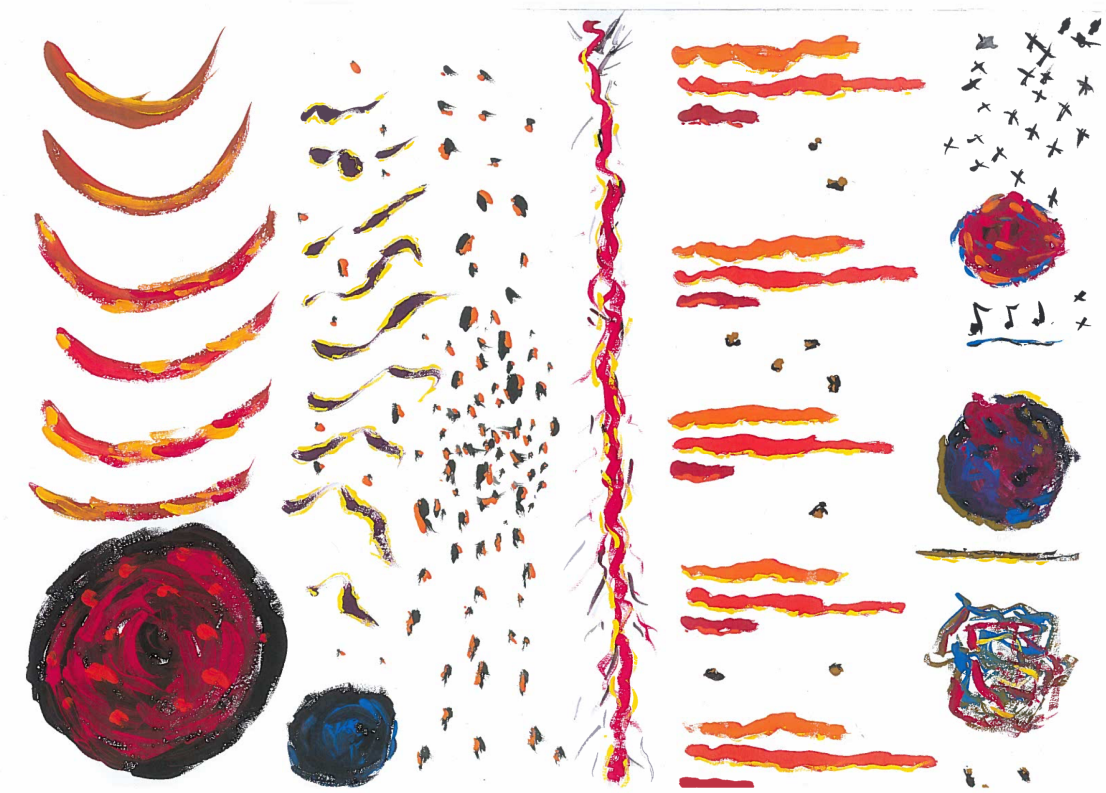
row) with three different techniques or dynamics (as indicated by the square beneath it).

C)  For the left graphic, I improvise in short melodic bursts, often with a *spiccato* bow stroke. For the right graphic, I retain the same strategy, yet map the colours to indicate changes in bow pressure and position (black = *ord*; blue = a light bow stroke that fails to produce a fundamental tone; purple = a heavy bow in *sul tasto* position). The vertical lines represent intermittent downward *glissandi* performed with a *ricochét* bow stroke played *col legno*. Regardless of the strategy one employs, the interpretation for the graphic on the right should reflect an elaboration of how one interprets the graphic on the left.

As for the remaining modules, I am happy to say that the performer is now left to their own creative devices. If having difficulty mapping an interpretive strategy to a module, start simple. It is better to have a strong command over simple ideas than to struggle with a concept or technique beyond one's current capabilities! As with any piece of music, mastery comes with time and experience.

Appendix 9 *Imachinations (for solo bass)* (2018)

Original size: 21cm x 29.5 cm



Notes

This piece provides a structural framework for a textural performance on the double bass. Each graphic 'family', or group of graphics with similar visual characteristics, represents a distinct musical texture. The performer moves throughout the score until they have played through each graphic family. It is the performer who decides a) what textures each graphic family represents; b) the techniques that one must apply towards their instrument in order to produce these textures; and c) the order in which to play each family. This piece is not simply an impetus for free improvisation. The performer must think carefully about the sonic world they wish to establish and map musical information to each graphic family prior to performance. Furthermore, the mappings and the order in which the graphics are performed should remain stable across multiple performances.

In the following section, I share my own method of performing this work. I list each graphic family in the sequence in which I perform them and provide a brief description of my mappings. Nonetheless, this overview of my performance method is only intended to demonstrate how I have played the piece. It is my expectation that anyone who wishes to perform *Imachinations* 'correctly' must develop their own interpretational strategies and system of score navigation.

1.  Roll the bow back and forth across the A, D and G strings, using natural harmonics and stopped notes to create dissonant and constantly shifting harmonies. As the half circles grow brighter in colour, alternate the rolled bow textures with aggressive, fast playing in a high register. This section can get very frantic, mixing *pizzicato* strumming with the aforementioned techniques.

2.  These graphics, performed left to right, correspond to 'thick' textures achieved by bowing a series of double stops in the lower and mid-range registers. Colours indicates pitch register, timbre and bow speed. Play the red circle with a fairly bright timbre, keeping in the middle register (third through fifth positions) and using a somewhat fast bow bordering on *ponticello*. Play the blue circle with a slow *ordinario* bow, keeping the left hand in half through second positions. Size corresponds to temporal duration, so the performance of the red circle should be much longer than that of the blue.

3.  These shapes indicate short, separated sounds. The larger buta shapes are longer in duration and have a clearly discernible pitch. The smaller orange and green shapes are much shorter in duration - almost to the point in which they are non-pitched. The number of graphics does not correspond to the number of notes one plays. Rather, the graphics indicate two alternating textures within this one section.

4.  This graphic indicates rapid ascending and descending *glissandi* played *ponticello* and with a full bow. In the left hand, alternate finger pressure to produce rapidly fluctuating harmonics and overtones.

5.  Play a quick succession of four separate techniques. The top orange line indicates a sustained trill. For the second line, play harmonics past the edge of the fingerboard whilst using a *tremolo* bow. The bottom red line indicates a quick succession of triple stops. The orange and green dots are interpreted in the same manner as no. 3.

6.  Play short, non-pitched percussive sounds using a *ricochet* bow stroke whilst stopping the notes with the left hand. Alternate this texture with *pizzicato* ghosted notes.

7.  Similar to no. 2. Play a series of double stops with a fast bow, *ordinario* or *ponticello*, in any position below thumb position. The blue hues indicate short melodic fragments that are interspersed with the textual playing.

8.  These notes indicate melody. Melodies should be brief and, generally, atonal or tonally ambiguous. The blue line indicates that one should play these short melodies in the lower to middle registers with an *ordinario* bow.

9.  Similar to nos. 2 and 7. The dark hues indicate to play a series of double stops in the low register of the bass; the red hues indicate brief excursions into higher registers. The green and yellow line is mapped as a sustained tone with heavy vibrato. This is played after the circle.

10.  A melodic scramble – achieved by *glissandi*, played *arco* and *pizzicato*, that connect tones and brief melodic phrases. As this circle is not fully saturated with colour, the timbre is lighter and more reminiscent of a traditional ‘classical’ tone. Here, the melodic material may reference major or minor tonalities.

Appendix 10 *Le temps est écoulé* (2018)

Original size: 59cm x 42cm

Le temps est écoulé

This is a piece for an ensemble of any size. The ensemble must determine the duration of the piece prior to performance. Times may be approximate (for example, five minutes and fifteen seconds) or generalised (about half an hour). Performers determine the meaning of the graphic notation. No performer is required to perform every graphic, nor is any performer required to perform for the entire duration of the piece.

Suggestions for rehearsal and performance

The primary challenge of this piece is for the ensemble to construct a coherent and effective performance strategy. As the notations themselves have no inherent musical meaning, the ensemble must decide how they will map musical information onto the score's visual attributes. These mappings can be highly specific or loosely plotted. What is important is that they reflect a well-conceived performance aesthetic. To performers who may need guidance, I offer a pathway to beginning this process.

The ensemble must first discuss the visual attributes of the score and how they might affect performance. For example, what moods or musical qualities do the colours suggest? Do the different colours indicate a change of tonality, timbre or rhythmic activity? Do they signal specific ensemble members to perform? How does the placement of colour within the score impact upon performance? This line of questioning must also be applied to the graphic symbols. How is the musical activity indicated by a circle different from that of coloured splotches? What of the *vegvísir*, an Icelandic symbol thought to aid navigation through rough water? What of the *Wawa Aba* (top left of centre), an Ashanti symbol of perseverance? How do they relate to each other, and how do they both relate to the title of the piece? How should these relationships translate musically? It is important to stress that, per my own aesthetic, the performance should not involve the blatant use of songs,

musical gestures or performative tropes from either Icelandic, West African or French music. Rather, consider how these symbols might affect the character of the performance. Perhaps the music will be urgent and tumultuous. If so, the use of dissonance, atonality and rhythmic instability may be appropriate. Or, if the performance will be meditative and serene, perhaps the graphics should indicate sustained tones, melodicism, and soft textual effects. These are but a few examples of how mapping strategies can coalesce through discussing the score's visual attributes.

The ensemble must also decide how these mappings fit within the temporal limit set for performance. For example, the group may decide to read the score in a clockwise fashion and perform the graphics as they occur along this trajectory. Or, the ensemble may designate graphics located anywhere within the score as temporal markers. Regardless of the strategy employed, each member of the ensemble should be clear about how the graphics relate to sonic events and how these events can be recognised throughout the temporal procession of the piece.

Appendix 11: *Machrie* (2019)

Original size: 63cm x 45cm

Machrie

Instrumentation: Flute, clarinet, trumpet, violin, cello, improvising electronics

Note: The term 'electronics' is intentionally ambiguous. It may include laptops, circuit bending, turntables, prepared electronic instruments, etc. The only specifications are that the electronic musician generally be producing non-pitched material and have the means of controlling amplitude.

The score: *Machrie* is inspired by the six extant stone circles near the settlement of Machrie on the Ilse of Arran, Scotland. The piece is comprised of six modules, each of which represents one of these six circles. The number of phrases within each module corresponds to the number of stones forming the circle that module represents. The modules and phrases are numerically labelled.

The process: Each module, or 'circle', is cued by a hand signal from the conductor. Modules must be introduced sequentially, though sequential ordering applies only to each module's introduction. Therefore, the conductor may introduce Circle 1, introduce Circle 2, and then return to Circle 1 before

introducing Circle 3. Once introduced, a module may be returned to as often as desired and in any ordering.

Once a module is cued, the conductor selects from the numbered phrases, or ‘stones’, therein. With few exceptions (see **The modules**), the stones may be introduced in any order and repeated any number of times. The conductor is not required to select every stone.

The piece begins with improvisation from the electronic musician. The phrases in Circle 1 are then introduced at the conductor’s discretion. The performance may conclude on any module and ends with improvisation from the electronic musician. The conductor determines the duration of the performance.

Improvisation: The conductor may at any time select ensemble members who are comfortable improvising to improvise freely. Should this occur, notated material subsequently selected by the conductor is performed as written, minus the improvising musicians. Ensemble members selected to improvise will do so until cued to stop by the conductor. The conductor may suspend the selection of notated material for any length of time and, if they so wish, may improvise with the members of the ensemble. Improvisation from the electronic musician should be ambient and sparse. Unless cued to

stop by the conductor, the electronic musician is expected to improvise throughout the performance.

Graphics: Graphics depict the stone circles from which the musical motifs were inspired. Just as this piece is my musical impression of the Machrie stone circles, improvising musicians should consider their own impressions of these graphic depictions when improvising within a particular module. The set of graphics found in circle five is explained in the next section.

The modules:

Circle one: Quarter note = 80 bpm.

Circle two: Quarter note = 94 bpm. Phrases must be introduced sequentially and without cued improvisations. Once all phrases have been introduced, they may be performed in any order and interspersed with improvisation.

Circle three: Quarter note = 94 bpm.

Circle four: 1) quarter note = 94 bpm; 2) quarter note = 100 bpm; 3 &4) quarter note = 110 bpm. Each stone must be played at least once. Preferably, these short phrases will alternate with cues for free improvisation.

Circle five: The twenty-three musical gestures in this circle are grouped into two sections.

Section 1): the ensemble members choose from 1–12. Each note is played as an eighth note and surrounded by space. Sequence, octave and rate of selection are determined by the performer.

Section 2): the ensemble members choose from 13-23. Unless otherwise indicated, these short gestures are played as quarter notes and may be applied to any pitch.

13.  play highest note of the instrument

14.  play lowest note of the instrument

15. …. rapid *staccato* repetition of a single pitch

16. >>>> strike a single pitch repeatedly with the wood of bow/ flutter tongue

17.  bow tailpiece/play with mouthpiece only

18.  bow between the bridge and tailpiece/play multiphonic

19.  tap bow on tailpiece/click keys of instrument

20.  play instrument as percussion

21.  rapid *tremolo*

22.  rub hand on wood/blow air through instrument

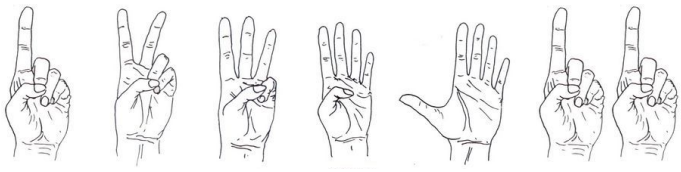
23. x ghost note

Circle eleven [six]: 1-4) quarter note = 73 bpm. 5) The conductor cues individual ensemble members to choose freely amongst the four pitch groupings. Octave, tempo and rhythm are determined by the performer. The conductor may then select from stones 1-4, which are performed by the remaining ensemble members.

Hand signals:*

 = Module (circle)

 = Phrase (stone)

 = Numeric indicators

1. 2. 3. 4. 5. 11.

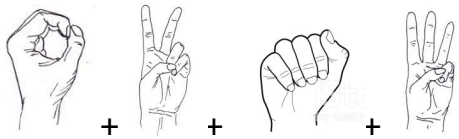
 = Improvise

 = Stop improvising

 = Select a performer

 = volume (↑ louder ↓ softer)

Examples:

 = play the 3rd phrase in module 2

circle 2 stone 3

 +  = that performer improvises

points at performer improv

 +  = that performer stops improvising

points at performer stop

A few more words on improvised performance: This section gives additional clarification for the relationship between the graphic depictions of stone circles and freely improvised performance. The stone circle graphics correspond to musical moments when, if selected to improvise by the conductor, the performer must spontaneously react to contemporaneous events. For this reason, the graphics do not represent specific actions. As explained in **Graphics**, just as the actual Machrie circles inspired me to compose the piece, it is my hope that these images will inspire and influence the performers' improvisation. Yet, how might these symbols actually affect performance? First, the performer must engage with the visual characteristics of the graphics – what the images remind them of, how the images make them feel, and how these ideas might take musical form. Through this process, the performer develops a unique and personalised strategy for improvised performance.

To offer my own strategies, the large vertical stones with their distinctive features (modules 2 and 3) invite strong melodic phrases with a sophisticated structural logic, which could be derived from common-practice tonality, twelve-note composition, or something else entirely. They do not suggest textural effects or simple diatonic melodies in a major or natural minor key. Conversely, the circles comprised of many smaller stones brings to mind short melodic fragments and intermittent bursts of texture. Of course, these are my own impressions. I encourage the improvising performer to work out their own ideas and offer their own unique creative contributions to this piece.

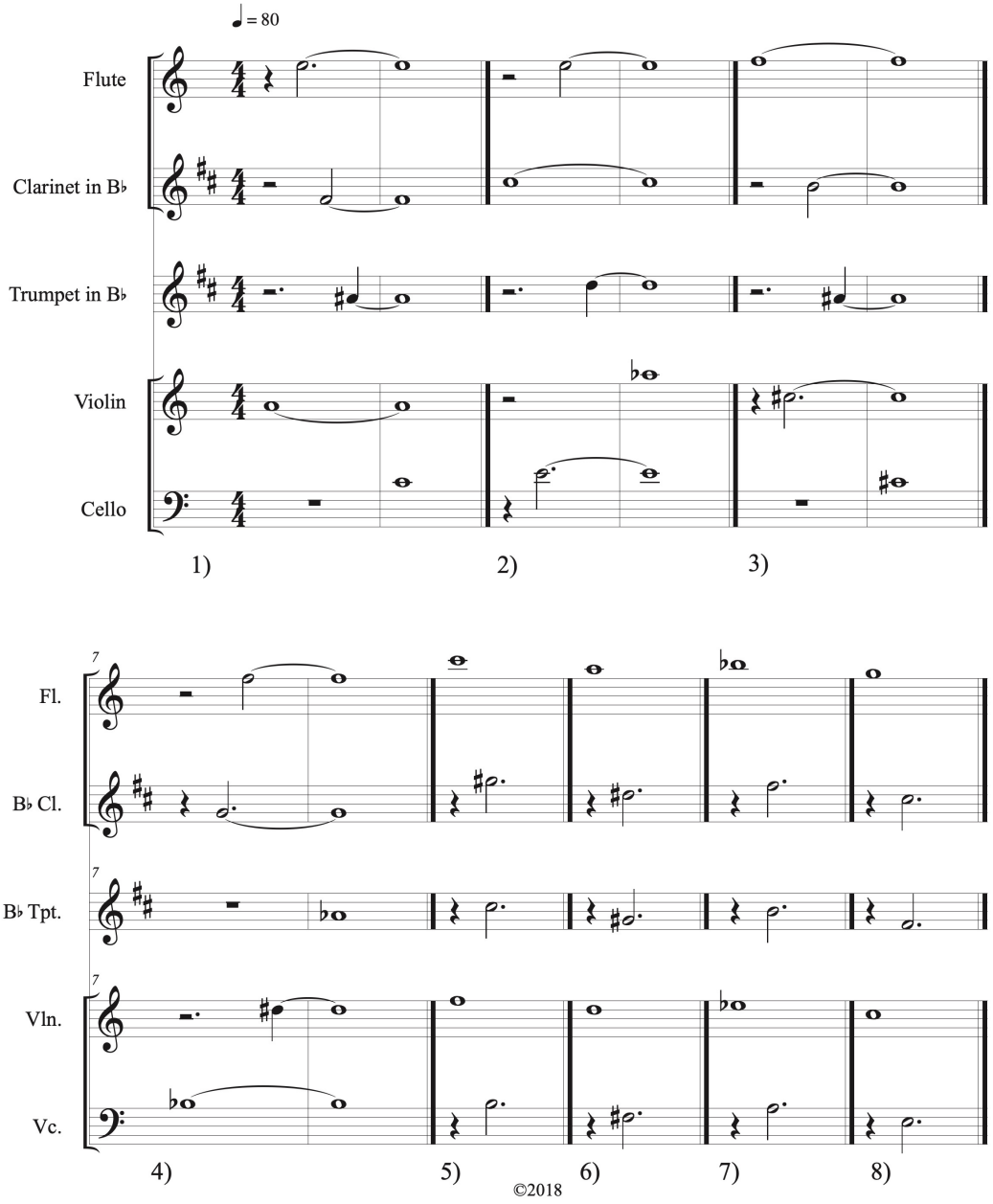
*Images reproduced from
http://workingwithchildren2.blogspot.com/2011/11/first-contact.html

Machrie

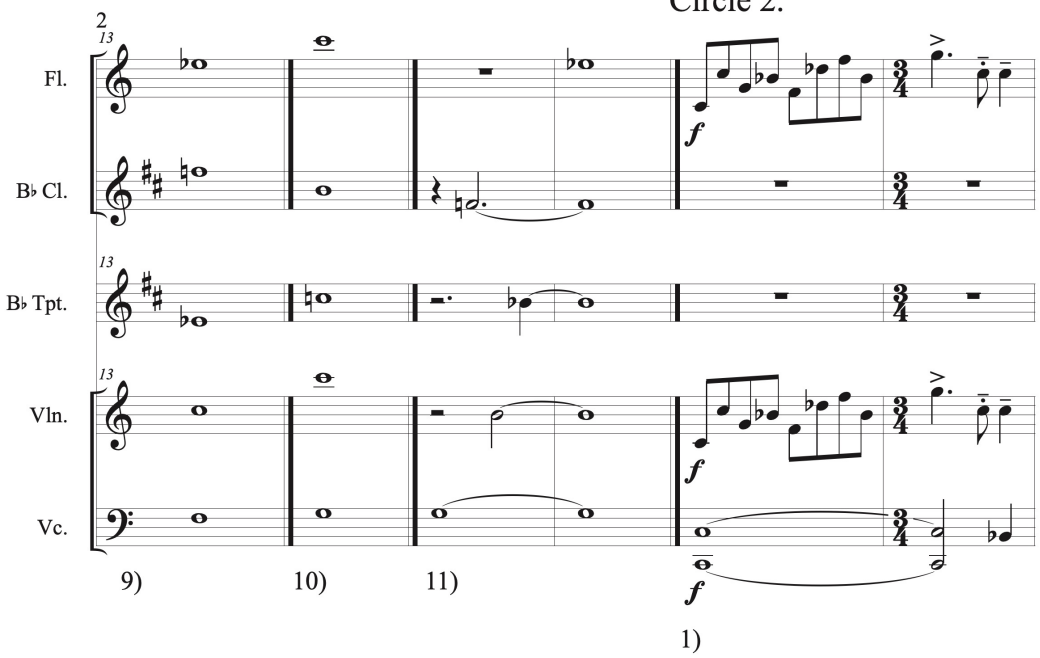
Conductor's Score

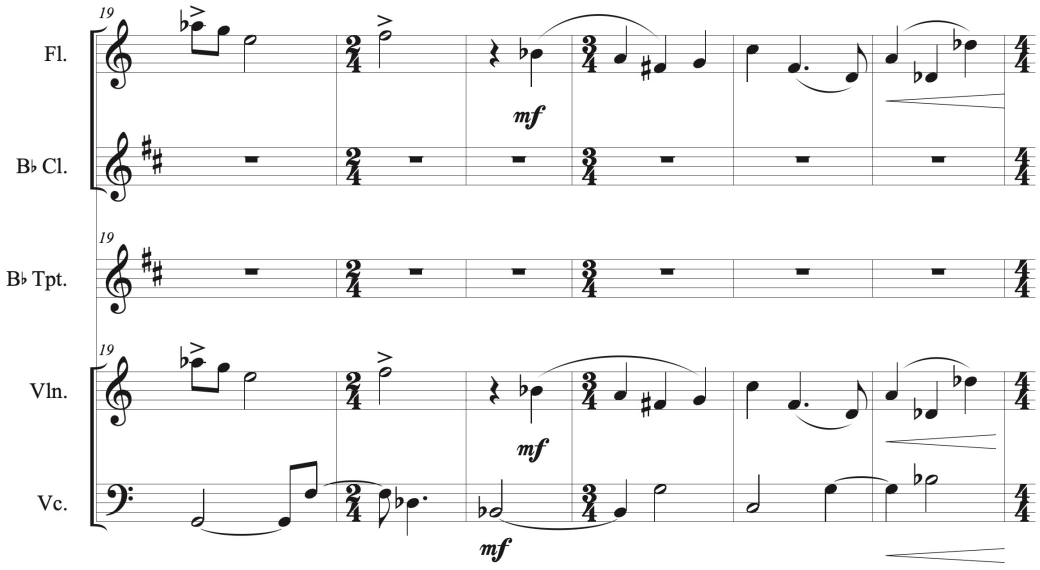
Russell Wimbish

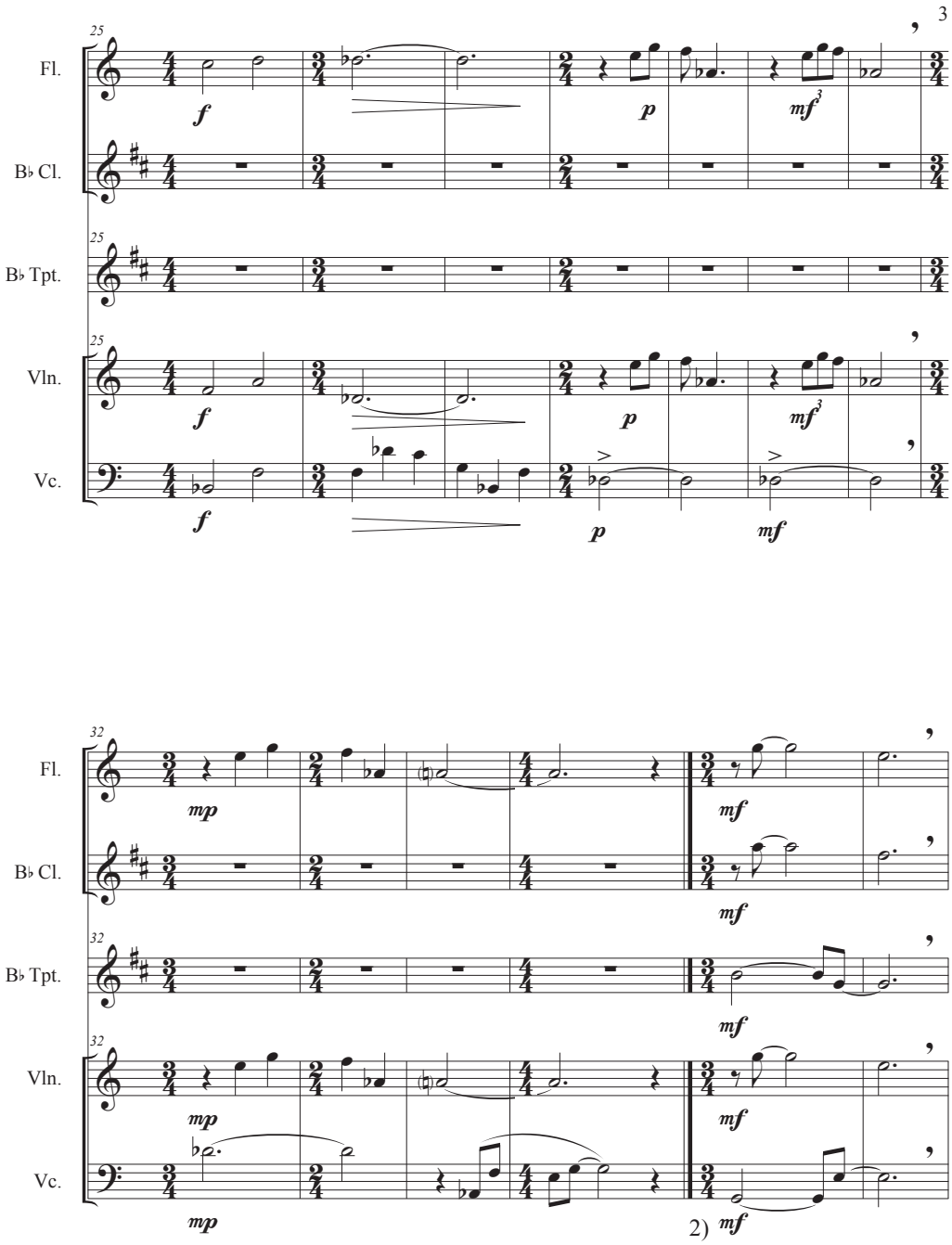
Circle 1.

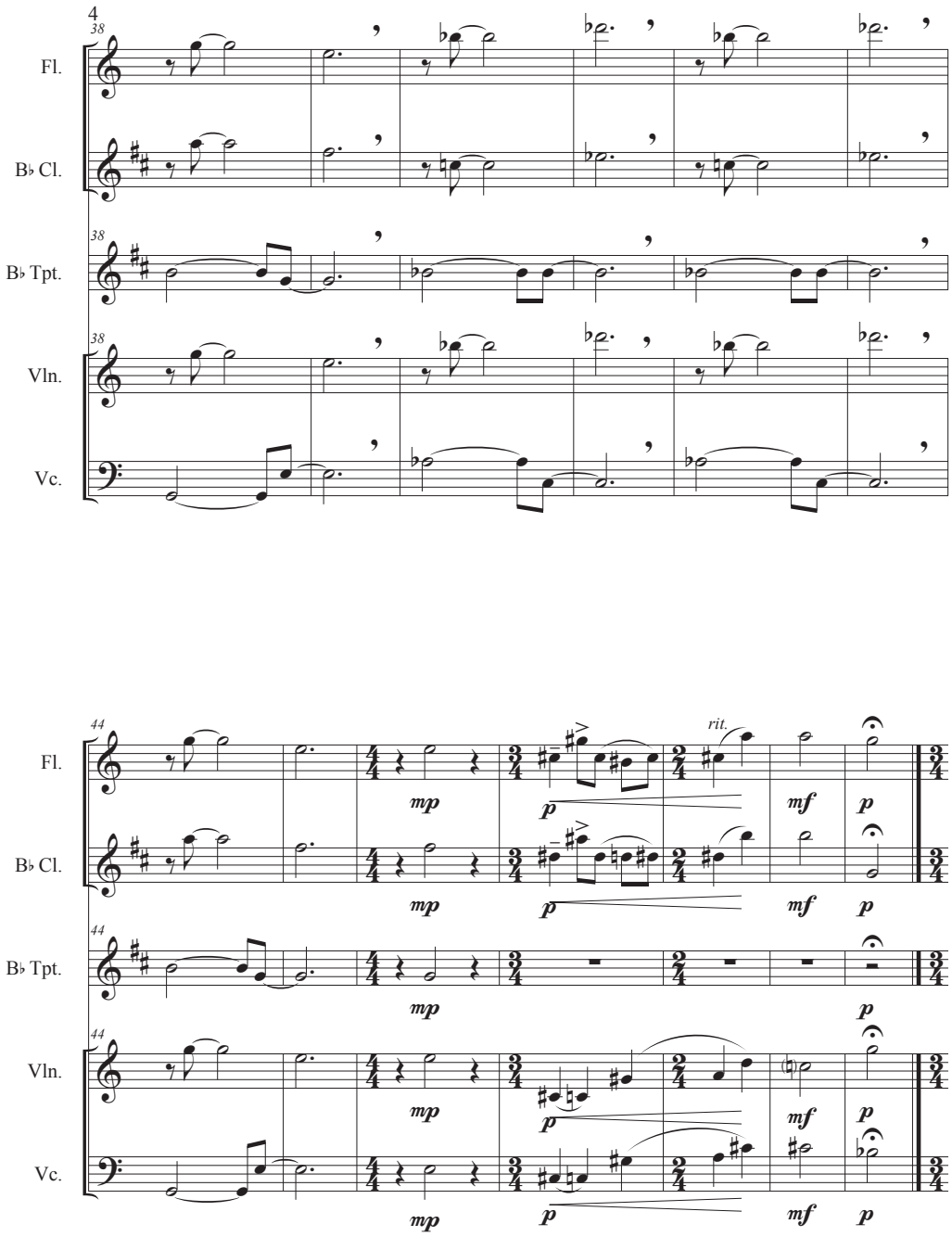


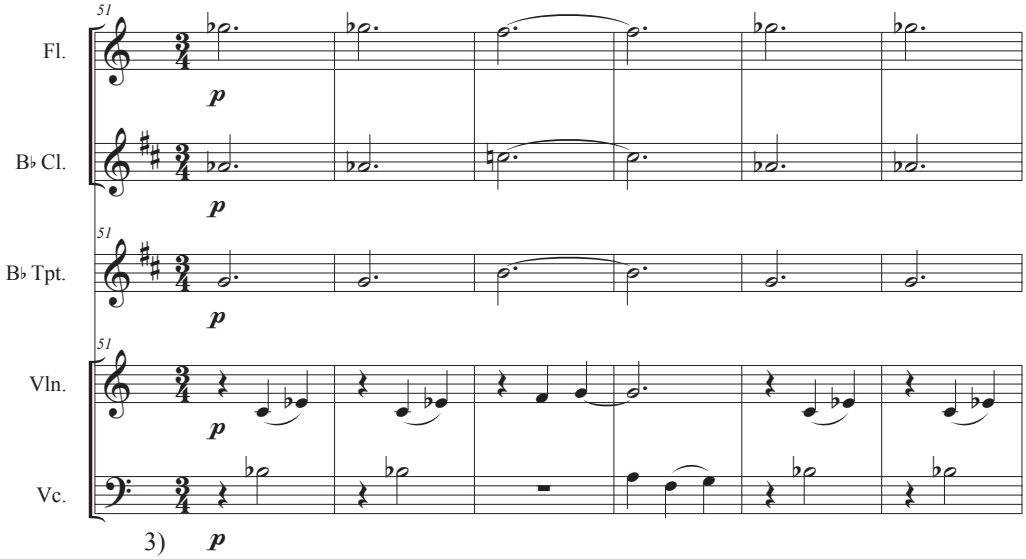
Circle 2.

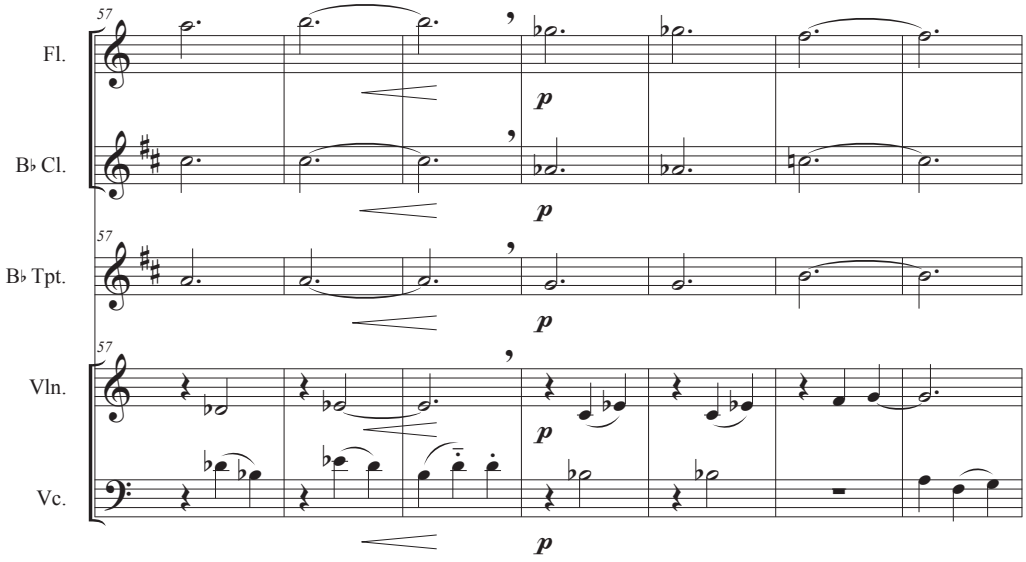


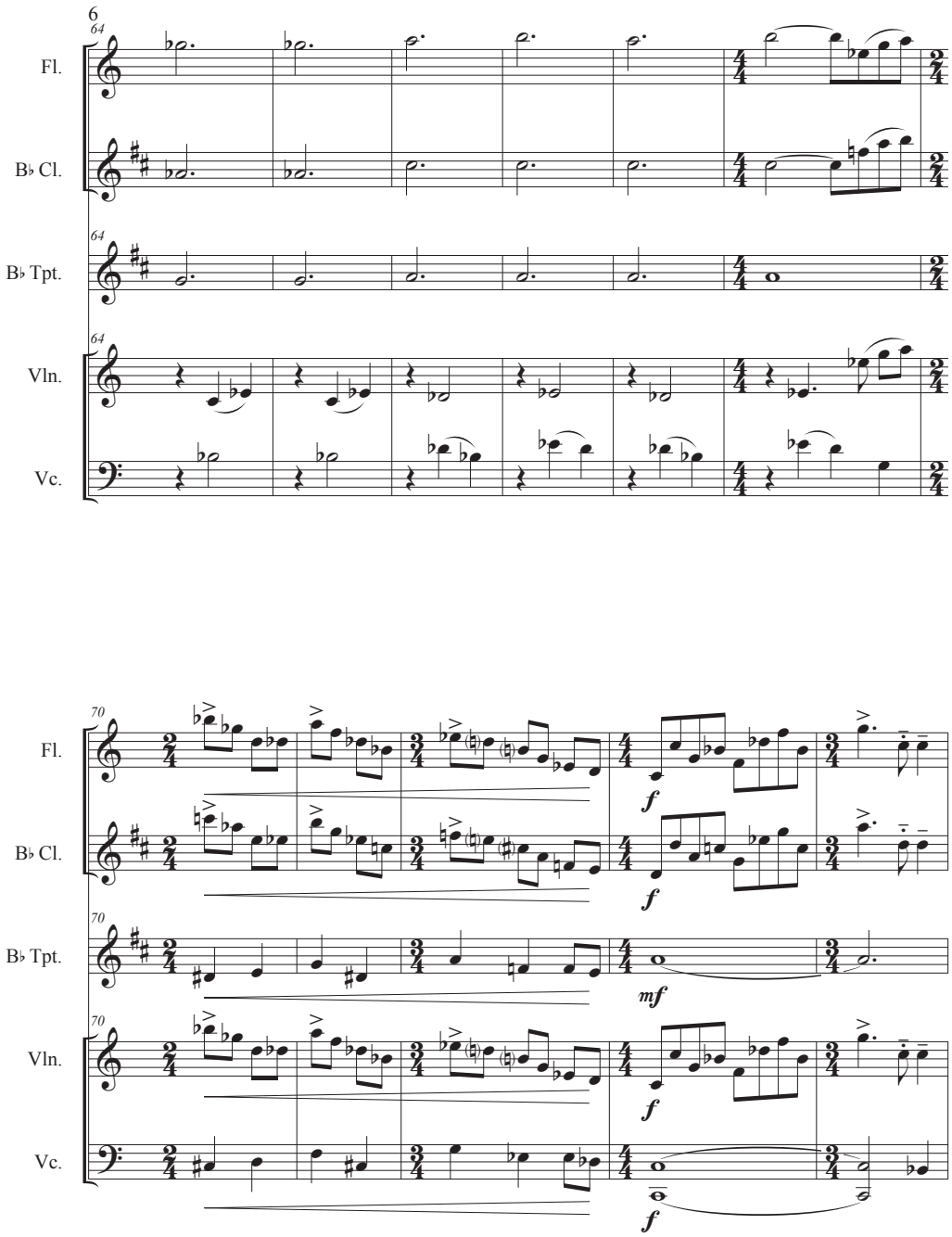



3
25
Fl.
B♭ Cl.
B♭ Tpt.
Vln.
Vc.
f
p
mf
3
mf
32
mp
mf
2)

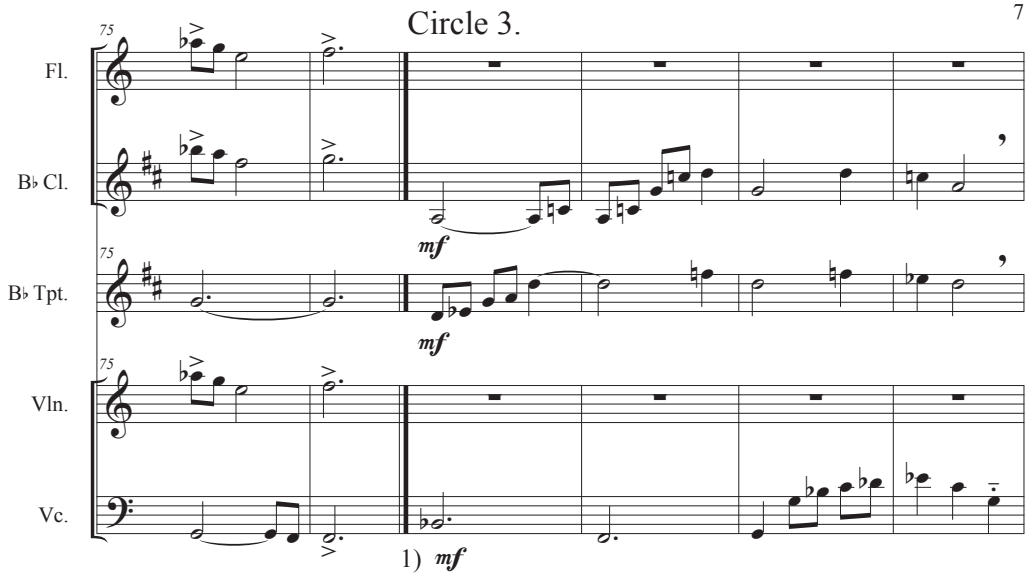

4
38
Fl.
B♭ Cl.
B♭ Tpt.
Vln.
Vc.
44
rit.
mp
p
mf
p

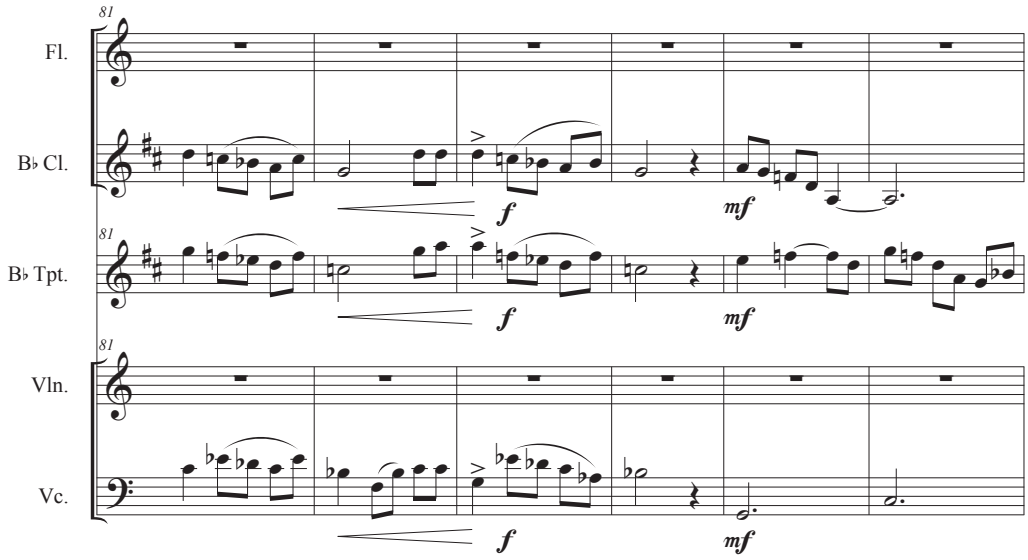

51
Fl.
B♭ Cl.
B♭ Tpt.
Vln.
Vc.
p
3)

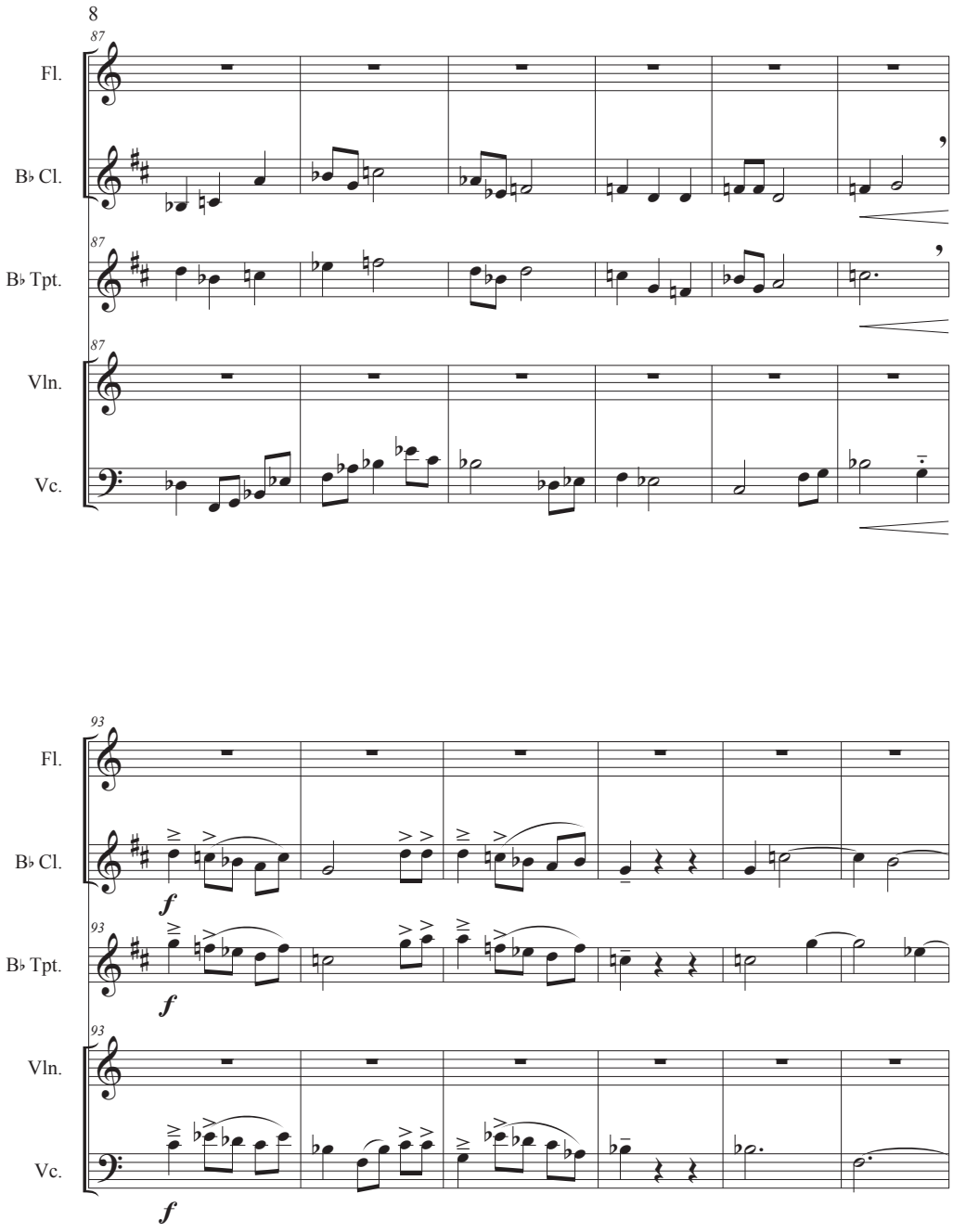

57
Fl.
B♭ Cl.
B♭ Tpt.
Vln.
Vc.
p

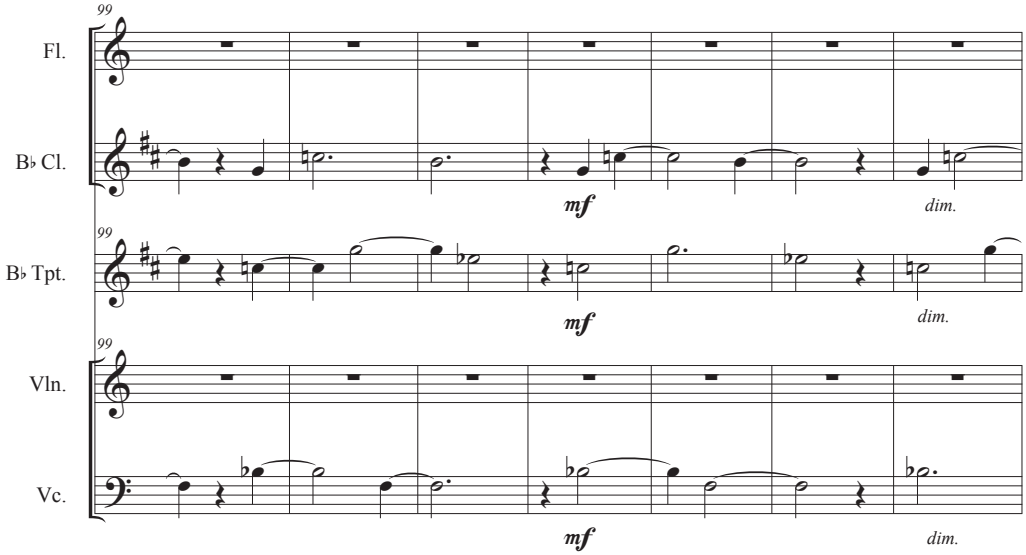

6
64
Fl.
B♭ Cl.
B♭ Tpt.
Vln.
Vc.
70
f
mf

Circle 3.

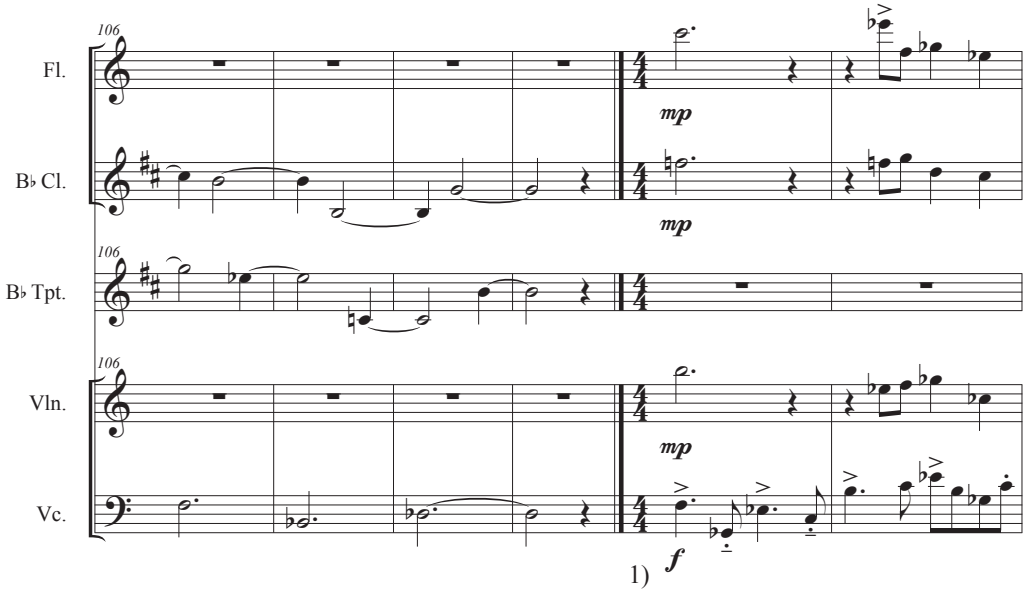


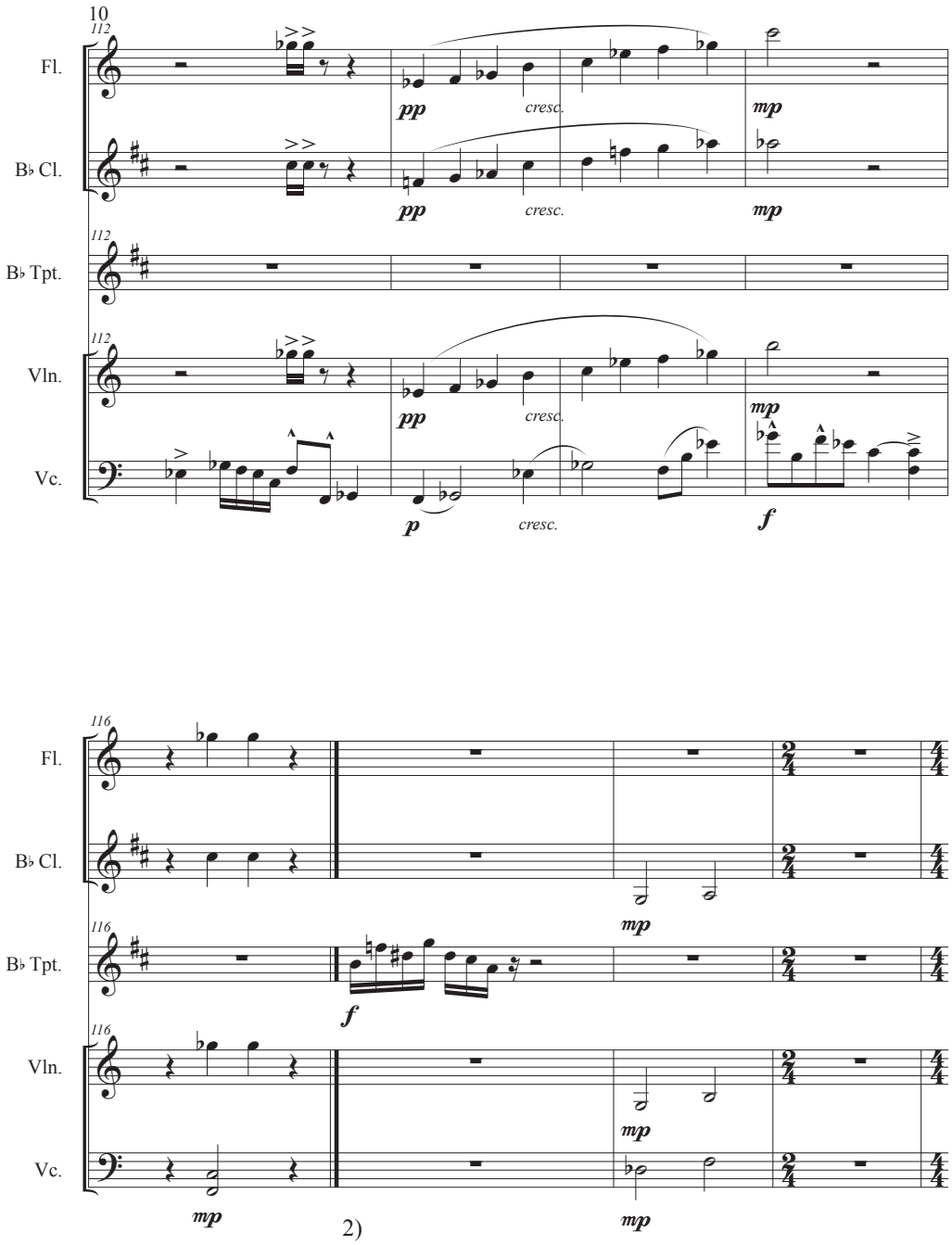



8
87
Fl.
B♭ Cl.
B♭ Tpt.
Vln.
Vc.
93
f

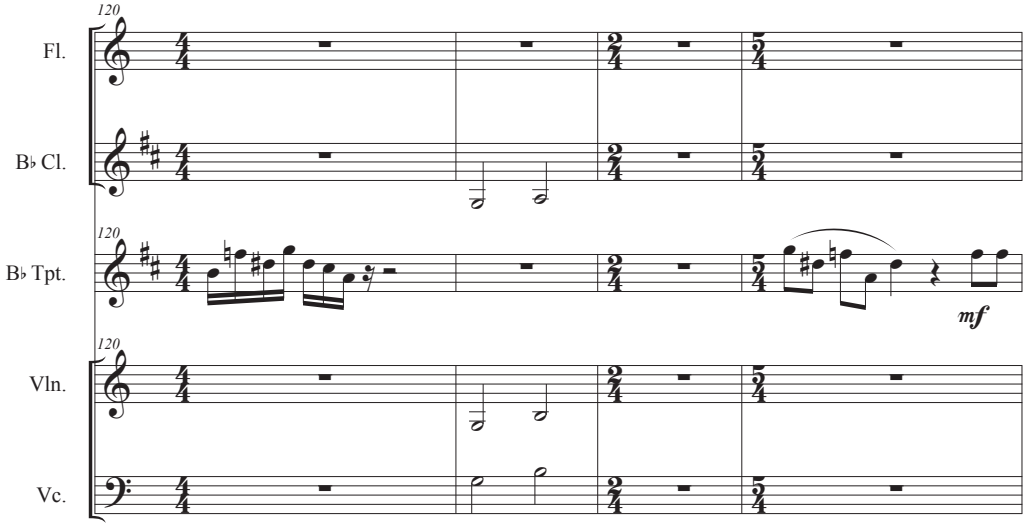

99
Fl.
B♭ Cl.
mf
dim.
99
B♭ Tpt.
mf
dim.
99
Vln.
Vc.
mf
dim.

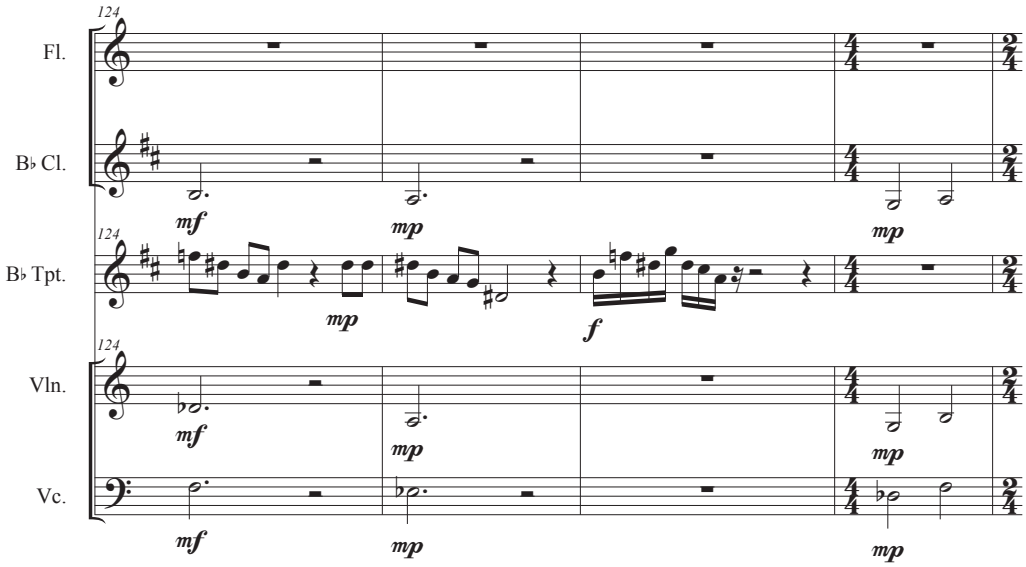
Circle 4.

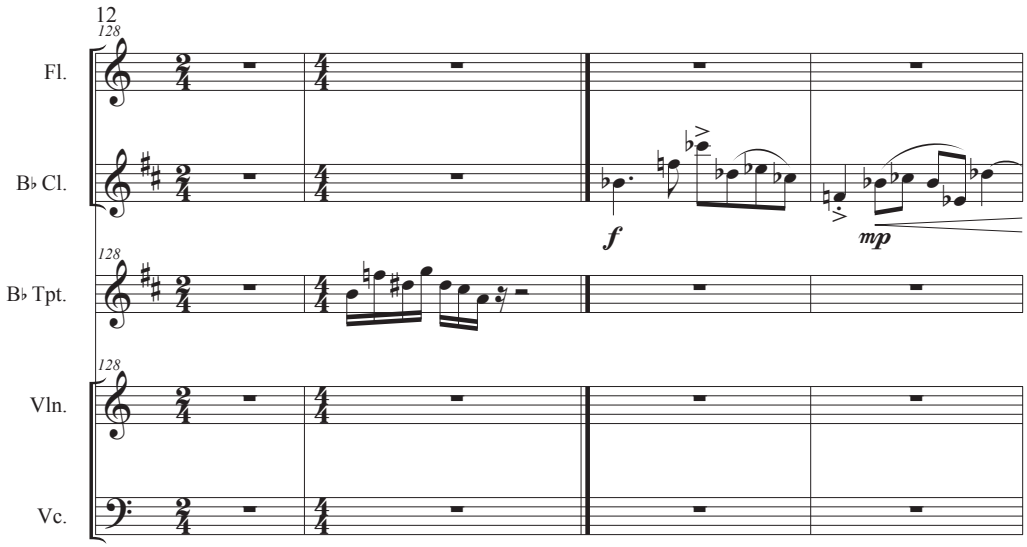

106
Fl.
B♭ Cl.
mp
mp
106
B♭ Tpt.
106
Vln.
Vc.
mp
f
1)



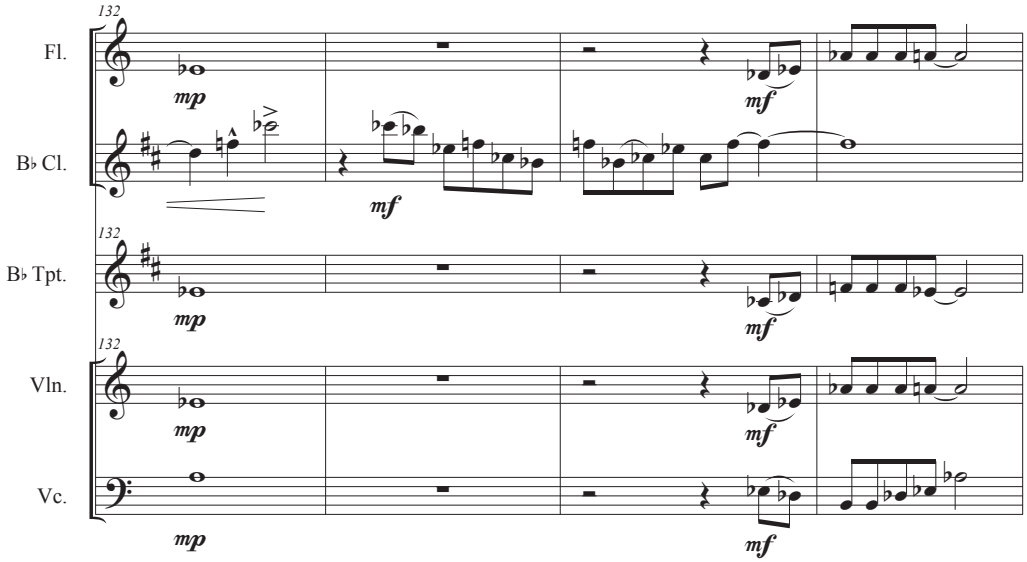
2)

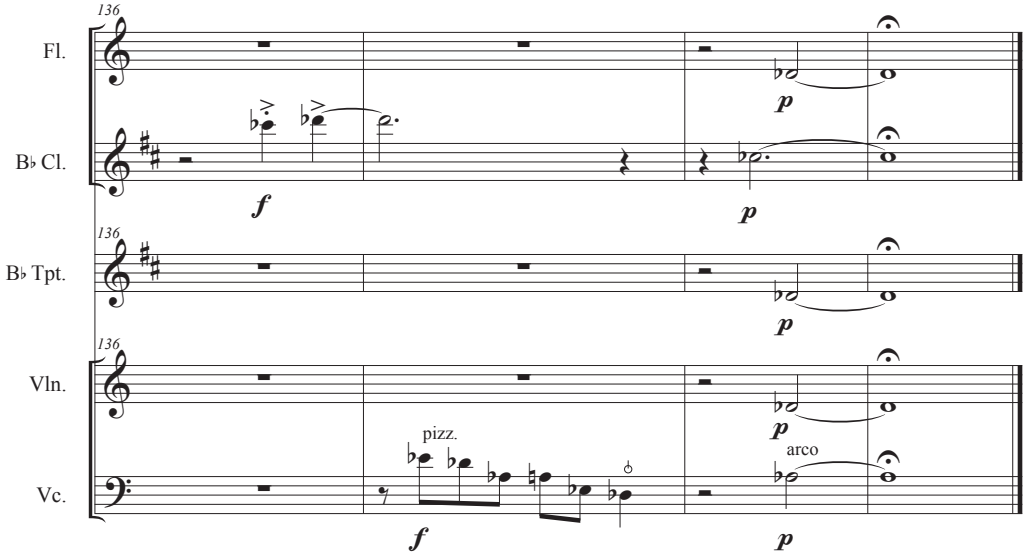

120
Fl.
B♭ Cl.
120
B♭ Tpt.
mf
120
Vln.
Vc.

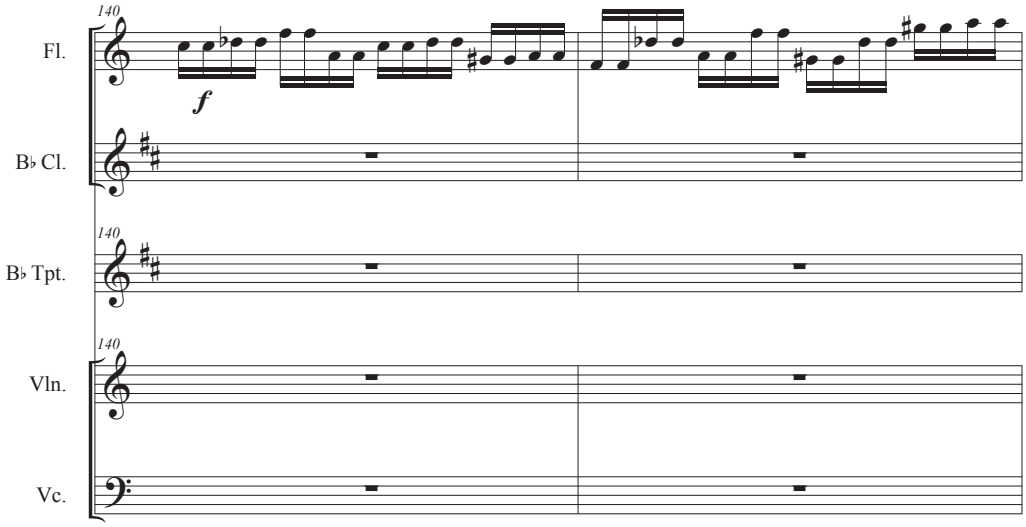

124
Fl.
B♭ Cl.
mf
mp
mp
124
B♭ Tpt.
mp
f
124
Vln.
mf
mp
mp
Vc.
mf
mp
mp



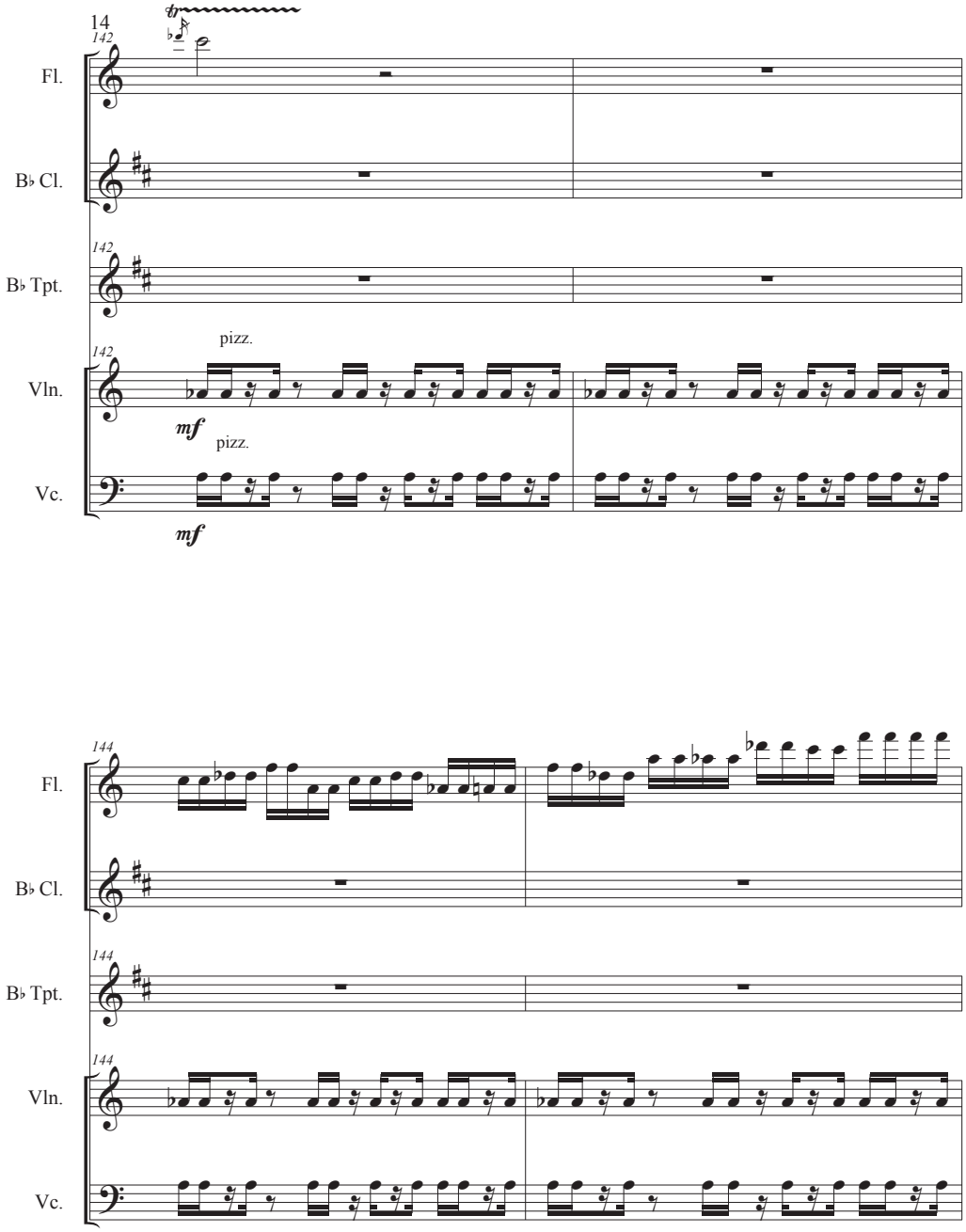
3)

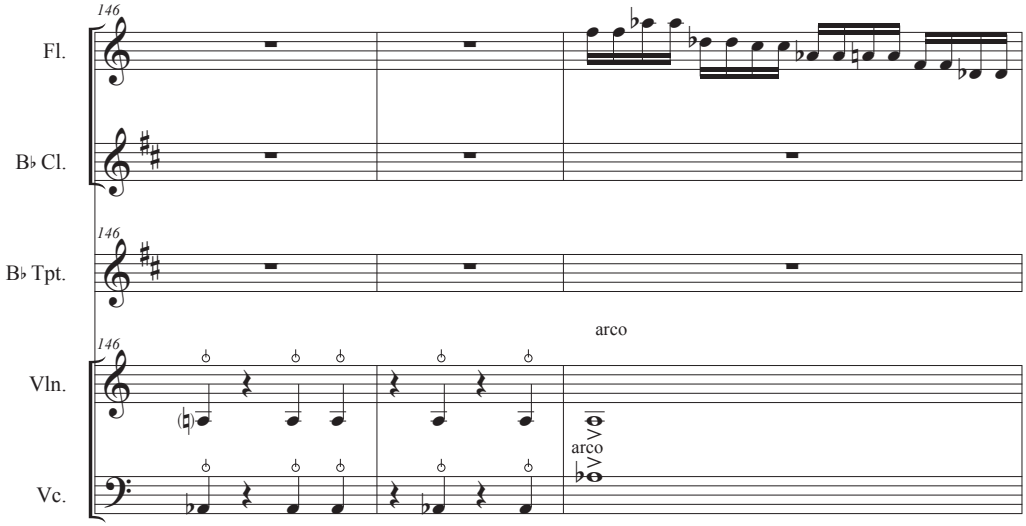




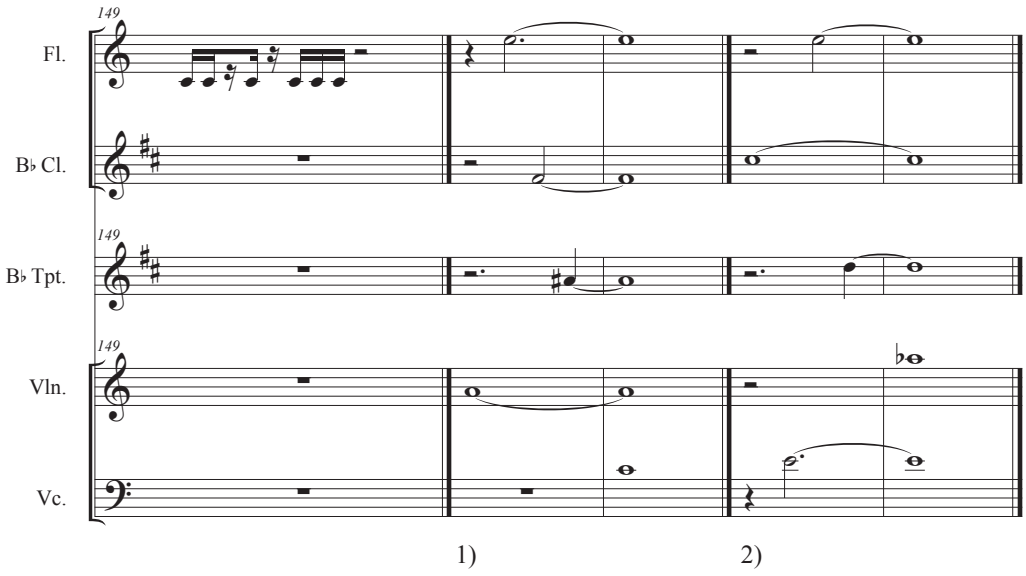


4)


14
142
Fl.
B♭ Cl.
B♭ Tpt.
Vln.
Vc.
pizz.
mf
pizz.
mf
144
Fl.
B♭ Cl.
B♭ Tpt.
Vln.
Vc.

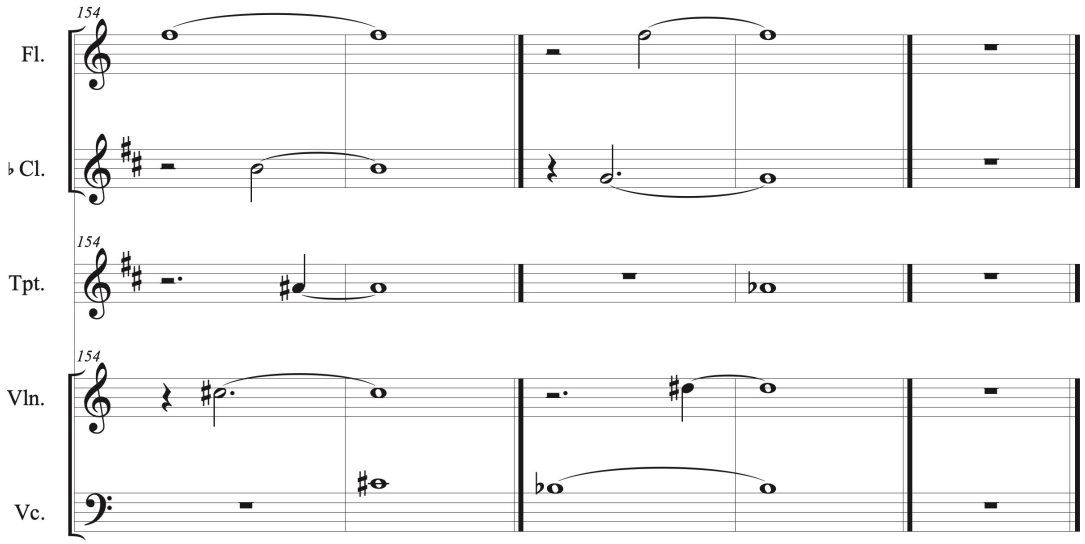


Circle 11.



1) 2)

16

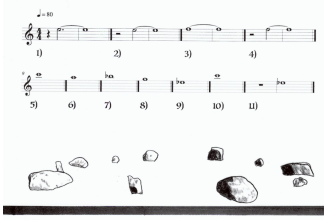


3) 4) 5)

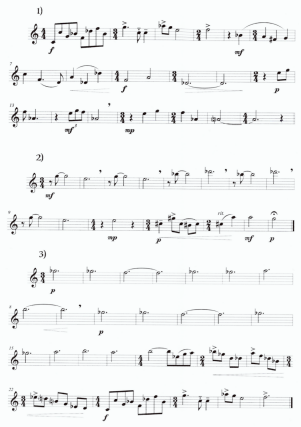
1. B C G E
2. Eb E Bb
3. Eb E B
4. Eb Ab Eb Ab

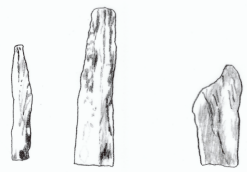
Machrie (flute)

Circle 1.

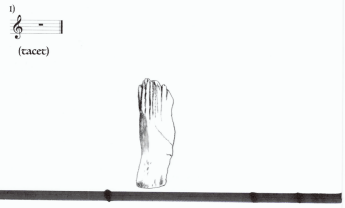


Circle 2.

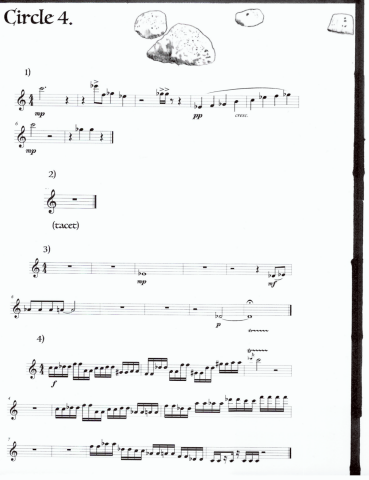




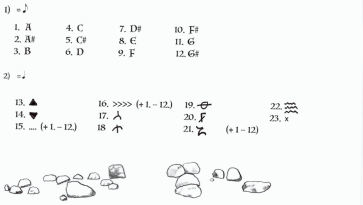
Circle 3.



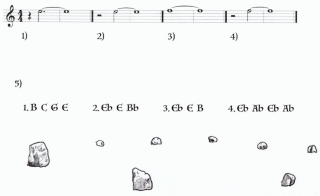
Circle 4.



Circle 5.

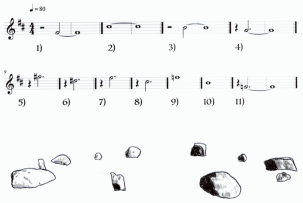


Circle 11.

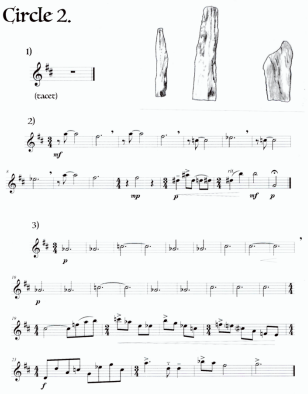


Machrie (clarinet)

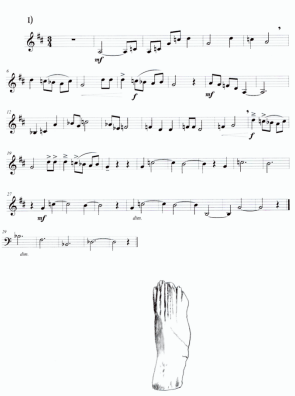
Circle 1.



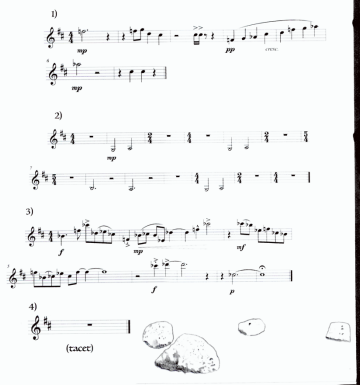
Circle 2.



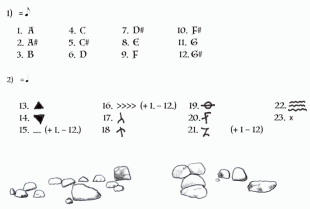
Circle 3.



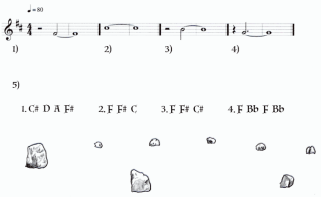
Circle 4.



Circle 5.

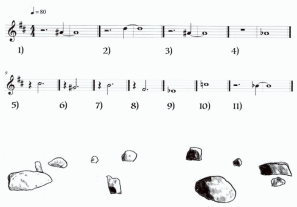


Circle 11.

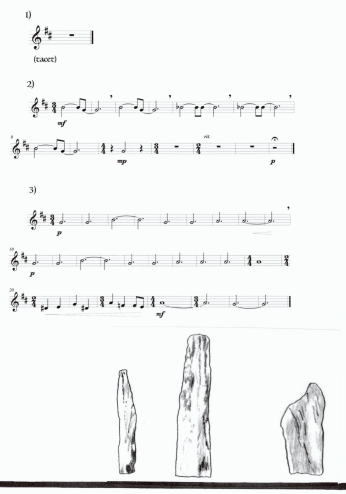


Machrie (trumpet)

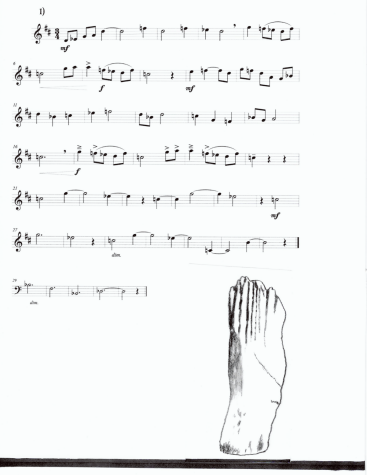
Circle 1.



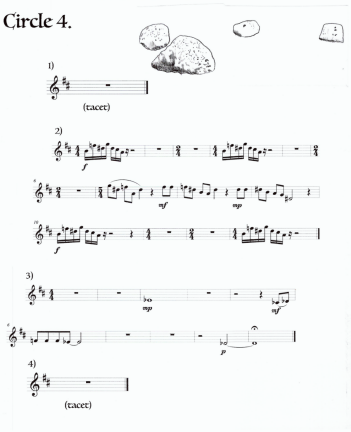
Circle 2.



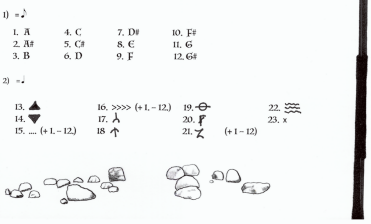
Circle 3.



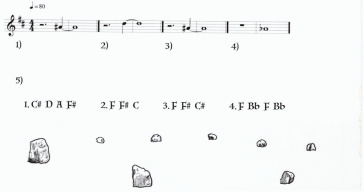
Circle 4.



Circle 5.

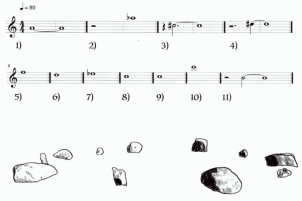


Circle 11.

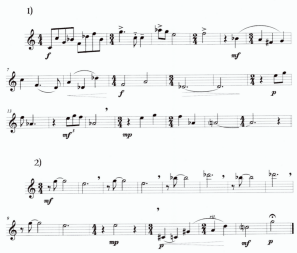


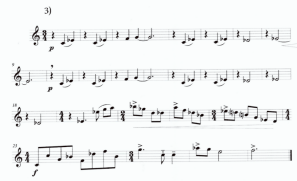
Machrie (violin)

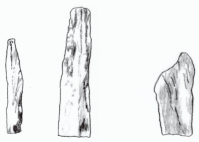
Circle 1.



Circle 2.

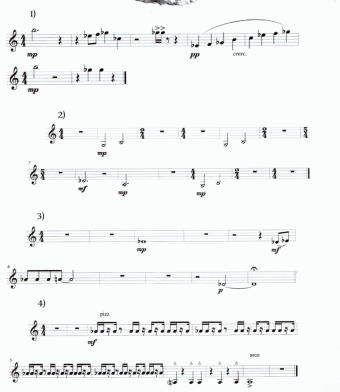




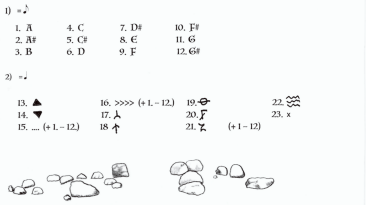


Circle 3.

Circle 4.



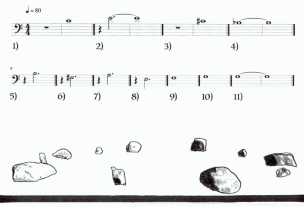
Circle 5.



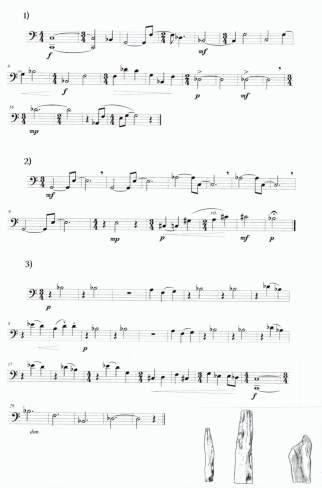
Circle 11.

Machrie (cello)

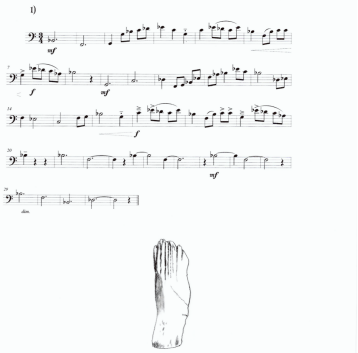
Circle 1.



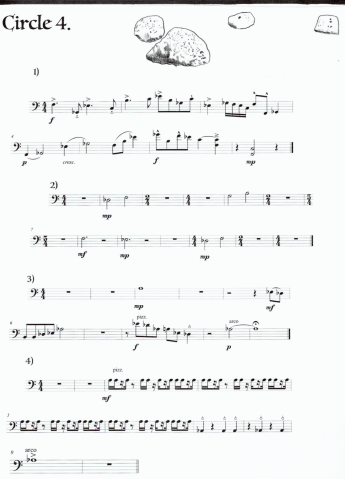
Circle 2.



Circle 3.



Circle 4.



Circle 5.

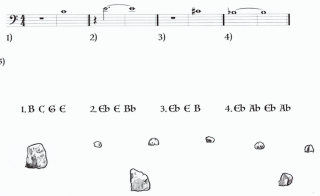
1) = ♪

1. A	4. C	7. D#	10. F#
2. A#	5. C#	8. E	11. G
3. B	6. D	9. F	12. G#

2) = ♩

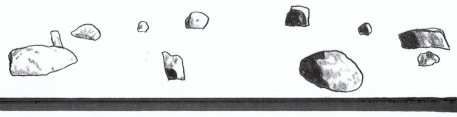
13. ▲	16. >>>> (+ 1. – 12.)	19.	22.
14. ▼	17.	20.	23. x
15. — (+ 1. – 12.)	18.	21. (+ 1 – 12)	

Circle 11.

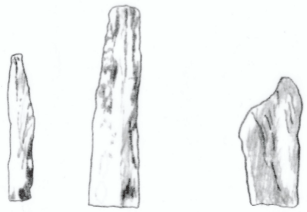


Machrie (electronics)

Circle 1.



Circle 2.



Circle 3.

Circle 4.

Circle 5.

Circle 11.

Appendix 12: *Maria Ave.* (2018)

Maria Ave. Graphic Legend (strings)

Techniques represented by the graphic symbols are performed on the string indicated in the score. The exception to this is the circle-bow technique, which may be performed on any single string or combination of strings (see below). If a graphic symbol does not have a string indicated above it, it is played on the same string as the previous graphic.

Rhythmic entrances are imprecise. However, the placement of a graphic indicates the temporal process within that measure. The closer the graphic is to the left side of a measure, the closer it should be played to beat one. Likewise, the closer a graphic is located to the right side of a measure, the closer it will be played to the measure's final beat. It is not necessary for players with similar graphic placements to coordinate entrances.

- **Flutter:** On the string indicated, place the left hand on the end of the fingerboard closest to the bridge. Rapidly tap one finger against the string, taking care to not fully depress the string (use the pressure one would normally use to play a harmonic). While tapping your finger against the string, perform a continuous *glissando*, shifting down to the nut and then back up to the end of the fingerboard. While performing the *glissando*, bow *sul ponticello*. Bow changes do not need to align

with the up or down movement of the left hand. Repeat these motions until the next graphic or traditional notation.

 - **Seagull:** On the string indicated, place two left-hand fingers on the end of the fingerboard closest to the bridge (for violin and viola, use the first and second (or third) finger; for cello and double bass, use thumb and second finger). Place the two fingers on the string as if performing a harmonic, that is, not fully depressing the string. The fingers do not need to be placed over actual harmonics on the string, nor does the amount of spacing between the two fingers need to correlate with any intervallic spacing on the instrument. In other words, arbitrarily choose an amount of space between fingers. Once the performer has chosen a spacing, maintain this spacing and slide down to or close to the nut, taking care to not fully depress the string. While performing this left-hand action, bow *sul ponticello* from the frog to the tip, timing the bowing so that the bow reaches the tip at the same time the left hand reaches the nut. Repeat this action (retaking the bow and starting at the edge of the fingerboard nearest the bridge) until the next graphic or traditional notation.

 - **Seagull + flutter:** On the string indicated, place two left-hand fingers on the edge of the fingerboard closest to the bridge (for violin and viola,

use the first and second (or third) finger; for cello and double bass, use thumb and second finger). Fully depress either the first finger (violin and viola) or the thumb (cello and double bass). *Glissando* up and down the fingerboard, eventually reaching the nut. While performing the *glissando*, lightly tap the string with the other left hand finger (violin and viola – second or third finger; cello and double bass – second finger). While performing the left-hand actions, bow *sul ponticello*. Bow changes do not need to align with the up or down movement of the left hand. Repeat this action (retaking the bow and starting at the edge of the fingerboard nearest the bridge) until the next graphic or traditional notation.

- **Circle-bow:** Rather than moving the bow perpendicular to the string, bow in a continuous circular motion. This may be done on any one string or any combination of strings. The left hand may play any single note, chord or may alternate between single notes or chords. The left hand should not change notes rapidly. Repeat this action until the next graphic or traditional notation.

Notes for the conductor

This is a piece that, while appropriate for any ensemble, may be best suited for amateur and student groups wishing to explore contemporary performance practices. Much of the piece is quite simple. The written figures are well within the normal playing ranges of each instrument; it is primarily tonal; and it has a low level of rhythmic complexity. However, the string parts contain techniques that, though relatively common and simple to execute, may be challenging for some performers. Drawing from my own experiences conducting this work, I offer the following suggestions.

The use of harmonics may prove difficult for less experienced players. Thus, the conductor should familiarise themselves with the fingerboard location of all harmonics used in this piece. (This information is widely available in pedagogical methods, scholarly literature, and web resources). In instances where a harmonic may exist along more than one node, the performer should play the harmonic located within the first octave of each string. It may be necessary to remind the strings that these harmonics will project clearly if the players use a full bow and play close to the bridge.

To execute the left-hand *pizzicato* technique, the performer will need to play the harmonic with their first finger whilst plucking the adjacent string with their third or fourth finger. Though this may at first be difficult to execute, in my

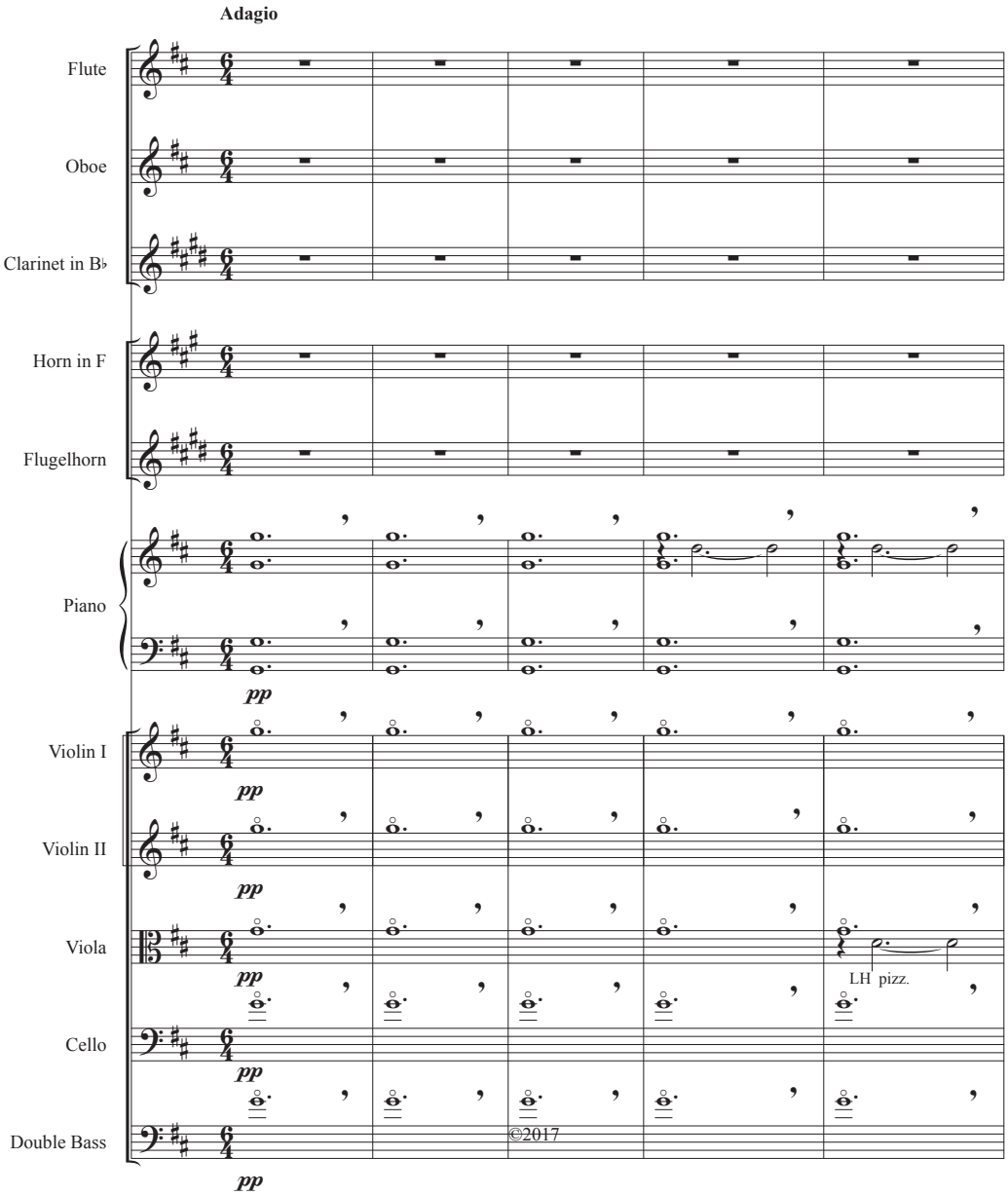
experience, most performers unaccustomed to this technique can grasp it by the end of a rehearsal. Encourage the performers who are having difficulties, and don't spend undue rehearsal time perfecting a technique that will improve over time.

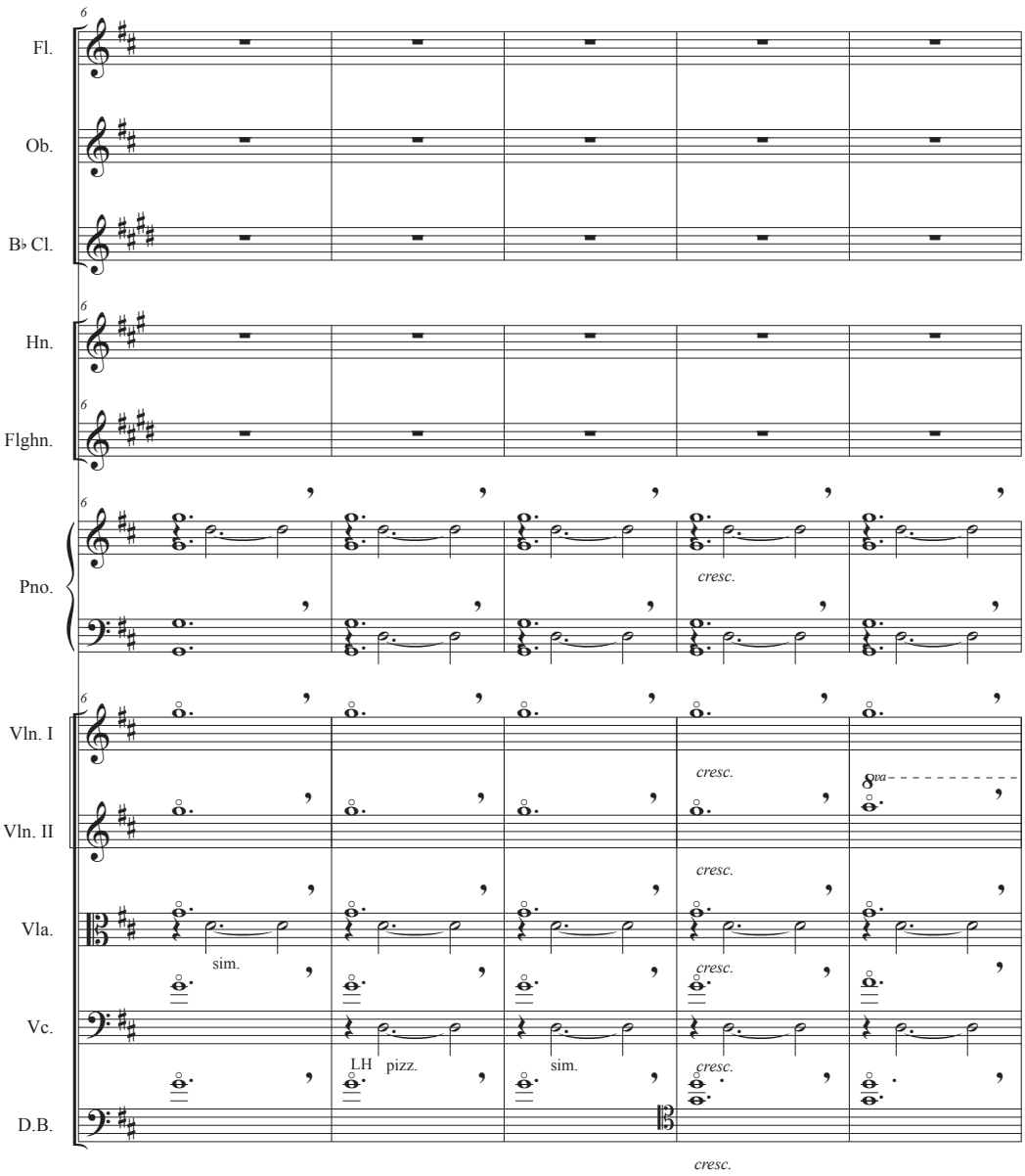
If the performers are unable to perform the graphics after studying the graphic legend, demonstrations may be necessary. Should the conductor be unable to offer a demonstration themself, they may consult the growing body of scholarly and popular literature (including blogs and streaming sites) that explain and demonstrate common extended techniques for strings.

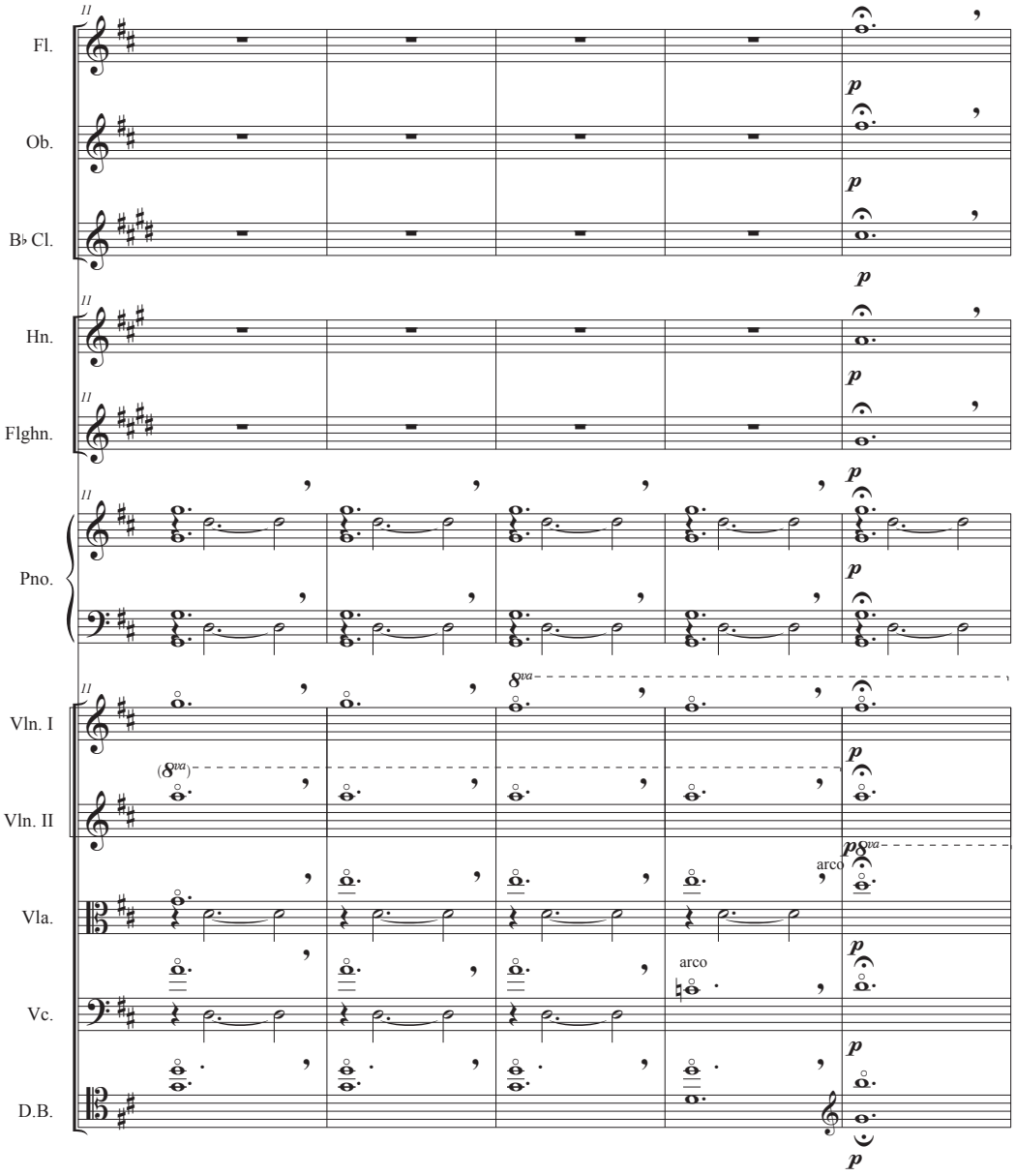
Score

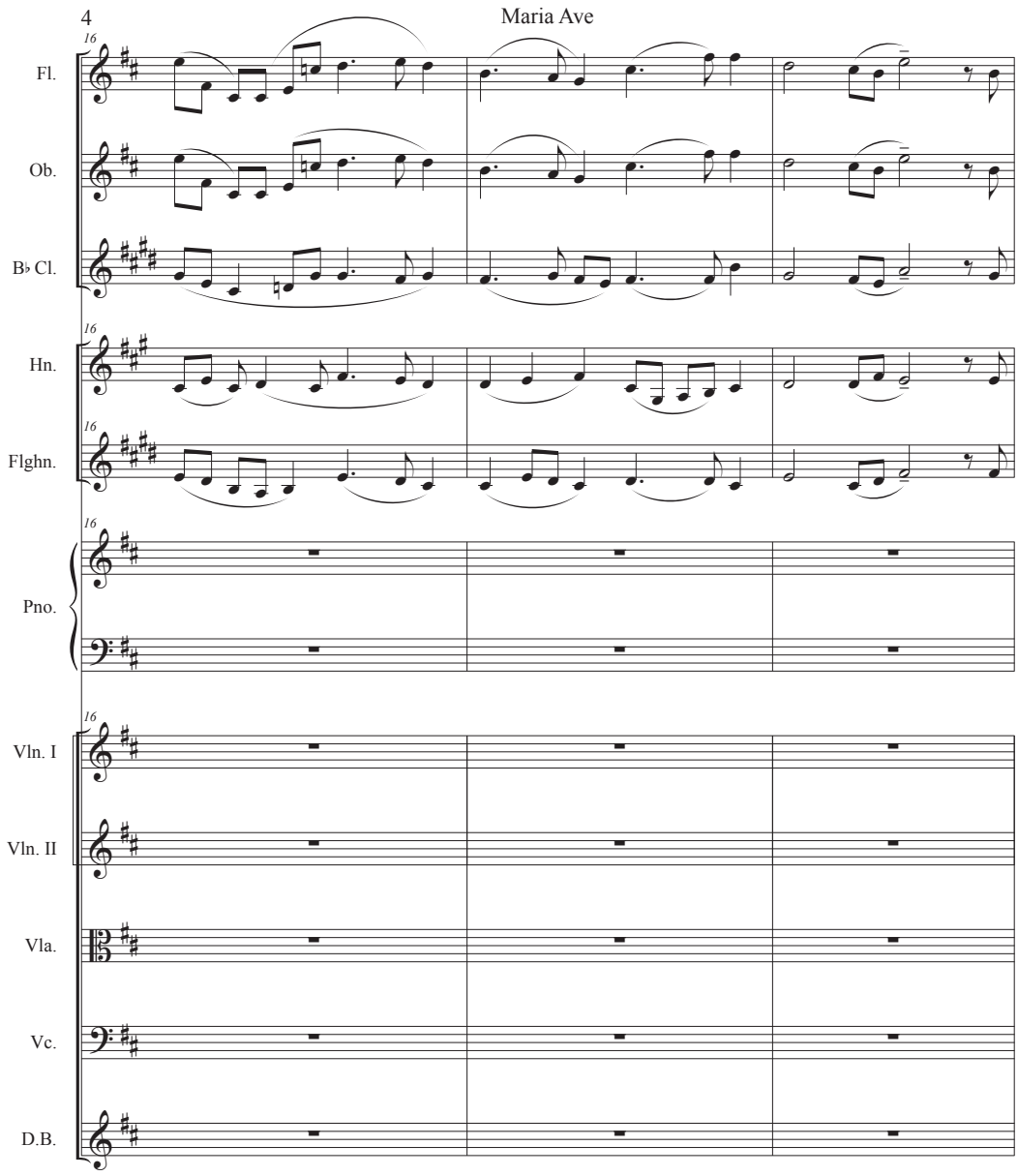
Maria Ave.

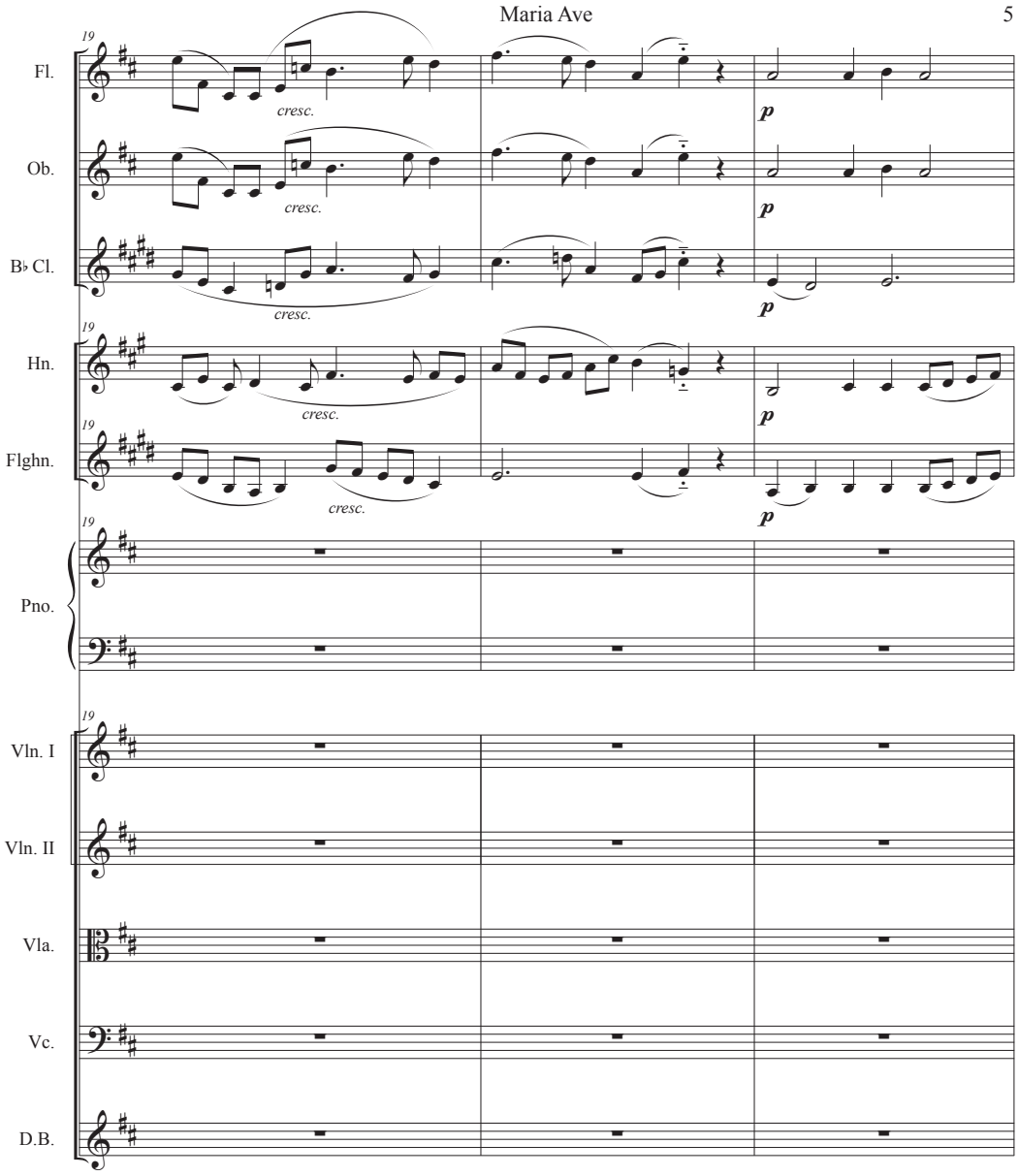
Russell Wimbish

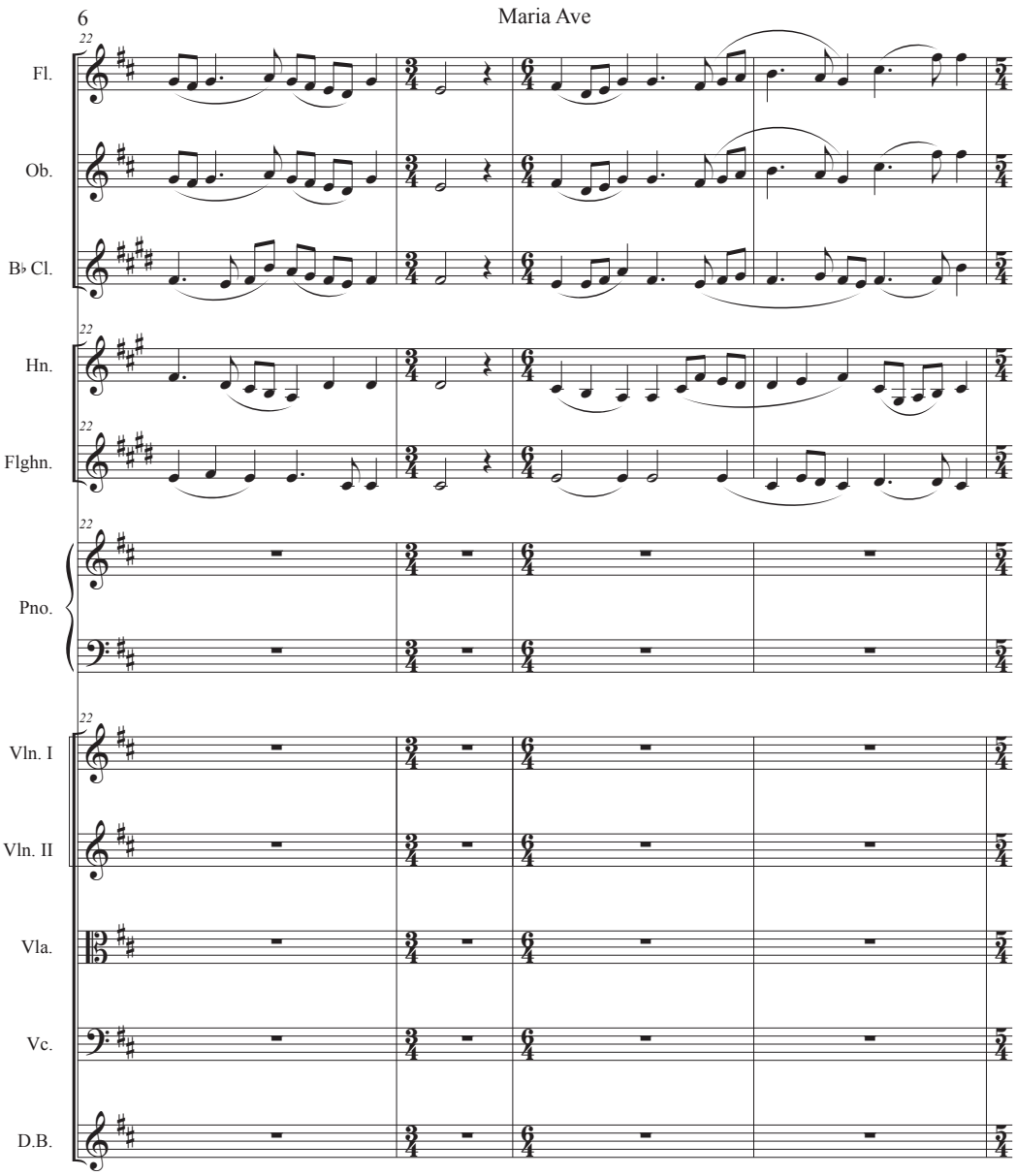


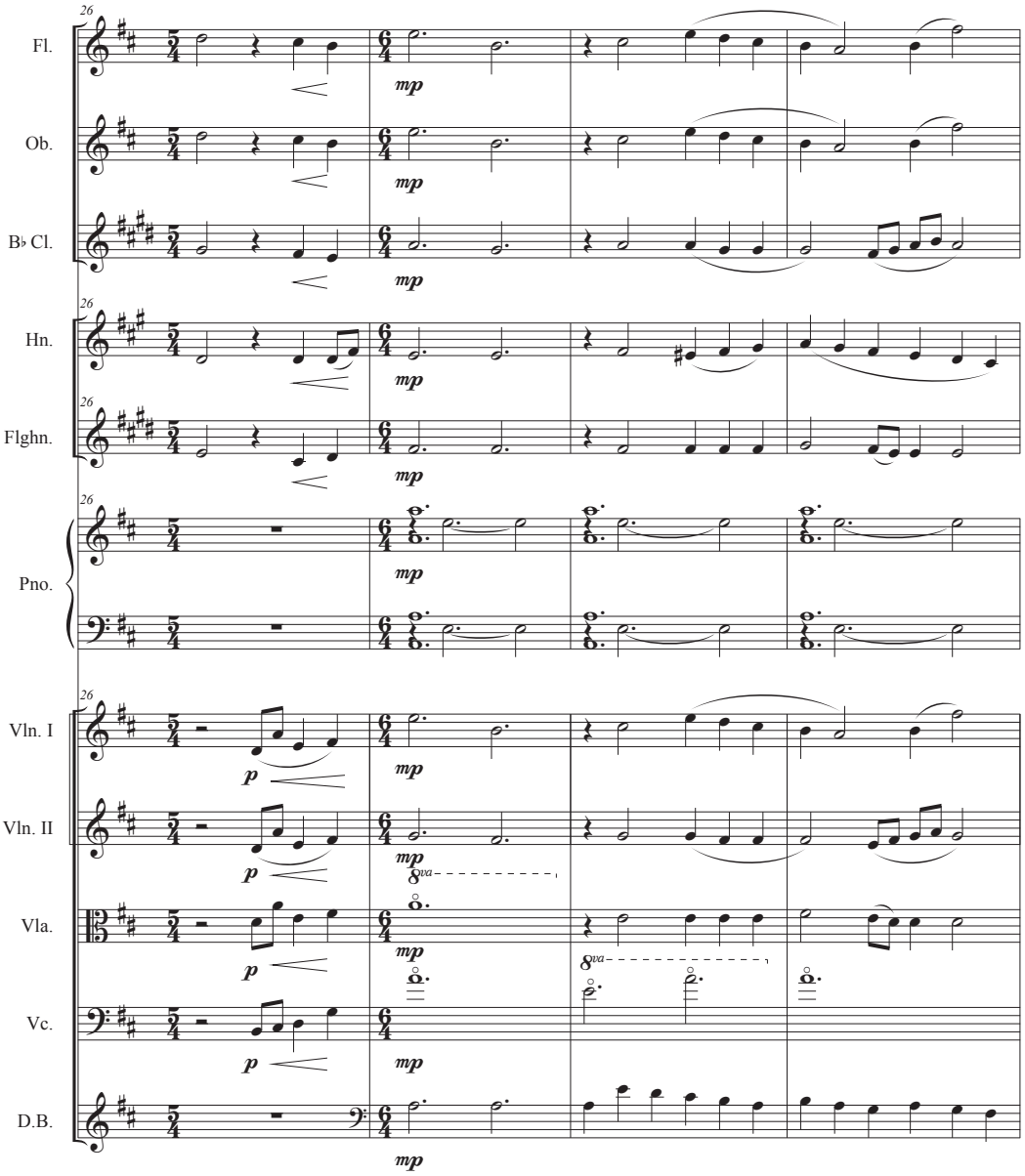

Fl.
Ob.
B♭ Cl.
Hn.
Flghn.
Pno.
Vln. I
Vln. II
Vla.
Vc.
D.B.
cresc.
8va
sim.
LH pizz.

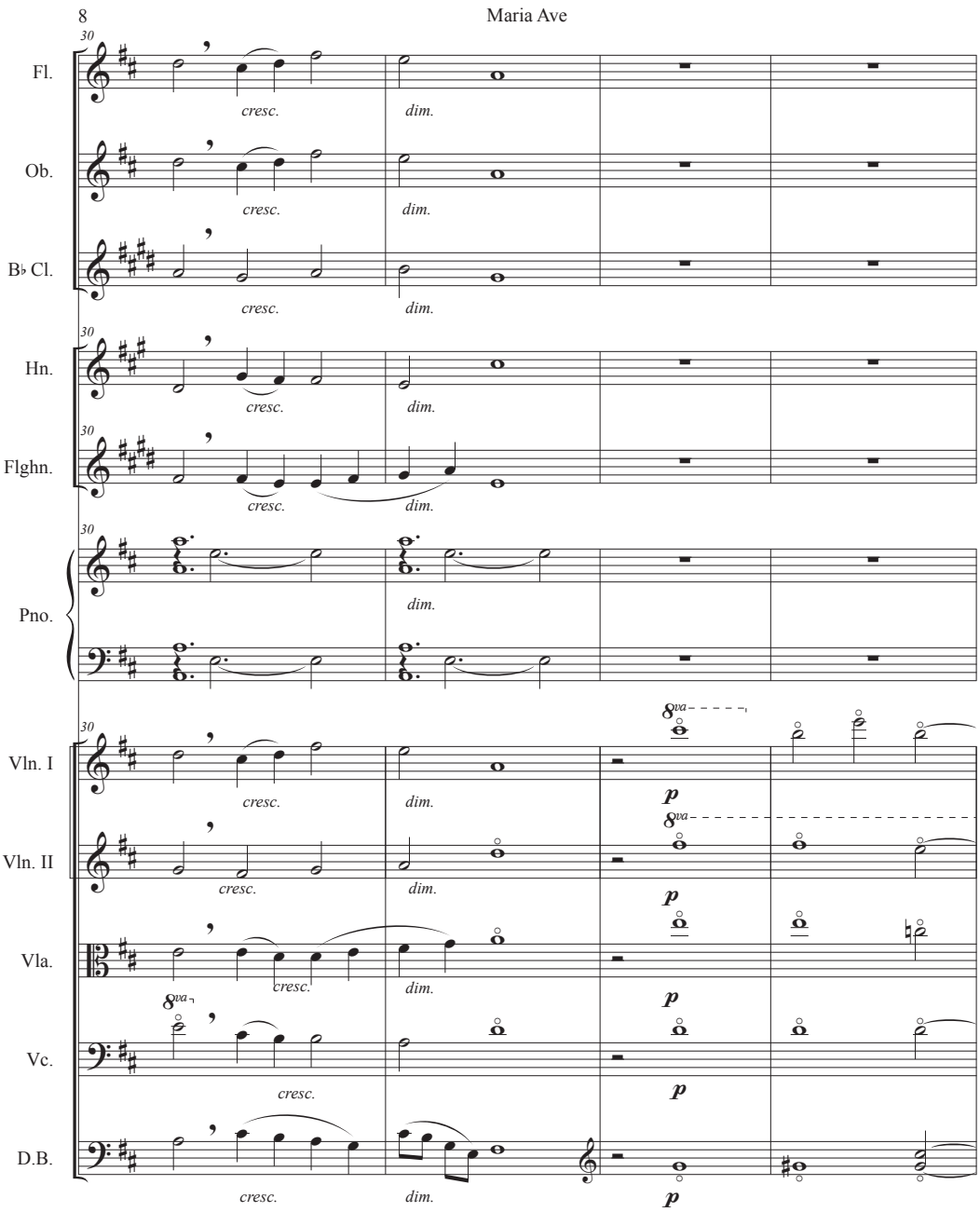

Fl.
Ob.
B♭ Cl.
Hn.
Flghn.
Pno.
Vln. I
Vln. II
Vla.
Vc.
D.B.
arco
arco

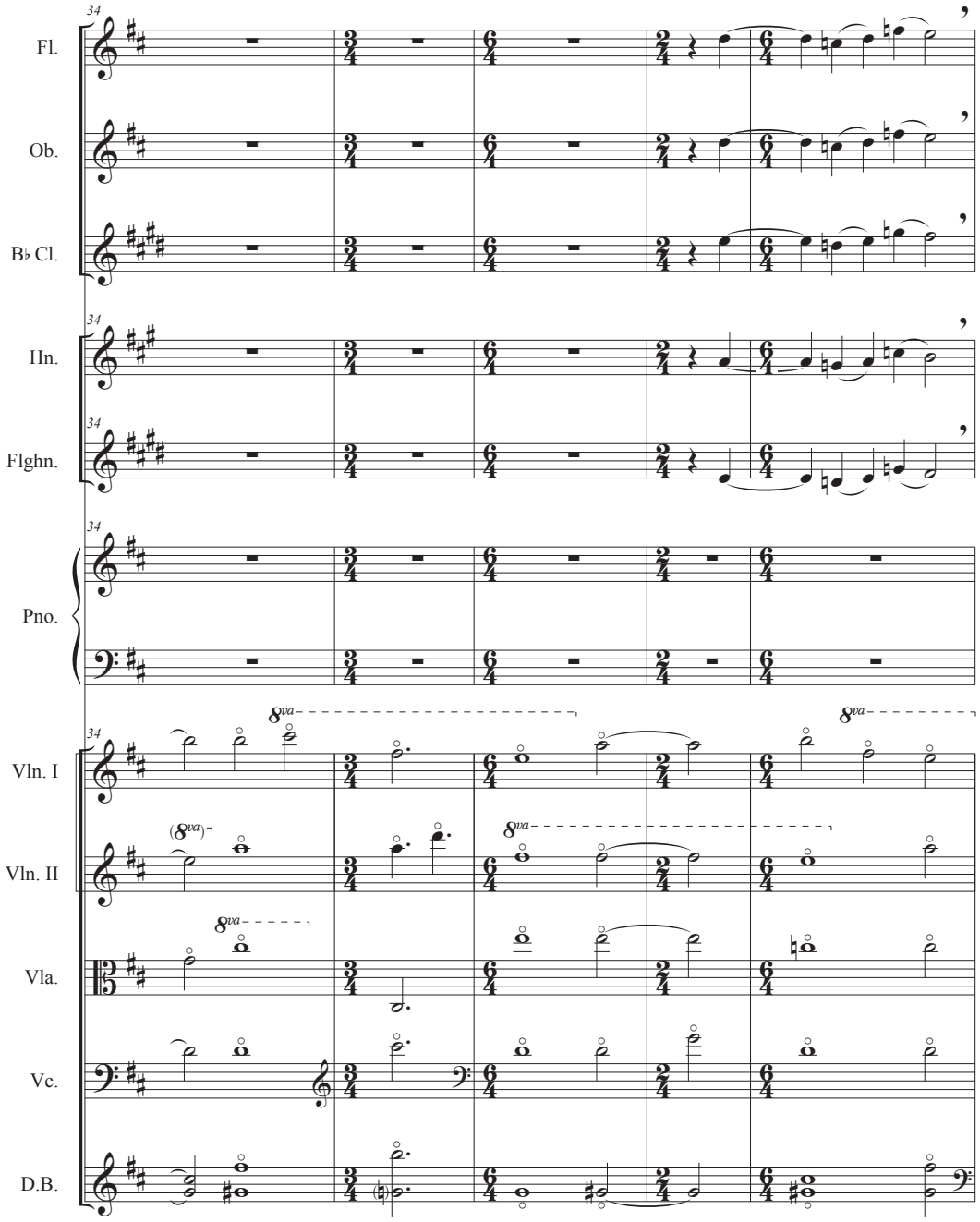

4
Maria Ave
Fl.
Ob.
B♭ Cl.
Hn.
Flghn.
Pno.
Vln. I
Vln. II
Vla.
Vc.
D.B.

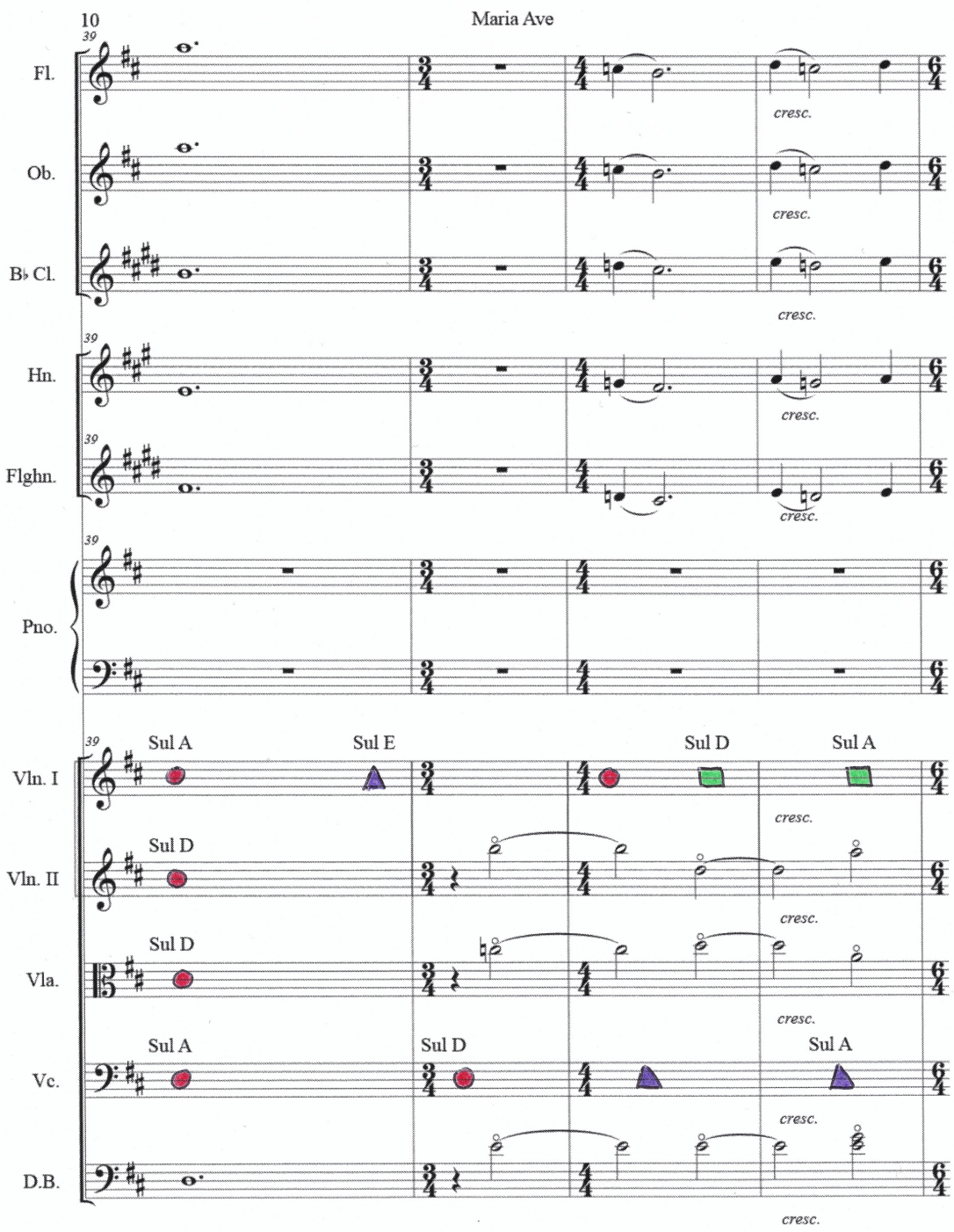

19
Fl.
cresc.
p
Ob.
cresc.
p
B♭ Cl.
cresc.
p
19
Hn.
cresc.
p
19
Flghn.
cresc.
p
19
Pno.
19
Vln. I
Vln. II
Vla.
Vc.
D.B.

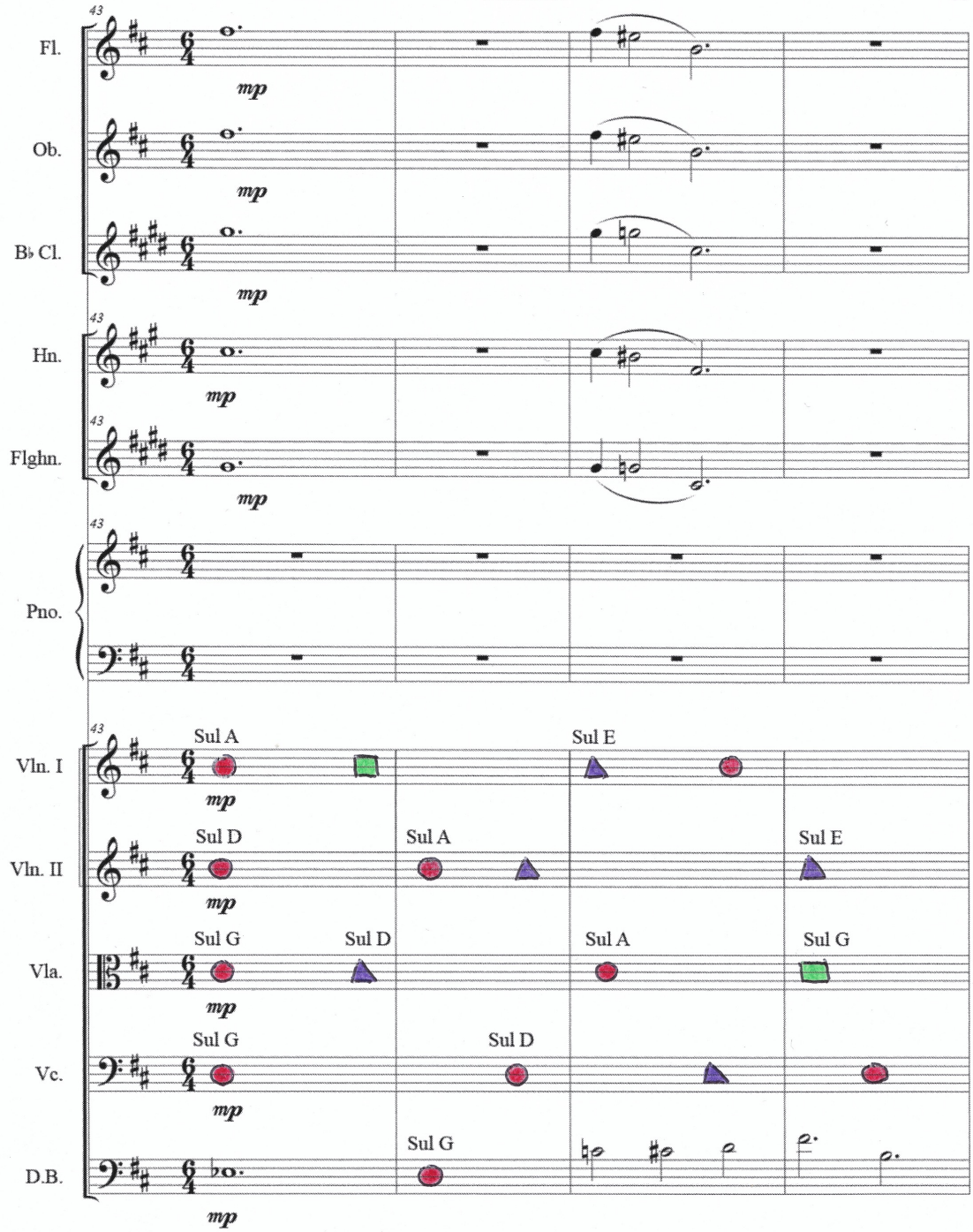

6
Maria Ave
Fl.
Ob.
B♭ Cl.
Hn.
Flghn.
Pno.
Vln. I
Vln. II
Vla.
Vc.
D.B.

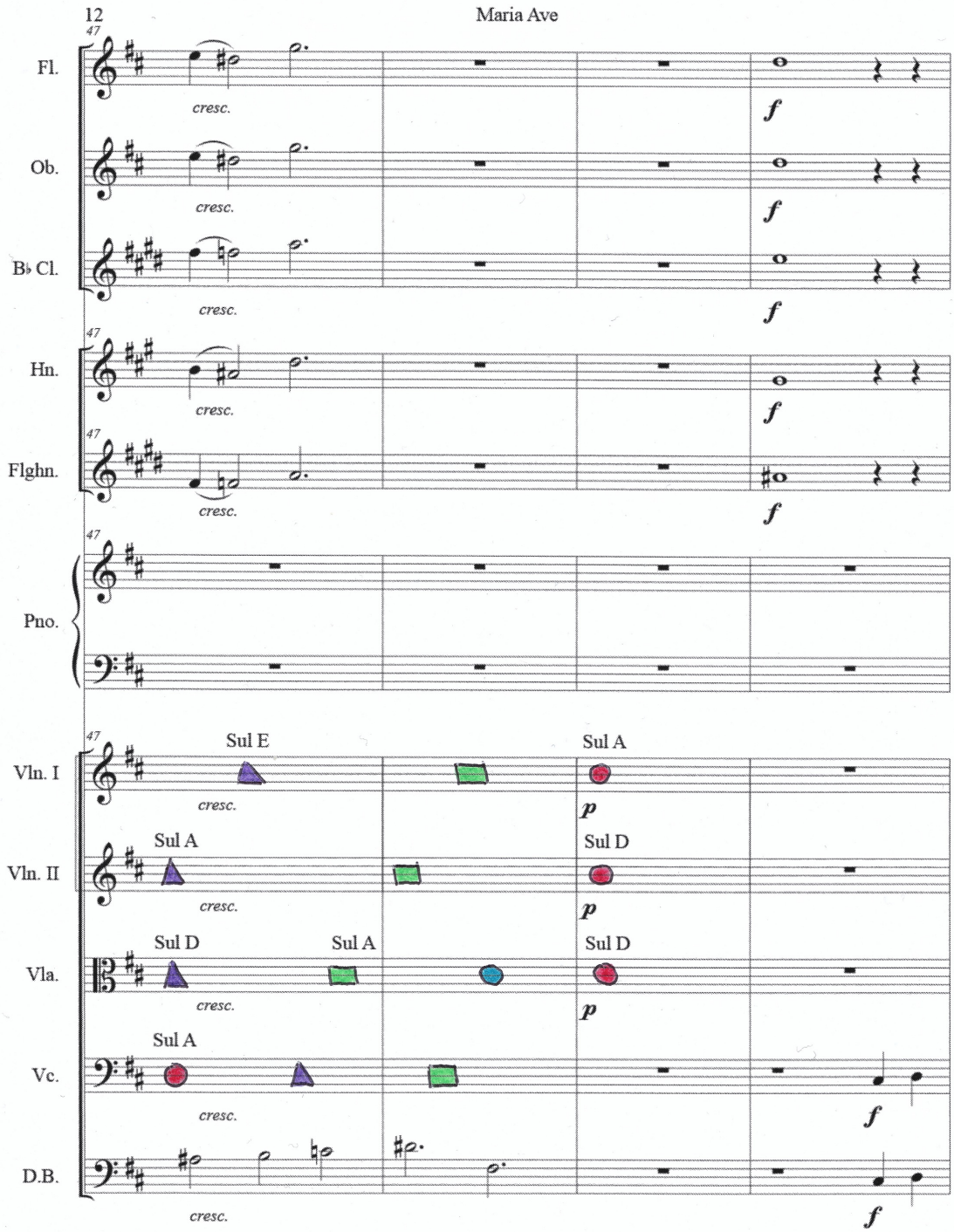

26
Fl.
Ob.
B♭ Cl.
Hn.
Flghn.
Pno.
Vln. I
Vln. II
Vla.
Vc.
D.B.
mp
p
8va

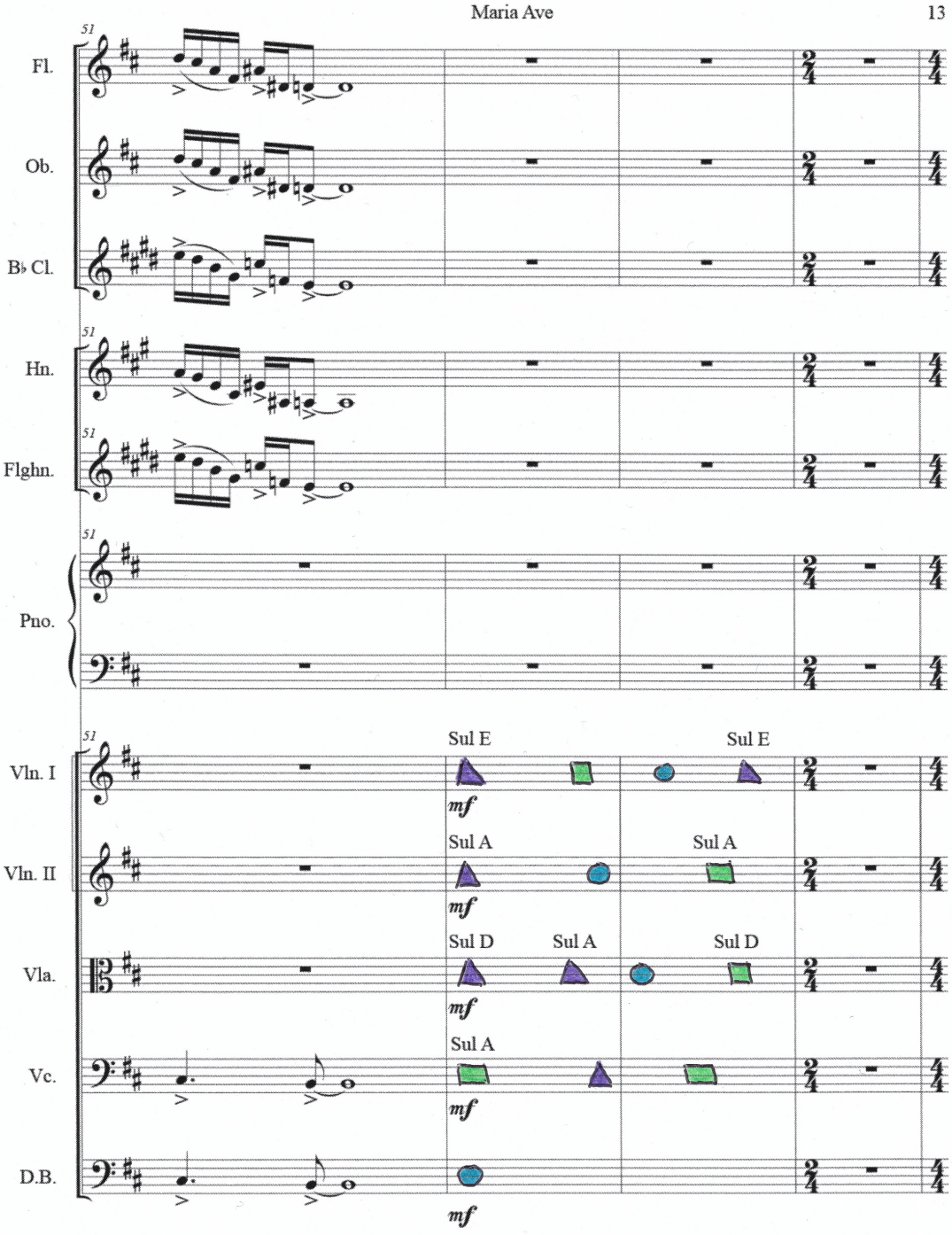

30
Fl.
Ob.
B♭ Cl.
Hn.
Flghn.
Pno.
Vln. I
Vln. II
Vla.
Vc.
D.B.
cresc.
dim.
8va
p

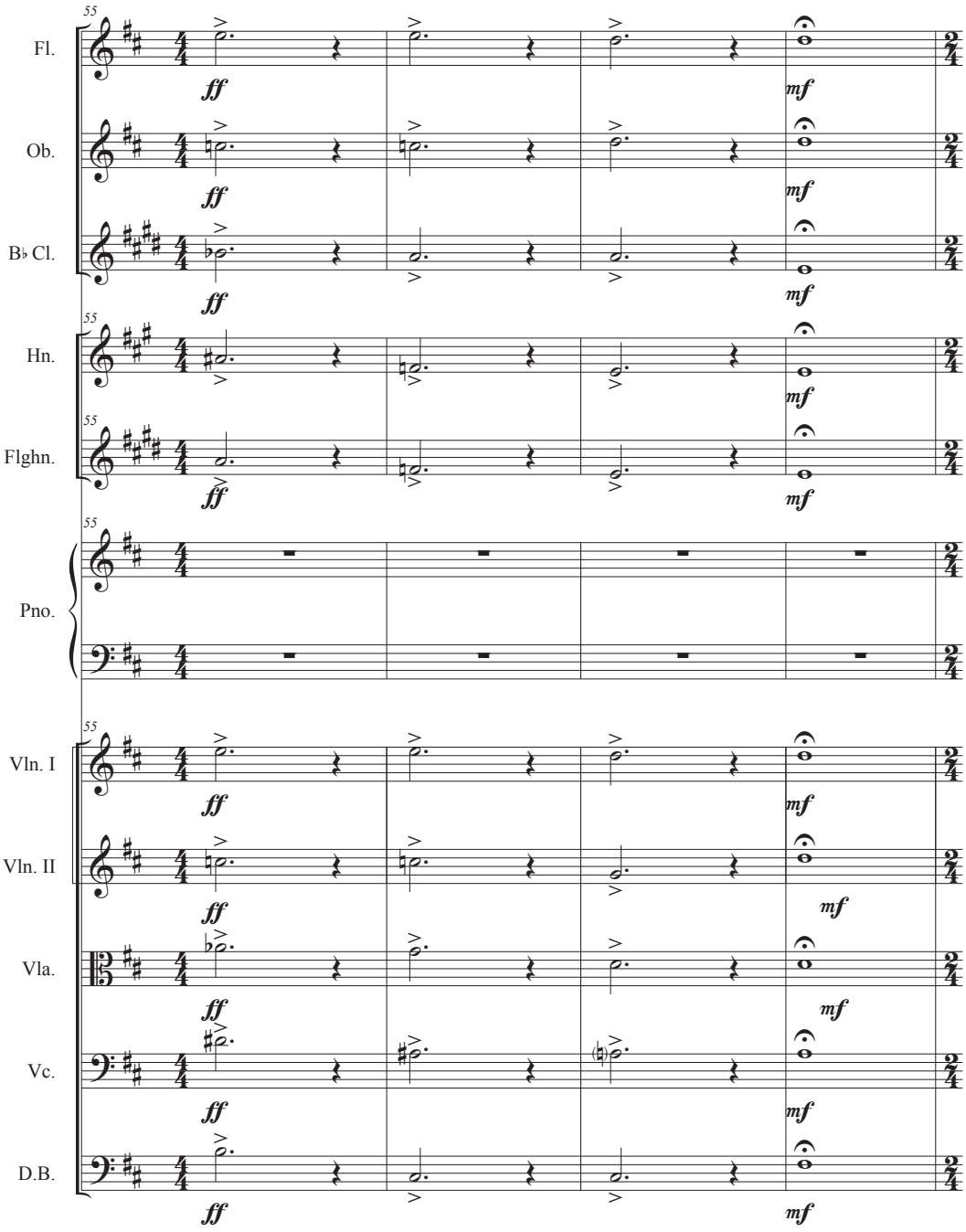

Fl.
Ob.
B♭ Cl.
Hn.
Flghn.
Pno.
Vln. I
Vln. II
Vla.
Vc.
D.B.
34
8va
(8va)

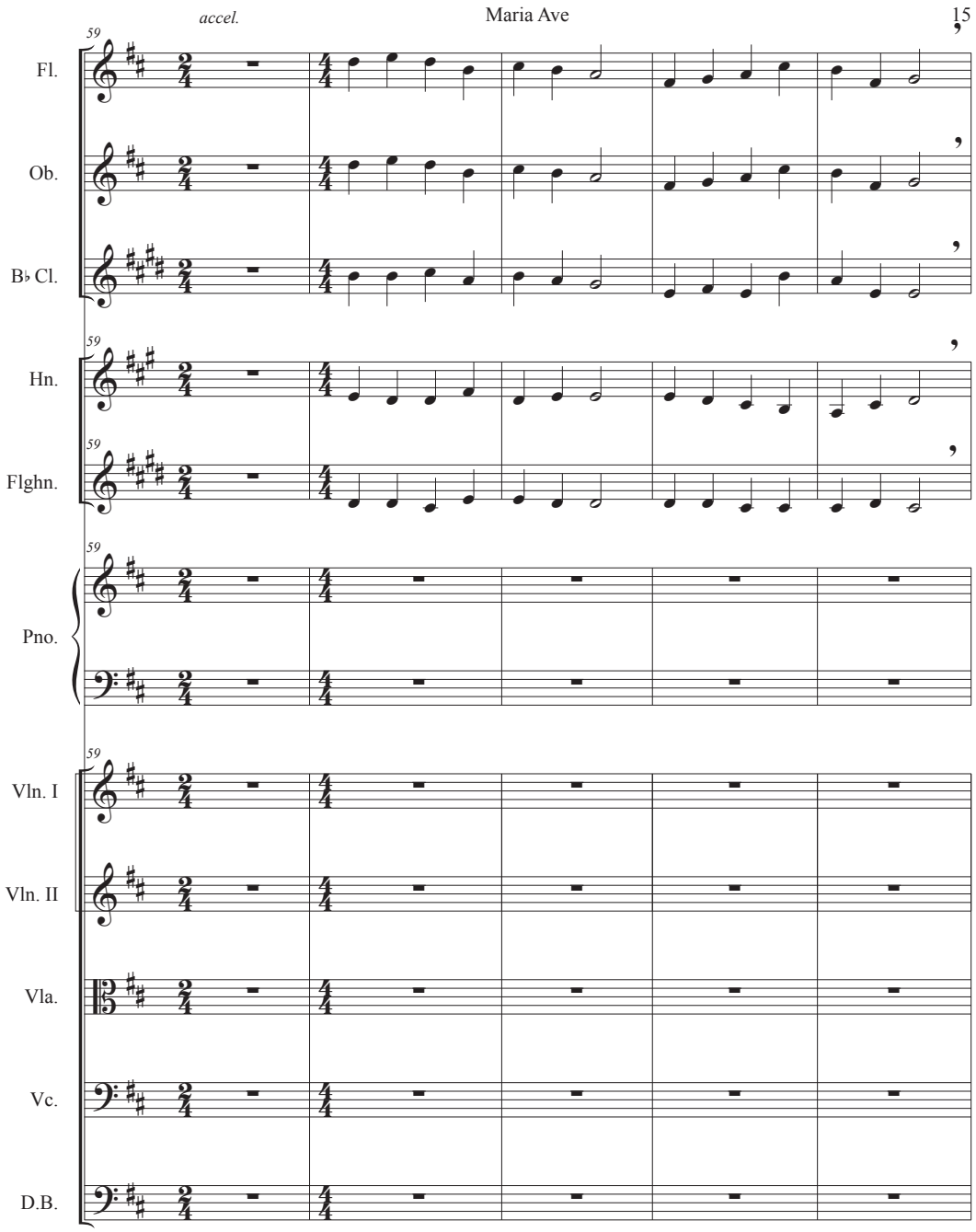

10
Maria Ave
39
Fl.
Ob.
B♭ Cl.
Hn.
Flghn.
Pno.
Vln. I
Vln. II
Vla.
Vc.
D.B.
Sul A
Sul E
Sul D
Sul A
Sul D
Sul D
Sul A
Sul D
Sul A
cresc.

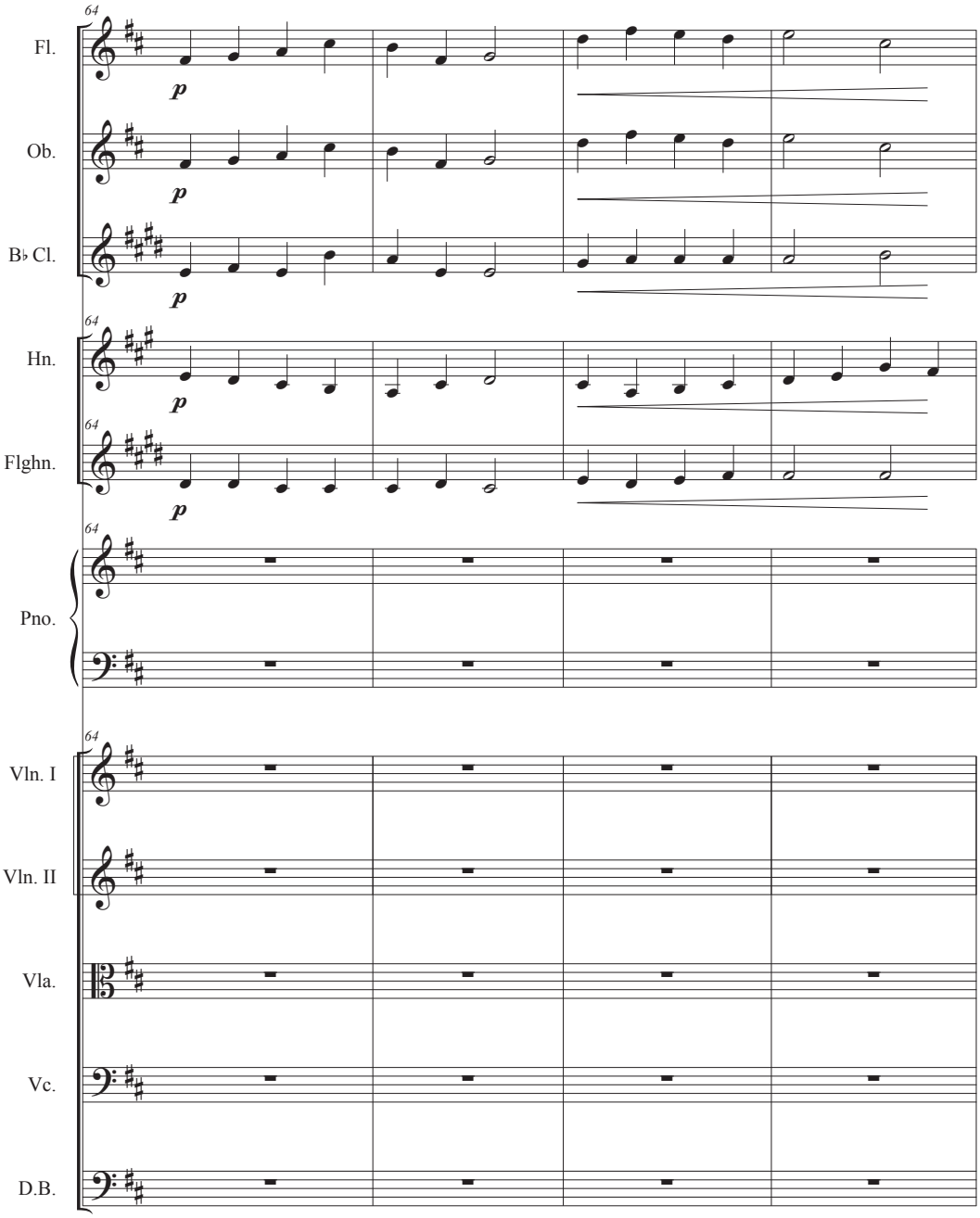

43
Fl.
mp
Ob.
mp
B♭ Cl.
mp
Hn.
mp
Flghn.
mp
Pno.
Vln. I
Sul A
Sul E
mp
Vln. II
Sul D
Sul A
Sul E
mp
Vla.
Sul G
Sul D
Sul A
Sul G
mp
Vc.
Sul G
Sul D
mp
D.B.
Sul G
mp

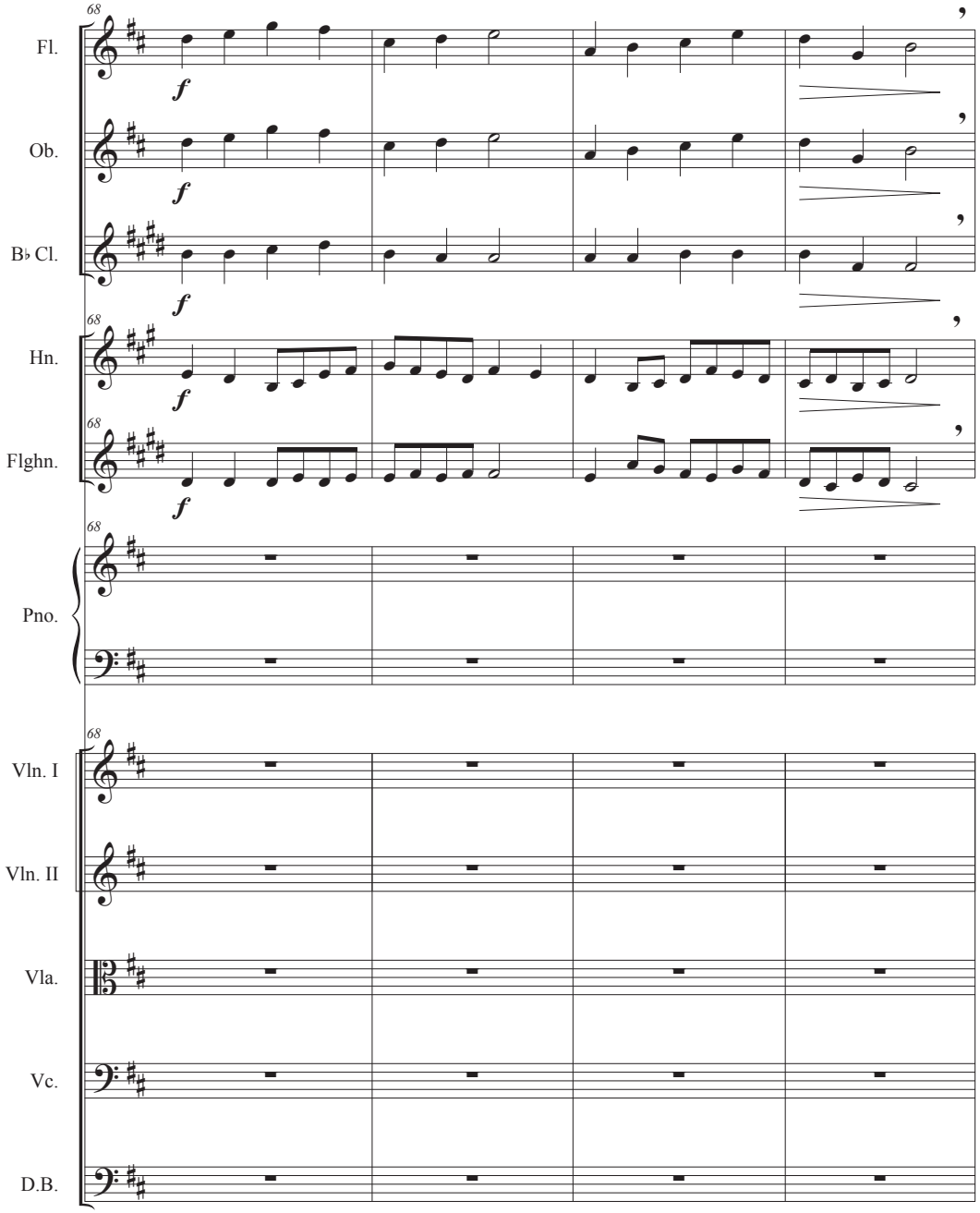

47
Fl.
cresc.
f
Ob.
cresc.
f
B♭ Cl.
cresc.
f
47
Hn.
cresc.
f
Flghn.
cresc.
f
47
Pno.
47
Sul E
Sul A
Vln. I
cresc.
p
Sul A
Sul D
Vln. II
cresc.
p
Sul D
Sul A
Sul D
Vla.
cresc.
p
Sul A
Vc.
cresc.
f
D.B.
cresc.
f

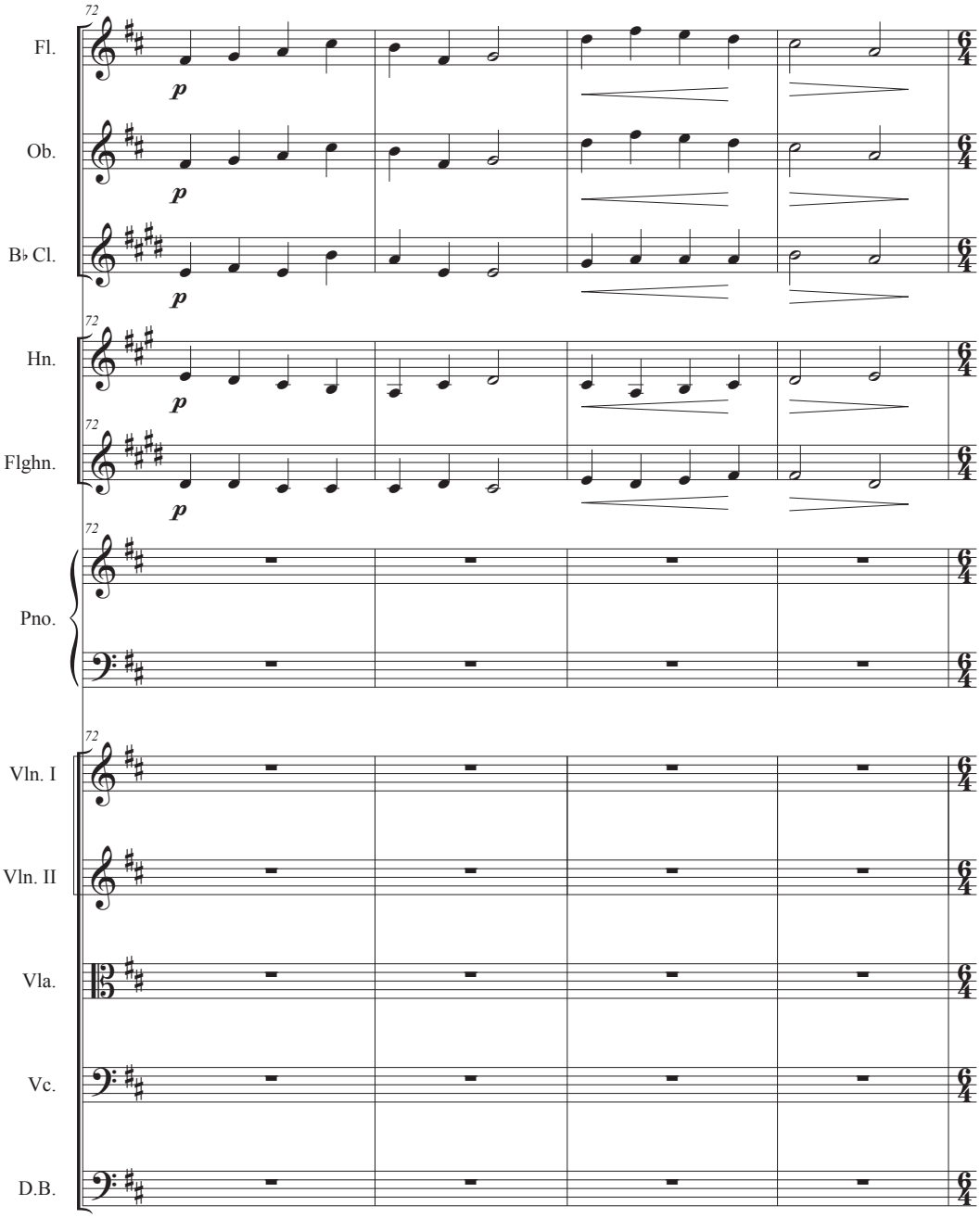

51
Fl.
Ob.
B♭ Cl.
Hn.
Flghn.
Pno.
Vln. I
Vln. II
Vla.
Vc.
D.B.
Sul E
Sul E
mf
Sul A
Sul A
mf
Sul D
Sul A
Sul D
mf
Sul A
mf
mf

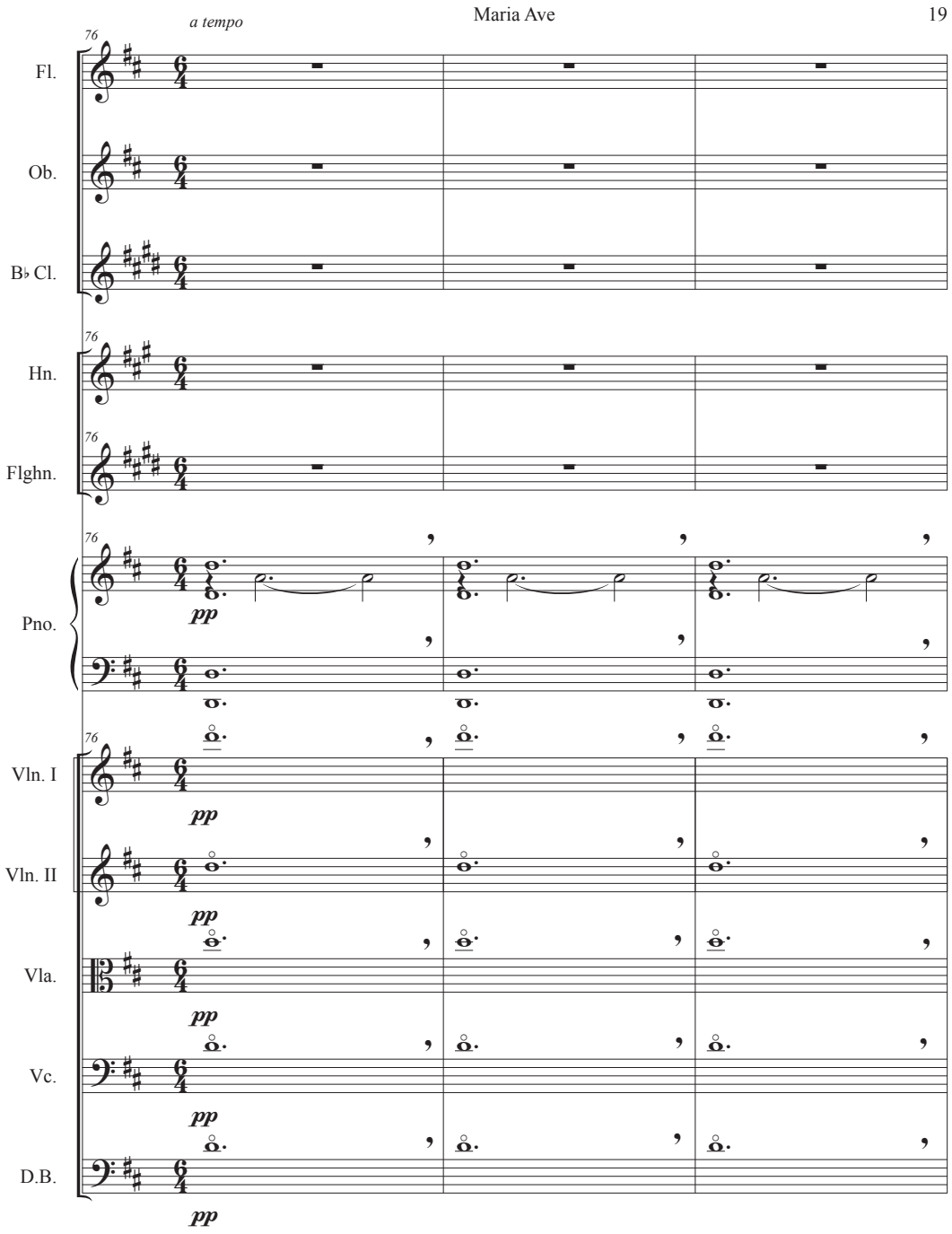

55
Fl.
Ob.
B♭ Cl.
Hn.
Flghn.
Pno.
Vln. I
Vln. II
Vla.
Vc.
D.B.
ff
mf

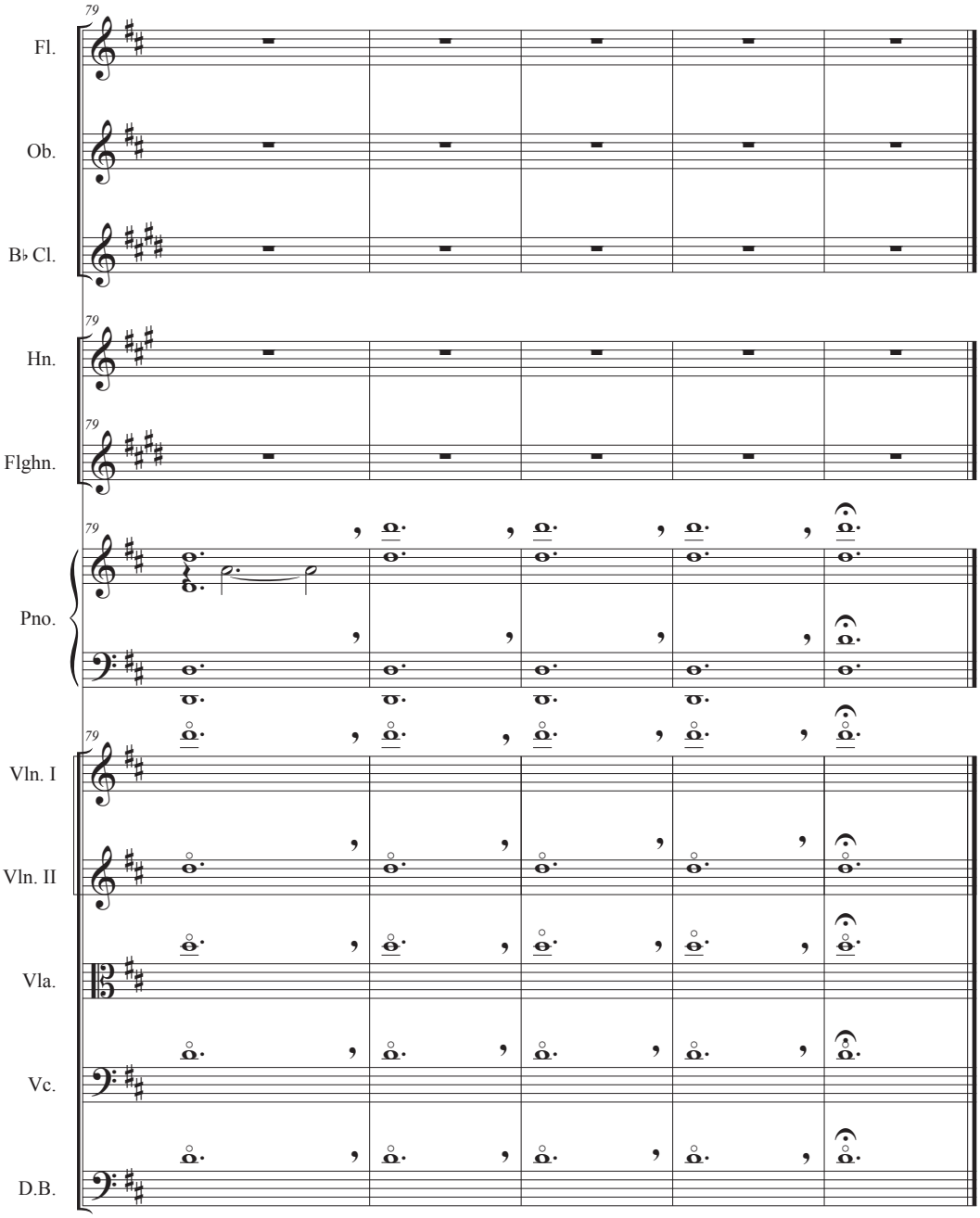

accel.
59
Fl.
Ob.
B♭ Cl.
Hn.
Flghn.
Pno.
Vln. I
Vln. II
Vla.
Vc.
D.B.


64
Fl.
p
Ob.
p
B♭ Cl.
p
64
Hn.
p
64
Flghn.
p
64
Pno.
64
Vln. I
Vln. II
Vla.
Vc.
D.B.


68
Fl.
Ob.
B♭ Cl.
Hn.
Flghn.
Pno.
Vln. I
Vln. II
Vla.
Vc.
D.B.
f


Fl.
Ob.
B♭ Cl.
Hn.
Flghn.
Pno.
Vln. I
Vln. II
Vla.
Vc.
D.B.
72
p
6/4


a tempo
76
Fl.
Ob.
B♭ Cl.
Hn.
Flghn.
Pno.
Vln. I
Vln. II
Vla.
Vc.
D.B.
pp


79
Fl.
Ob.
B♭ Cl.
Hn.
Flghn.
Pno.
Vln. I
Vln. II
Vla.
Vc.
D.B.

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