

**PEDAGOGICAL POTENTIAL IN THE COMPLEXISM LEARNING PROCESS:
A PERFORMER’S JOURNEY THROUGH BRIAN FERNEYHOUGH’S
“BONE ALPHABET” (1992)**

by

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Abstract

When performers decide to take on the substantial task of learning and performing a piece of music in the style known as complexism (more typically called “New Complexity”), they are faced with technical and interpretive challenges of a hyper-virtuosic nature. These demands are far beyond what is typically found in the majority of other musical contexts and therefore can be daunting to the performer. This thesis focuses on the pedagogical potentials inherent in the learning process of a complexist work. Included are interviews with major performers of this style of music and their insights into the benefits of such a specialized learning context. Following this, a detailed analysis is provided of my own experience learning and performing Brian Ferneyhough’s “Bone Alphabet,” (1992) a solo percussion work in this style, with supporting video demonstrations. This discussion is complemented by the presentation of strategies for performers to surmount the technical and interpretive difficulties found in complexism.

Complexism and the choice to take it on have faced criticism over the years, with arguments being that the abundance of compositional material is too much for a performer to properly realize, attempts to prepare the works yield only approximations that sound like improvisations, and that the amount of time needed to prepare a work is not beneficial at all to the performer. However, my experience learning “Bone Alphabet,” and the processes and choices I was required to make as a student of this style have helped to inform and serve numerous aspects of my musicianship in other contexts, such as increased technical facility in executing complex rhythms and more thoughtful and rigorous score study and interpretation. Through an

analysis of my own experience as well as expert testimonials regarding this unique musical context, this thesis will illuminate the pedagogical potentials inherent in the learning process for works of musical complexism.

Lay Summary

Complexism is a style of music that emerged in the 1970's and 1980's which typically includes an abundance of compositional material and highly virtuosic demands for performers. The difficulties associated with this style of music have garnered criticism from several sources, such as the music is too difficult for a human to perform, and that the length of time it takes to prepare one of these works is not beneficial at all to the performer.

This thesis argues that the preparation and performance of a work in this style is indeed pedagogically beneficial to the maturing musician. This is displayed through interviews with well-known performers of complexism, an analytic account of the author's own preparation process of a work in this style ("Bone Alphabet" (1992) by Brian Ferneyhough) with supporting video demonstrations, as well as connections made between this musical style and others.

Preface

This dissertation is an original, unpublished, independent work by the author, Aaron Graham. A lecture recital related to materials from Chapters 2, 3, and 4 of this thesis was presented on March 18th, 2020 at the University of British Columbia. The lecture portion introduced the goal and purpose of the thesis, detailed primary thesis arguments, and the recital portion presented a live performance of Brian Ferneyhough's "Bone Alphabet" (1992).

Interviews with expert performers were conducted, prior to which a certificate of approval was granted by the Behavioural Research Ethics Board at the University of British Columbia—Certificate Number H19-02460.

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Introduction

In fact, complexity...is a prerequisite of any great art wishing to satisfy not only the sense and feelings, but also the mind. As such, it has always existed.
- Harry Halbreich (1990: 24)

It was musicologist Richard Toop who was the first to use the term New Complexity in a scholarly publication in 1988. This was a term he chose to describe a virtuosic school of compositional style incorporating ametric and irrational rhythmic groupings, frequent use of micro-tones, and an abundance of compositional specificities, which typically stemmed from and centred around the music of British composer Brian Ferneyhough. The initial group of composers he chose to discuss were Christopher Dench, Michael Finnissy, James Dillon and Richard Barrett, all of whom were also of English decent. A more recently-emerged term is *complexism*, coined by German composer and philosopher Claus-Steffen Mahnkopf, which is less specific in nature and more all-encompassing of the compositional *trends* in this style of music. When a musical performer decides to take on the task of learning and performing a work in this style, they are faced with technical and interpretive challenges at a level of difficulty which is rarely matched in other musical contexts. To take on one of these works which incorporates such an abundance of compositional material can be daunting to the performer and therefore they are typically performed much less frequently than most other more traditional musical works.

Complexism has received criticisms throughout the years as being a music of purely intellectual substance, utilizing notation which is far too difficult to comprehend, and producing a musical outcome that has little value to either the performer or the listening audience.

Composer Christopher Dench describes this as the “complexity paradox” (Dench, 2002: 183), correlating the dense appearance of the scores with the overly intellectual perception of the music. Well-known music critic and *The New Yorker* author Alex Ross likened this music to “a kind of planned improvisation, more akin to a free-jazz or avant-rock freak-out... a mosh pit for the mind” (Ross, 2007: 569). This sentiment and further criticisms which I will discuss in Chapter 1 are far from my experience with this style of music. In 2015, I had the transformative experience of learning and performing Brian Ferneyhough’s “Bone Alphabet,” (1992) a 12-minute long work for solo percussion setup which utilizes the kinds of virtuosic and contrapuntal technical demands that this style is known for. Ferneyhough’s ambiguity in instrument choice and setup, coupled with the ample expressive musical text affords a world of interpretation and expression from the performer. Furthermore, I have found that the processes and choices I was required to make as a student of this work have helped to inform and serve numerous aspects of my musicianship in other contexts, such as increased technical facility in executing complex rhythms, and more thoughtful and rigorous score study and interpretive processes.

This thesis will focus on the pedagogical potentials inherent in the learning process and live performance of a complexist work. Through descriptions of the kinds of difficulties I faced learning “Bone Alphabet,” the strategies I utilized to overcome such hurdles, interviews with well-known performers of complexist music, and exploration of the possible connections between the unique demands of this specific musical context and historic feats across other disciplines, I will illuminate the myriad of benefits that this process can bring to the maturing percussionist.

Chapter 1 will begin with a literature review on the origins of the New Complexity and complexism styles, and the evolution of relevant research and performance practice. This will serve to introduce the characteristics and ideals behind some of the major composers of the style, as well as public response and criticism to works from this compositional school. The information discussed will situate these musical styles within the canon of recent music history, as well as introduce the criticisms around accurate performance and interpretation that my study will be re-evaluating. Writings, research, and interviews relevant to complexism will be examined, including Richard Toop's aforementioned and seminal 1988 article "Four Facets of the New Complexity," the numerous interviews and writings of composer Brian Ferneyhough (widely considered the central figure in this movement), as well as various other writings and interviews with major composers and performers of complexism. Then, possible connections will be presented between the necessary preparations needed to undertake such a work of virtuosity and the willingness to approach challenges in a new and foreign manner, with historical feats from other disciplines that required similar preparations and outlooks. I include these as a way to relate the attainable nature of proper complexist performance with the seemingly impossible feats that were achieved through ingenuity and rigorous training.

Chapter 2 details interview responses from four expert performers and champions in the complexist style: Liam Hockley, who has performed extensively throughout the world with a focus on contemporary music and the interpretation of avant-garde and virtuosic approaches to clarinet performance; Mieko Kanno, award-winning violinist and professor of music at the University of Arts Helsinki; Mark McGregor, world-renowned flautist and one of Canada's leading interpreters of contemporary and classical music; and Steven Schick, widely acclaimed

percussionist, advocate of new music and professor of percussion at the University of California —San Diego. The main purpose of this chapter is to summarize the insights and experiences of the interviewees in order to provide a context for and connection to my own experience with complexism. Questions were chosen in an effort to demonstrate the methods these performers utilized in their learning processes and the ways in which their experience with complexism helped to inform their various other musical endeavours.

In Chapter 3, relationships between the interviewee's experience and my own learning process, and the challenges I faced in working through Brian Ferneyhough's "Bone Alphabet" are identified. Major technical hurdles, with accompanying videos for demonstration, and unique pedagogical methods I was required to utilize in learning the work are discussed. The chapter is divided into three sections: the first deals with preparatory measures that need to be completed before beginning work on learning the score; the second addresses specific technical difficulties throughout, and my modes of overcoming these challenges; the third discusses more broad issues such as interpretation of form, expressive text, and performance prerogatives.

Chapter 4 develops my argument for the pedagogical benefits that result from work on musical complexism. This is achieved by following two related paths. Firstly, I relate my experience learning "Bone Alphabet" and the strategies I developed to overcome technical obstacles to challenges faced in various other contexts more typical of the percussionist. This discussion draws connections to solo percussion works by composers such as Iannis Xenakis and Keiko Abe, other works from composers in the complexism style and techniques required in other genres of percussion performance such as orchestral and rudimental drumming. Then, I discuss the benefits to musicianship that go beyond percussion-specific contexts such as

heightened levels of musicality and interpretation, a more meticulous preparation process, and experience with focused and in-depth training for high-level performance.

Finally, Chapter 5 summarizes and further details my primary thesis argument. I will provide conclusions that I have come to as a result of this study, possible relations that can be made to other instruments, and future work that may be done on the topic.

References and citations are provided in the main text parenthetically, in (Author, Date: Page) format. The Bibliography (page 110) is correspondingly formatted in (Author. Date.) style, and is divided into musical scores and text sources.

Chapter 1: Literature Review

1.1 Origins and Classifications

The focus of this thesis is on the relatively recent style of complex musical composition known as complexism, or more typically as New Complexity, the beginnings of which are most often associated with the music of British composer Brian Ferneyhough. The *New Grove Dictionary of Music and Musicians* describes the New Complexity compositional style as follows:

In particular they sought to achieve in their works a complex, multi-layered interplay of evolutionary processes occurring simultaneously within every dimension of the musical material. (...) [T]heir scores necessarily pushed the prescriptive capacity of traditional staff notation to its limits, with a hitherto unprecedented detailing of articulation. Microtonal pitch differentiations, ametric rhythmic divisions and the minutiae of timbral and dynamic inflection were all painstakingly notated; the technical and intellectual difficulties which such notations present for performers were regarded as a significant aesthetic feature of the music. (Fox, 2001: para. 1)

The term New Complexity is typically credited to musicologist Richard Toop who was the first to use the term in an academic context in reference to a specific compositional style and group of composers (Toop, 1988). According to Toop however, he was not the first to actually coin the term, as he heard it in 1986 from Roger Wright, the director of the British Music Information Centre at the time, who heard it from composer James Dillon, who seems to have heard it from “Nigel Osborne, who seems to have coined it in the course of a pre-concert talk ca. 1980 introducing new works of Dillon and Dench” (Toop, 2002: 133). No matter the origins of the term, it is Toop’s 1988 work that is the first to cite New Complexity as a burgeoning style of composition.

Complexity in music is certainly not a contemporary or even recently-emerged compositional aspect. German composer and philosopher Claus-Steffen Mahnkopf describes a history of complexities in music with what he describes as his own “selective affinities”:

...the *ars subtilior* (as found in the Codex Chantilly or the Turino Manuscript), some of the English vocal polyphony of the 15th and 16th centuries (the Eton Choir Book, the volumes *Music of Scotland* and *Tudor Church Music* in the *Musica Britannica*), Gesualdo di Venosa, Carl Philipp Emanuel Bach, the late contrapuntal conception of Johann Sebastian Bach, Beethoven’s *Große Fugue*, much of Wagner’s work, Max Reger’s thoroughly chromaticized polyphony, Charles Ives 4th Symphony, and much of Alban Berg’s work (such as the Three Orchestral Pieces op. 6); and among the already historical or legendary representatives of the newer music, Conlon Nancarrow (more in a phenomenological sense than in terms of musical meaning) and the exemplary works of the high point of the post-WWII serialists (*Gruppen*, *Polyphonie X*). (Mahnkopf, 2002a: 61).

Toop includes some of the same examples as Mahnkopf as he traces instances of complexity throughout the Western musical history in

...the extravagant alleluias of plainchant and thirteenth century Parisian organum (...) the *ars subtilior* of the fourteenth century (...) (the rhythmic explorations of) Ives, Stravinsky and Nancarrow (...) and in terms of pitch not only the Second Viennese School but equally the microtonal explorations of Alois Hába. (Toop, 2010: 89)

In Toop’s seminal work “Four Facets of the New Complexity,” he discusses the compositional style of four British composers—Michael Finnissy, James Dillon, Christopher Dench, and Richard Barrett—who he describes as “the corporate subjects (or victims) of a new catch-phrase: ‘The New Complexity’” (Toop, 1988: 4). Toop writes that his decision to include these four composers came from their shared collective views of

...priorities in new British music which is not, on the whole, shared by the British musical establishment (...) My desire to look at them this way springs from a conviction already expressed elsewhere, that alongside Birtwistle and Ferneyhough, they represent

the few possible sources of light within a scene otherwise dominated by (to coin another catch-phrase) ‘The New Capitulationism.’¹ (Toop, 1988: 4)

He begins by discussing certain technical and aesthetic links in their compositional styles as a way to further characterize this label: aspects such as complexity, frequent use of micro-tones, cyclomania (or the penchant for frequently creating large-scale collections of works) and their respective relations to the influences and traditions of past composers. Toop’s discussions are supplemented with illuminating quotations from each of the composers which provide an insightful context into their compositional processes as well as the more widespread compositional trends of the time. Toop ends the article with in-depth musical analyses of works by, and discussions with, each of the four composers.

There has been push-back both from the composers examined by Toop, as well as others in this style, against the reductive and pigeon-holing nature of the classification. To be clear, Toop made it quite apparent at the beginning of his work that he fully understood the nature of “lumping together composers who, from many points of view, might prefer to remain separate” (Toop, 1988: 4). He also goes on to mention that the middle section of the article (which deals with each composer separately, including interviews and discussions of compositional process) is the bulk and main substance of the essay. Finnissy and Dench offer varying responses to the New Complexity classification:

Michael Finnissy: It horrifies me that people say the music is complex. It isn’t, except in a very superficial detailed kind of way. It’s complex if you accept that human beings are complex, and all art is complex.

¹ Max Paddison describes the catch-phrase ‘New Capitulationsim’ as “prevailing conservative and retrogressive tendencies towards accommodation” (Paddison 2016, 213).

Christopher Dench: Funnily enough, the notion of complexity came about through much older pieces, which were very much more skin-deep—pieces that had the flashy surface and nothing underneath. And people would look at the 11:15's I had thrown in and say, 'Oh, this is terribly exciting'. [Nowadays] I am against that kind of melodramatic surface. (Toop, 1988: 5)

Ferneyhough provides the following response to questions on the nature of musical complexity:

Things in the present day world surely move rather quickly. It seems rather anomalous to expect our art to be easily understandable; I don't see music as providing a sort of breathing space between bouts of confrontation with the outside world! It is also not directly about offering privileged insights, but more about how to create one's insights when immersed in the complex ambiguity of the art object. (Boros, Ferneyhough, Harvey and Toop, 1995: 373)

The rejection of any kind of defining classification by these composers is (of course) understandable. While it may point to technical and aesthetical tendencies shared by some of these composers at certain points in their careers, it certainly is not a holistic description of their works. This Ferneyhough-centric² school of composition is certainly no longer "New" either, therefore somewhat negating both terms in this particular classification.

Claus-Steffen Mahnkopf is responsible for coining the term "complexist" music as an avenue to describe more general tendencies in compositional style such as:

1. density and rapidity of events;
2. complexity of the rhythmic and pitch structures;
3. abundance of the morphology;
4. (real/microparametric) polyphony in the sense of a high degree of dissociation in the discursivity;
5. poly-processualization of formal directionalities;
6. apperceptive surplus;
7. diagonal mode of listening;
8. immanentistic semantic;
9. *expressivist* expression;

² Alex Ross describes Ferneyhough as the "somewhat unwilling figure-head" for the New Complexity movement (Ross 2007, 569).

10. multiperspectivity and multidimensionality of the ‘empiricity’ of the artwork, above all of musical time;
11. deconstructionism of the work character and the performance situation;
12. *complexist* complexity, in contradistinction to other forms of complexity. (Mahnkopf, 2002a: 56)

Mahnkopf also gives a few examples (present in the musical world at the time of this 2002 publication) of what he would point to specifically as complexist music:

1. the statistical/stochastic ‘school’ (Xenakis and his followers), aiming at complex musical masses;
2. spectralism (Murail, Grisey, etc.), employing complexly-structured sound spectra;
3. Lachenmann’s ‘*musique concrète instrumentale*’, with its broad spectrum of sounds—stretching from conventional to the most unconventional—derived not from the world, but rather from the ‘sounding bodies’ of the Classical instrumentarium;
4. live-electronic music (late Nono and the ‘consequences’);
5. *Complexism*, with its radically and thoroughly polyphonized musical discursivity (Ferneyhough and those he has strongly influenced: English ‘New Complexity’, etc.). (Mahnkopf, 2002a: 55)

It is this final example of *complexism* that this thesis is most concerned with. Clarinettist Liam Hockley has succinctly described the advantages of utilizing Mahnkopf’s more open-ended classification as it

...helpfully points to *tendencies* in compositional approaches and attitudes, rather than some specifically-definable style or characteristic(s). In contrast to many other contemporary musical ‘-isms’, complexism is more an ethos and compositional praxis than a definable idiom: it takes many forms, rejects material-based definitions, and reflects a diversity of compositional approaches. (Hockley, 2018: 4)

Mahnkopf’s perspective and terminology has the advantage of not only being much less narrow in scope as it points to a wider range of compositional trends, but one that is more contemporary and all-encompassing than Toop’s (Mahnkopf’s publication is 16 years later and regards composers around the world, rather than Toop’s British focus). I will therefore use Mahnkopf’s terminology throughout this thesis, with ‘complexist’ referring to musical works that exhibit

certain tendencies as described in the list on the previous page, and ‘complexism’ referring to the more stylized school centred around, and stemming from the music of Brian Ferneyhough. Mahnkopf also provides a more recent list of composers who he feels fall into the complexism moniker (Mahnkopf, 2008: 9).

One distinction that Toop has written about is the difference between complex music and what could simply be described as complicated music. In “On Complexity,” he discusses difficulty in musical performance, both intellectual and physical, and how that might be classified in terms of complexity (Toop, 1993: 45). On the intellectual side of his discussion he begins with the seemingly virtuosic appearance of most complexism scores. However, as Toop discusses, we should not be quick to judge the difficulty of a work based on its appearance:

Difficulty in performance is both physiological and intellectual. If, as a pianist, I look at a score—it might be Bach, or Godowsky, or Ferneyhough—and before I’ve even played a note I say ‘God, that looks difficult!’, this could mean several different things. It might mean that the score calls for a certain level of technical competence that I don’t have (or that I’m not sure I have); this has nothing to do with substance or complexity as such, only with my shortcomings. (Mahnkopf, 2008: 9)

While much of the written material may in fact seem incredibly difficult, he asserts that (at least) some of the difficulty is more conceptual/intellectual than physical. Irrational rhythms, such as groupings of fives and sevens, are traditionally more difficult for Western musicians. In an example of this idea, Toop writes that while it may be more physically/technically demanding to play a grouping of five in one hand over a grouping of seven in the other hand, it is much more intellectually demanding to play the same passage with gaps in the grouping, forcing the performer to reckon with the space in between the gaps. He goes on to give examples of works that while seemingly complex based on the difficulty of execution (such as Beethoven’s

Hammerklavier Sonata or *Grosse Fugue*, or Liszt's *Mazeppa* Etude), are not "of itself endowed with 'complexity'" (Mahnkopf, 2008: 46) and would be more properly classified as complicated rather than complex. After this mention of Liszt, he does provide one example that he views as a "step" towards complexism:

On the other hand, it seems to me that a good performance of (Liszt's) *Feux follets* (an infinitely more subtle piece of music which is also infernally hard to play) would be one which doesn't necessarily seek to conceal technical difficulty, but willfully plays with the idea of difficulty as a conjurer might, concealing or revealing at will: this in itself would be a step towards 'complex' substance. (Mahnkopf, 2008: 46)

To complete his discussion of complex vs. complicated music, Toop brings up the example of a Bach fugue as another leaning towards complex substance in a work. While the physicality of *certain* Bach fugues may not be taxing on one's fingers, he writes, "there are many diverse elements in the piece, sometimes simultaneously, that I need to absorb, and which I am going to have to project in a lucid manner" (Toop, 1993: 46). This confluence of multiple, simultaneous compositional processes is a major element in complexist works, and I will discuss further Toop's comment of performing with "lucidity" in Chapter 3. This also leads us into the realm of musical interpretation, (and in regards to Toop's comment, just what constitutes 'lucidity' in musical performance) which is far too vast for this thesis to address. However, the following section will present a discussion on the interpretational critiques and responses specific to complexism, as I believe it will help to put into context my main thesis argument. While it is not the goal of this thesis to provide an all-encompassing definition of what complexism is, this discussion (and the rest of Toop's "On Complexity") provides some insight into what it is not.

The ongoing series of books, *New Music and Aesthetics in the 21st Century*, aided me substantially in the initial research and formulation of this project. Included in the several

volumes are contributions from multiple authors and composers into the theoretical trends and tendencies in complexist musical composition, as well as significant musical analyses of more specific complexism works which are pertinent to the argument of this thesis. The writings on the foundations and classifications of musical complexity informed much of my knowledge for this opening discussion of complexist music. While there could be significantly more discussion (quite a large amount has already been published and written about) into the parameters of complexity in music, what that entails, and the traditions of (and future possibilities for) complexist compositional styles, it is beyond the scope of this thesis for me to delve much further into.

1.2 Criticisms, Interpretation and Performance

In this section, various criticisms regarding this style of music will be discussed. First, I will present polemic arguments against the complexism performance and learning process, and how accurate performance of these works is seemingly unattainable for the performer. Criticisms of this nature include the inability to accurately execute the required virtuosities, the dense and complex notation utilized by the composers, as well as the value of the musical outcome for both the audience and the musician. Then, the section concludes with published responses to these kinds of criticisms. I will discuss not only performer-centric writings on their respective learning process used to tackle works of this nature, but also writings on the interpretation and integrity required in complexist performance.

There have been quite a few published criticisms on the ability of performers to wholly and accurately execute the demands of complexist works. In addition to the quote from Alex

Ross presented in the introduction, there have been opinions expressed by performers and composers, as well as musicologists:

The absurdity of the excesses of the New Complexity lies not merely in the precise notation of 'expression,' but in the subjugation and manipulation of the performer, who can only conclude that his efforts are ultimately of secondary importance. The player confronted by these impossible works, is defeated before even beginning, and ultimately discouraged and depressed by the approximations which occur, challenging his integrity. (Heaton, 1987: 33)

...it is not the musical difficulty per se from which 'many respectable musicians' shy away, but the lack of opportunity to employ (...) sound in the technical and aesthetic way acquired during years of study. (Mitchell, 1990: 31)

Barret's entire project is essentially a negative one. It is not a case of asserting *his* view of things, is more a case of denying our own. This he achieves by disabling and humiliating all those human faculties and powers that create the sense of socially constituted self. (Hewitt, 1994: 149)

It is a music of generalised, if often spectacular, effect. It is not a music concerned with organic continuity or evolution, except in theoretical terms. For it to be so concerned in actuality, there would need to be—both in the domain of duration and of pitch—a clearer 'safety margin.' (Marsh, 1994: 86)

These quotes include criticisms to many aspects of this music: the inability for the performer to execute the score, radical techniques required which are not rooted in tradition, a composer-centric idea of composition, and an overly intellectual musical outcome. These quotes are presented as a means to show reactions to this style of composition, and as an avenue for me to address and defend my thesis arguments later in the document.

In his 2010 article "Re-Complexifying the Function(s) of Notation in the Music of Brian Ferneyhough and the 'New Complexity'," Stuart Paul Duncan discusses composer Roger Marsh's 1994 transcription of the Arditti String Quartet performing Ferneyhough's Second String Quartet. Marsh transcribed the ensemble's performance of the work in an attempt to "show how

(...) the Arditti Quartet's performance does not match Ferneyhough's notation" (Duncan, 2010: 159). While Marsh is not an outright opponent of complexism—as he mentions that the “extraordinary and dense textures created by James Dillon (...) excite and exhilarate me (Marsh, 1994: 83)—the arguments he presents as interpretive problems will further frame some criticisms this music has received. Marsh's point of view is that the “rhythmic absurdities” (84) of Ferneyhough's score require a kind of approximation from the performers, which is not what Ferneyhough intended, and end up sounding like an improvisation. Marsh provides transcribed examples from certain excerpts of the work placing some passages in time signatures other than in Ferneyhough's score (as that is how he hears them), as well as a simpler approach to notation [that] would achieve the same audible result as complex notation (85). Duncan goes on to discuss in detail the problems with not only Marsh's transcription, but with a listener attempting to transcribe a performance of any work in this style. He writes that although Marsh concludes the score does not match the performance, neither also does Marsh's transcription. When Marsh changes certain time signatures, he “ends up applying his own rationalization to the performance” (160). Finally, Duncan describes how Marsh's application of his own notational and interpretive values in transcription “acknowledges the difficulty of asserting a direct relationship between score and realization” (162). This idea of a direct line, or clear path from score to realization (and even further to listener) is a subject that has been written about extensively as well, but is not the focus of this thesis.³

As we have seen with the critiques discussed thus far in this chapter, the issue of accurate

³ For more information regarding the performer's agency in music of the style, their role in this chain from score to realization, as well as the role of the listener in complexism performance, see Hockley (2018).

realization has been one of the primary arguments against performing complexist music. In his preeminent work “Notes Toward a Performance Practice for Complex Music” Frank Cox (2002) presents his insights into what he calls the high-Modernist model of performance practice:

These recent transformations in performance practice must be measured against the ‘ideal type’ of what the author will call a high-Modernist model of performance practice, now generally considered synonymous with morally responsible performance. This model is based on the ideal of a noise-free, ‘transparent’ relationship between (...) all elements, with a direct functional relationship between 1) notation, as indicating tasks demanding technical mastery, 2) what the author will call an adequate ‘realization’, in which all the notes are correct, all the rhythms are accurately realized, all the dynamics, phrasing marks, etc. are audibly projected and so on, 3) ideal perception, which should be able to measure, based on the score, the correspondence of the former two aspects, and even more ideally, perceive composed relationships from responsible realizations. (Cox, 2002: 71)

Cox discusses the new and unique challenges that complexism presents to performers, the fact that new challenges require new kinds of training, the problematic nature of attempting an “ideal” performance, and the shortcomings of what he calls an “absolutist” (83) standard of performance. In opposition to the high-Modernist model of performance, Cox prescribes a performance practice of “responsible interpretation” of complexism:

...the measure of performative responsibility ought to be grounded less on the external threat of punishment to mistakes (absolutely equated with failure), than on a Kantian positive striving to live up to *self-acknowledged* moral imperatives for responsible interpretation in confrontation with the musical tasks and the musical substance. (Cox, 2002: 103)

Cox gives many characteristics for what he deems as “morally responsible interpretation” and the kinds of judgements a performer is forced to make when attempting to take on the performance of one of these works. In response to the issue of inadequate realization of a complexist score, both Ferneyhough and Michael Finnissy echo Cox’s sentiment:

The criteria for aesthetically adequate performances lie in the extent to which the performer is technically and spiritually able to recognize and embody the demands of fidelity (NOT 'exactitude'!). It is not a question of 20% or 99% 'of the notes.' (Boros, Ferneyhough, Harvey and Toop, 1995: 71)

Proves I'm a fake, and that the music I write is, in toto, unplayable. Am I? Is it? Issues of 'authenticity'—do you play Ravel or Stravinsky modelling yourself solely on *their* recordings? Of course not. The score is an "open book," available to anyone, as it implies in the *Tao te Ching*, even to mock—more probably, to survey, assess, respect, and perhaps question—or to believe in entirely. (Finnissy, 2002: 78)

This idea of a "morally responsible interpretation" is an integral aspect of performing any kind of music, and is especially pedagogically important for the maturing musician. Whether you are performing Baroque music in a historically-informed manner, a work of indeterminacy with all its avenues for spontaneous outcomes, or a work of complexism with its potential "lack of competitive testability" (Cox, 2002: 78) by an audience, the performer must question their integrity in regards to what they deem a "morally responsible" performance. Within the context of complexism and the somewhat skewed relationships present between performer, score and audience (due to the highly virtuosic nature of the works and abundance of compositional material), performers must then make a choice as to what constitutes a "morally responsible" performance, and what aspects of the compositional abundance they must perform with "lucidity" (Toop, 1993: 46). Ferneyhough's thoughts on what should be considered essential criteria in a performance of his work are often cited in this debate:

I would say the establishment of audible criteria of meaningful inexactitude. That is, from work to work, from one section of a work to another section, from one performer to another, from one performance situation to another, the level of meaningful inexactitude is one indication, one hint of the way in which a work 'means'. (Boros, Ferneyhough, Harvey and Toop, 1995: 268)

This idea of ‘meaningful inexactitude’ could refer to many aspects of a complexist performance such as a performer taking certain musical liberties in regards to tempi and phrasing or the choice to present melodic lines above others in examples involving polyphony. This could also refer to the kinds of priorities a performer is forced to determine when dealing with the inability (either due to impossibility or their own technical inadequacies) to accurately execute certain virtuosic measures of complexist works.⁴ Cox further discusses this idea of integrity in musical preparation and performance at length (28), and I will return to this later in Chapter 3.

There have been many criticisms regarding the notation of this style of music. One major issue many critics have had with complexism is the extremely specific manner in which notation is utilized:

...to speak of the appearance of the music in this case is not trivial, because composers associated with the New Complexity put much effort into finding notations for virtually impalpable microtones, ever-changing rhythmic divisions and tiny gradations of timbre and loudness in an effort to realize their ideal of infinite musical evolution under infinitely fine control and presented with infinite precision, with absolutely no concession to ‘cognitive constraints’. (Taruskin, 2010: 475–476)

Players naturally prefer pieces which they understand in terms of their own experience and familiarity with a particular style, and which are more or less conventionally notated, though not necessarily technically easy. Players want to enjoy playing a part which offers expressive and stimulating possibilities, so the extremes of recent music—minimalism and the New Complexity—are not high on the list, whereas almost anything by, for example, a composer of the Second Viennese School is. (Heaton, 1987: 30)

The two stereotypical reactions to these scores seem to be either that the notation is too complex or unusual, resulting in a needlessly difficult learning process, or that the music itself is too densely notated, resulting in a more difficult reading of the score in rehearsal and performance.

⁴ This idea of determining priorities in performance is further discussed by interview participants in Chapter 2.

However, the abundance of compositional content and specificity is the tool of these composers to echo the complexity they are inspired by in the world, as Ferneyhough, Dench and Finnissy have thus far discussed. This topic leads us into the limiting nature of musical notation, for which there has been ample published material. For example, Charles Seeger writes about not only the limiting characteristics of prescriptive musical notation,⁵ but also the unavoidable traditions and familiarities that we ascribe to our performative and listening experiences:

If the stimulus is a product of the particular music tradition that we carry, we perceive it as such. If it is a product of a tradition we do not carry, we perceive it as we would a product of the one we do carry, making such changes as we are accustomed to. (Seeger, 1958: 194)

In response to more conventional music notation, composer Roger Redgate observes that conventional notation is

...already telling me what kind of music I can write, it's already providing a kind of contingent matter, if you want, that is external to me as a composer. Any ideas I have of music are very much influenced by what I can actually write down. (Redgate, 2006: 100)

Violinist and University of the Arts Helsinki professor Mieko Kanno, in her comparisons between prescriptive and descriptive musical notation, writes:

The best result notation can achieve is to approximate the music using the language of the conventions, leaving out many parameters and values that are also a constituent part of music but indefinable in notation. (Kanno, 2007: 232)

She even goes so far as to provide an example of ambiguous musical notation in Schubert's Duo for Violin and Piano in A Major, discussing uncertainties in bow markings and the interpretation thereof. In regards to notation in his works of complexism, composer Christopher Dench writes:

⁵ Prescriptive notation specifies subjective means of execution, while descriptive notation presents objective resulting configurations of pitch and rhythm.

The *notational* purpose of my scores is to engage the performer in the unfolding musical argument by implying a world dominated by interpretive rubato (...) This understanding of the notation as a series of bar-bracketed ‘cartouches,’ capsules of information both technical and expressive which require ‘reading’ (that is, decoding and digesting) rather than just reflex articulation is central to the fluidity of my work. (Dench, 1991: 104)

This argument again reflects the inherent requirements in these works for the performer to produce “morally-responsible” interpretations based on their technical abilities, and in doing so enact a method of prioritization of achievable compositional content. Ferneyhough argues that the density and preciseness of notation in his music is actually freeing for the performer:

My method of notation attempts, at best, to suggest to the player relevant methods and priorities wherewith the material can be usefully approached—the establishment of hierarchies; at worst, I imagine that he will be constantly reminded that new works often do not permit much to be taken for granted. (Boros and Ferneyhough, 1990: 11)

Ferneyhough’s sentiment is one that I share from my experience learning “Bone Alphabet.” This issue of the abundance of notation is generally criticized as being too restrictive to the performer, not allowing for any musical expression or nuances to be employed. However, this was far from my experience with this work. I found that the ample expressive text and compositional specificities actually expanded my view of interpretive possibilities.⁶

Norwegian cellist and musicologist Tanja Orning (2015) expands upon Cox’s feelings towards the high-Modernist model in her insightful article, “The Ethics of Performance Practice in Complex Music After 1945.” She concisely addresses all of the criticisms of complexism that I have discussed thus far in this chapter, and continues to discuss the fact that most works in this style are of a “radically idiomatic” (305) nature, or a compositional style which employs all

⁶ For further discussion of the interpretation, notation and general style of complexism, see Ferneyhough’s “Tactility of Time” Lecture, given at the Darmstadt School in 1988, as he brilliantly responds to arguments against the speed of his music, the tendency to compose at very slow tempi, to write in polyphony on multiple staves, as well as the frequent shifting and modulating of the pulse from bar to bar in many of his works.

possibilities unique to the respective instrument. Orning addresses the critique of overly complex notation, such as scores relegating different physical actions to separate staves (fingering, bowing, breathing, etc.), with the response that composers are utilizing *all possible* physical and mechanical properties of *both* player and instrument; to create what she calls a “dialectic tension” (305) between the performer’s intention and ability. In other words, these composers are challenging the idea of what is humanly possible by utilizing every available aspect of both performer and instrument, and the resulting attempt from the performer (whether fully realized or not) creates new and unique musical results. It is ironic that our traditional sense of idiomatic compositional material is one associated with comfort and familiarity from the instrumentalist’s perspective, while complexist composers are capitalizing on every minute characteristic that makes each instrument unique in new and unfamiliar ways. Ferneyhough reflects this in his compositional process:

I’m very concerned that the things I ask an instrumentalist to do be so instrument-specific that they conspire to create a sort of ‘X-ray’ of his instrument’s inner essence. That doesn’t mean employing the entire catalogue of secondary effects (although it might), but rather ensuring that one could not imagine any other playing the same material in the same way. (Boros and Ferneyhough, 1990: 11)

1.3 The Performer’s Perspective

The final criticism of complexism that will be addressed is the simple observation that these scores are “too” difficult to prepare and perform, both physically and intellectually. Relevant to these issues are a few publications by prominent performers of complexism, typically discussing the challenges they faced in the learning process for this style of music, and their respective solutions for tackling those challenges. It was professor Steven Schick’s

fascinating book, *The Percussionist's Art* (2002), that initially sparked my interest in learning Ferneyhough's "Bone Alphabet," and inspired this study. Schick first published his insight into the learning process for this work in "Developing an Interpretive Context: Learning Brian Ferneyhough's *Bone Alphabet*" (1994). He pragmatically discusses his reasonings behind his choice of instruments, setup, as well as the initial challenges faced in this work. Schick goes on to discuss his method of enlarging each measure of the work onto sheets of graph paper so that he may "better calculate rhythmical relationships" (136). He presents a few strategies for realizing the complex rhythms in the work, as well as for dealing with the overall form and what Ferneyhough calls "comportment" (137), or distinct formal sections of the work. I will discuss more aspects of this article later during the analysis of my own learning process of this work. This was not only incredibly useful to me as a starting point in my preparation of the piece, but these methods also apply to other complexist works. While in his article he presents his initial learning stages of the piece, I will delve further into specific technical aspects of learning this work beyond what Schick has written about. My Chapter 3 analysis includes a different viewpoint on score preparation and further ways of tackling technical challenges, and links my experience with this particular work with the more broad musical benefits of the complexist experience. Professor Schick's practical manner of presenting his process made it seem to me that a realization of a work of this nature could not only be possible, but quite achievable to anyone willing to put in the preparation. Finally, in Graziela Bortz's (2003) dissertation "Rhythm in the Music of Brian Ferneyhough, Michael Finnissy and Arthur Kampela: A Guide for Performers," she expands upon Schick's methods of dissecting and performing complex irrational rhythms with further examples of systematic and pragmatic methods.

Oboist Christopher Redgate (2007) provides insightful approaches to performing complexism in “A Discussion of Practices Used in Learning Complex Music with Specific Reference to Roger Redgate’s *Ausgangspunkte*.” He begins with how to approach initial technical hurdles which are problematic for the performer, and offers solutions in the manner of what he describes as “thinking outside of the box” and breaking rules that are “unwritten for the most part and simply accepted by most performers” (143). I was especially intrigued by his list of options to surmount seemingly impossible technical challenges; quite simple ideas such as questioning other performers as to their methods of execution, discussing possible solutions with the composer, having an “ossia” measure for performance (keeping ‘open’ the possibility of finding a solution at a later stage), and simply realizing that you may need more technical analysis or practice time to come up with an achievable solution to the problem (145). Some of these practice strategies will be discussed in greater detail when I discuss the strategies I used in learning “Bone Alphabet.”

Pianist Mark Couroux, in his “*Evryali* and the Exploding of the Interface: From Virtuosity to Anti-Virtuosity and Beyond” (2002), discusses the challenges he faced in learning Iannis Xenakis’ “*Evryali*.” Couroux describes in detail the incredible difficulty of this work with “passages that can never and will never be realized perfectly by any human performer” (53). While he grapples with various challenges which are less pertinent to the argument of this thesis such as musical interpretation, the performative persona, and the origins of the idea of the “perfect performer,” he also engages his views on what he calls “critical virtuosity” (53). The term, which he coined, is used to refer to composers who are “deliberately writing against conventional physical paradigms in order to trigger new relationships between body and

matter” (54). This is achieved in “Evryali” through extremely quick tempi and the difficulties faced in attempting to read the score, which is written on up to four staves at a time. This is especially interesting as it speaks to the tenants of complexism. These composers, who have been criticized for writing music that is seemingly impossible to realize, are doing so in an attempt to push the boundaries of musical performance as we know them. This also initiates new and exciting interactions and relationships for performers in their learning and performative processes. Couroux goes on to discuss performance considerations such as musical “priorities,” pitfalls to avoid in the learning process, as well as performing with lucidity, or “accepting the impossible and dealing rationally with it, without resorting to subterfugal improvisation” (65). This once again echoes sentiments expressed by Frank Cox and Ferneyhough’s statements of “meaningful inexactitude” (Boros, Ferneyhough, Harvey and Toop, 1995: 268).

As discussed thus far, there have been ample criticisms of complexism in regards to notation, abundance of musical material, and difficulty of accurate execution. However, as I have also presented, there have been many responses to these criticisms, both highly intellectual outlooks and practical strategies to achieving “morally responsible” realizations in this style. New challenges and seemingly impossible tasks may simply require new methods of training, new outlooks and re-examinations of the task at hand, and perhaps new ways of, as Christopher Redgate put it, breaking rules. This approach is applicable to many other disciplines, and in my research I have found examples of historical feats which, once thought impossible, were conquered by individuals who approached them in unique and innovative ways.

1.4 Connections Across Disciplines

As musicians, we can look to other disciplines for inspiration and ingenuity in tackling what may be seen as impossible challenges.

Until 1954, the four-minute mile was something beyond human comprehension, and thus beyond human achievement. It was believed to be a real physical limit for a human being to run a mile in four minutes or less. (Crook and Gunther, 2004: 22)

There's incremental advances that happen in all kinds of things, but every once in awhile there's just this iconic leap. Soloing (El Capitan), if he pulls this off, is this quantum leap forward. (Croft, 2018)

Kobayashi redefined the problem he was trying to solve. What question were his competitors asking? It was essentially: *How do I eat more hot dogs?* Kobayashi asked a different question: *How do I make hot dogs easier to eat?* This question led him to experiment and gather the feedback that changed the game. (Levitt and Dubner, 2014: 61)

These are three quotes referencing human achievements—Roger Bannister running a four-minute mile, rock climber Alex Honnold free soloing El Capitan in Yosemite National Park, Takeru Kobayashi doubling the world record for hot dog eating—that were attained through ingenuity, revolutionary training, and new and innovative outlooks on the problem at hand. This section is included in this thesis document because we can examine the unique ways in which these individuals approached their goals and apply their methods to the preparation of complexist works. Furthermore, there are aspects that are consistent across their individual successes.

As illustrated in the first quote, it was once thought impossible for a human being to run a mile in under four minutes. When human beings got the notion in their heads that it was in fact attainable, the “Miracle Mile” (Kruger, 2006) was sought after for decades, until athlete and scientist Roger Bannister conquered the barrier in 1954. So how was Bannister able to attain the impossible feat? In “Training Theory and Why Roger Bannister was the First Four-Minute

Miler;” Arnd Krüger (2006) attributes it to Bannister’s analytical outlook on training and preparation, as well as his being one of the first to utilize what is today known as “General Training Theory” (306).

Coaching science does not believe in ‘art’ or in miracles. On the whole, there ought to be a good explanation why certain things happen in sports and they have to be duplicable to make them scientific. ‘General Training Theory’ only started to develop in the 1950’s and many of the parameters used today to objectify reasons for success make predictions about future accomplishments, and organize training in such a way to increase the likelihood of success, were not measured nor observed in the 1950’s. (Krüger, 2006: 306)

This general training theory employs a scientific and methodical analysis of data in order to determine the “priorities in the organization of all the phases of the training process” (Verchoshanskij, 1999: 45) and maximize the potential for success.⁷ Kruger gives twelve training methods which Bannister engaged in to break the record—methods such as a respect for the tradition of running, bio-technical efficiency, eccentric training, and anaerobic threshold training. By combining the typical rigorous training methods of the running tradition before him with a new scientific outlook and analysis of his training data, he was able to approach this challenge in a more thoughtful and prepared manner. What I find most fascinating is the fact that once Bannister conquered this record, the threshold was being broken only a decade later by runners throughout the world, including several high-school aged runners. This analytical and objective outlook on training for athletic success is one that has continued to evolve and is still utilized throughout the world of athletics.⁸ Bannister not only proved it was possible, but through his achievement, allowed so many others to realize this possibility. This

⁷ See also Bompa (1999) and Platonov (1997).

⁸ See also Hodges and Williams (2012).

was achieved both through a combination of methodical preparation, and a willingness to look beyond the perceived impossibility of his task.

This kind of focused and methodical training is exactly the sort needed when tackling a virtuosic work of complexism. It takes not only a rigorous and disciplined learning process, but the foresight to know what aspects of the work will need the most practice, and how best to approach learning those most difficult elements. If a performer can pinpoint the specific challenges in front of them, and approach them in a reasonable manner that (although maybe different from any musical tasks they have faced before) slowly develops the skills needed to perform these works, then we should not view a performance of this style of music as unachievable. This kind of learning process is described thoroughly in articles discussed thus far, such as by Christopher Redgate in his discussion of learning Roger Redgate's "Ausgangspunkte" (Redgate, 2007), and by Steven Schick in his discussion of learning Brian Ferneyhough's "Bone Alphabet" (Schick, 1994). I will detail my own meticulously planned learning process for this specific Ferneyhough work in Chapter 3.

A thoroughly planned training process was also utilized by Alex Honnold for his 2018 free solo climb of the mountain El Capitan, in Yosemite National Park, USA. To free solo is to climb a mountain with no rope or safety harness attachments and it took Honnold nearly four hours of continuous climbing to ascend the over 2,300 metre high mountain with only a small bag of chalk strapped to his waist. In the documentary "Free Solo" (Vasarhelyi et al, 2018), Honnold discusses the repetitive practice he engaged in for years in order to do what many thought was impossible. He kept a detailed climbing journal, mapped out his exact route on the mountain, and mentally replayed over and over every twist and turn needed to ascend the wall.

The route held over 30 pitches (a classification made by climbers to rank portions of a route by difficulty) and Honnold memorized a routine for every one of them; this is similar to the kind of rigorous preparations Edmund Hillary and Tenzing Norgay underwent in their (first-ever) 1953 summiting of Mount Everest (Walton and Birrell, 2012). Furthermore, by creating a custom hang board apparatus and workout modelled after Olympic lifting programs, he utilized an unusual training method that would most benefit the particular skills he was seeking to improve. Mark Synnott (personal friend of Honnold) details further training methods utilized along with how this historic feat has affected the rest of the free solo climbing community in his 2018 work, “The Impossible Climb: Alex Honnold, El Capitan and the climbing life” (Synnott, 2018). Both Honnold and Bannister ignored the public opinions that felt these accomplishments were humanly impossible, and simply assessed the preparations needed to tackle the feat. Upon knowing the preparations needed, they engaged in these processes in a disciplined, repetitive, and analytical manner in an attempt to maximize their success. They also did not stray from unusual or innovative training methods, an aspect of these accomplishments that directly applies to the typical kinds of “outside the box” demands from composers of complexism. Thus, it may be more advantageous for performers to not stray away from performance demands from composers that are foreign to us, or that might seem uncomfortable due to the unusual nature of the requests.

The idea of re-examining the task at hand in a new or innovative manner was brilliantly demonstrated by Takeru Kobayashi in his astounding debut at the 2001 Nathan’s International Hot Dog Eating Contest in New York City. The goal of this contest is simple: eat as many hot dogs and buns as humanly possible in 12 minutes. The record prior to 2001 was 25 and 1/8 hot

dogs and buns. Kobayashi stunned the crowd by consuming 50 hot dogs and buns in 12 minutes, nearly doubling the world record. At this time he was not known to anyone in the contest, he had trained in obscurity, and his unorthodox performance (both due to the sheer number of hot dogs eaten and his unusual method of dancing and shaking while eating) in the contest was a shock to everyone. Kobayashi attributes his success to simply figuring out a way to making hot dogs easier to eat.

At university, he had been learning about game theory, and now it came in handy... His experimentation was endless. He videotaped his training sessions and recorded all his data in a spreadsheet, hunting for inefficiencies and lost milliseconds. He experimented with pace (...) He found that getting a lot of sleep was especially important. So was weight training (...) He also discovered that he could make more room in his stomach by jumping and wriggling as he ate—a strange, animalistic dance that came to be known as the Kobayashi Shake. (Levitt and Dubner, 2014: 53–59)

The breaking of a hot dog eating world record may not seem as monumental or historically important as the feats discussed at the beginning of this section, but the systematic manner in which Kobayashi approached the task at hand can and should be mirrored in the preparation of something as daunting and perplexing as complexist works. Kobayashi ignored the manner in which his competitors had previously prepared for the contest, which was simply eating as they would on the day of the contest and attempting to slowly grow that number over time. He found his own innovative methods to achieve higher success just as complexist performers may be willing to train in a manner that is contrary to their “typical” musical upbringing. He experimented, engaged in repetitive and disciplined training, and was not afraid to try wildly unusual tactics⁹—which again reflects the kinds of training methods discussed earlier, utilized by performers such as Redgate and Schick.

⁹ See also Green (2013).

Finally, Kobayashi “refused to acknowledge the legitimacy of the existing Coney Island record 25 1/8” (62). This ignoring of a perceived or artificial barrier was also demonstrated by Bannister, Honnold, and so many athletes throughout history. When we look at the densely composed score of a complexist work, it should not be viewed as an impossible task. The performer should simply examine what is needed to achieve their goal, and not discount methods they have not utilized before. If it takes a more thorough preparation and score study process than most other works due to the abundance of composed material, that is not a deterrent for, or criticism against this style. As previously discussed, the most famous music throughout history continually pushed the envelope in terms of playability, characterization, and compositional content. Frank Cox discusses this idea in a response to critiques of the difficulties associated with complexism:

Perhaps the most compelling argument against such absolutism would be the following: granted the proven fact that few (if any) world-premières of the masterworks forming the core of the present Western repertoire were initially performed ‘perfect’ or even ‘well’, would such advocates claim that none of these works should have been performed until they could be performed at the highest possible level? If this is asserted, then such advocates must also agree to the consequences: radical composers such as Beethoven, Bach, Wagner, or Schönberg should never have been performed in their own lifetimes, which is as much as to say that they should have ceased to compose. (Cox, 2002: 93)

Now, while the risks associated with the extreme challenges discussed may be higher than in the performance of music, we can make some connections to those risks (and what they inspire and motivate humans to achieve) in our pursuit of responsible complexist performance practice.

In “Anomalous Experience in the Performing Arts: A Transdisciplinary Encounter,” Lynne Hedrick Roff (2013) presents a view consonant with many of my arguments from this section as she discusses interview responses by performers from several artistic disciplines, such

as dance, theatre and music. Through very detailed accounts from her participants, she highlights fascinating stories of the risks involved with performance and how it affects a performer, various perceived stages of consciousness throughout the learning and performance process, and (of particular interest to this study) how performers overcame seemingly impossible tasks in training and performance:

Examples of extreme physical performance appear to happen concurrently with prolonged rigorous physical and psychological training, altered states of consciousness, and conditions of real or perceived personal risk. (Roff, 2013: 69)

Beyond Roff's work, there have been several other studies into altered states of consciousness "enhancing human performance" (Druckman and Bjork, 1994: 207) and the effects it has on a human's perception (Tart, 1969). While much of Roff's dissertation is concerned with anomalous performance experiences that science is unable to explain, she provides several interrelated accounts of performers who continued to push the bounds of what was thought to be impossible through rigorous training, and a rejection of perceived physical and mental barriers. Regarding his continually fascinating acrobatic feats, dancer Mikhail Baryshnikov answers:

Once something that seems extraordinary is simply in the realm of the possible, the body adjusts to that demand. It is why dancers can leap higher and higher and higher. Because you have seen what is possible. (Roff, 2013: 126)

Roff gives numerous other examples from dancers and musicians alike where realizing *and* ignoring perceived barriers "enabled us to achieve the physical prowess we desired" (173). This once again echoes the stunning fact that running a four-minute mile became somewhat common place in the decades following Roger Bannister's breaking of the record, as the public witnessed the possibility of the feat. As learners and performers of complexism, it would be advantageous

to take these accounts to heart, and not be derailed or discouraged by the criticisms I have discussed.

One further salient element in Roff's study is the discussion of hyperawareness, and the motivating aspect of risk on performers. Roff feels that this altered state of consciousness is attainable through training:

Of all the emergent phenomena that occur in the performing arts the most predictable and the most common, in my experience, is an altered state of hyperawareness, a state of mind that becomes readily attainable with practice. A condition of hyperaware focus and sensory engagement is a goal of performing arts education across domains. (Roff, 2013: 151)

She concludes that the typically overwhelming factor to initiate this altered state is the risk associated with public performance, or the fear of making mistakes, providing a poor performance, or being embarrassed of the audience's reception. I include this because it is pertinent to the performance of the virtuosic aspects of complexism. While at first glance, many of the faster and more complex rhythmic groupings may seem too fast for a human to pull off, through rigorous training an altered state of hyperawareness is in fact attainable, and will aid in propelling a performer farther in performance than they might think possible. Roff corroborates this notion with further examples, such as a theatre company memorizing an entire play much faster than normal through training and the risks associated with a fast-approaching opening night performance. She also discusses the notion of perceived time dilation in this altered state of consciousness through the context of tap dancers and concert pianists:

Assume for the moment that these acts are exactly as they appear to be: demonstrations of useful skills cultivated by the performing artist that are beyond the scope of the everyday waking consciousness. Like the tap dancer and the piano soloist, performers may regularly engage in activity that when examined closely appears to be impossible for the normal cognitive and physical faculties. (Roff, 2013: 166)

People throughout history have continually pushed the bounds of what the rest of the world thought was humanly possible. Through repetitive and rigorous training, and a realization and rejection of artificial barriers, astounding feats have been achieved which helped to further inspire others to continue striving for the unthinkable. This kind of preparation correlates to the approach we as performers could take to performing works of complexism, or any other kind of music for that matter.

I have presented the typical criticisms and perceived problems with works of complexism, as well as some beginning thoughts as to how to tackle the seemingly daunting learning process. In Chapter 2, interviews with several prominent complexist performers will be discussed. Their insights and experiences provide further evidence that ‘morally responsible’ interpretations of these works are attainable and pedagogically beneficial to the performer, as well as pragmatic and practical approaches for achieving this goal.

Chapter 2. Interviews with Expert Performers of Complexism

In this chapter I will discuss questionnaire responses from experienced performers of complexist music. Participants were chosen based on their performance history in this style, published research on the subject, as well as reputation for being world class performers.

Selected interviewees include clarinetist Liam Hockley, violinist Mieko Kanno, flautist Mark McGregor, and percussionist Steven Schick. The questions sent to each of the participants are as follows:

1. Tell me about how you came to be interested in New Complexity. What was it like to learn your first piece in this style?
2. Can you describe how your musical ideas or techniques developed or were adjusted during the process of learning this work?
3. Did you find that the learning process was less difficult for subsequent pieces in this style than it was in your first experience?
4. What special kinds of skills are needed to perform this music?
5. Describe your mental and psychological state when you perform this music.
6. Have you found that your experience learning and performing New Complexity music has served you in other musical contexts? Either through specific skills acquired in the learning process, during live performance, or in more broad terms such as musical and conceptual interpretation?
7. What would be your advice to a student who comes to you with the desire to learn a New Complexity work?
8. And would there be any criteria in deciding if a student is prepared to take on such a challenge?
9. What is your response to critics who say that the amount of work it takes to prepare a work in this style is not worth the musical outcome for either the performer or audience? Could you argue both for and against this perspective?

These questions are meant to illuminate both the learning processes utilized by each performer, as well as the pedagogical benefits they have seen as a result of their time spent with this style of music. It was also my goal to frame complexism as it is seen from the pedagogue's point of view,

rather than solely from the performance standpoint. I chose to use the term New Complexity in my interview questions as that is the more commonly known description of this style of music. Complexism is not as widely adopted by musicians in this particular performance community, and I therefore wished to be as clear as possible in my choice of words. These first hand accounts will provide a frame of reference for the benefits of engaging in this style of music, as well as display that responsible realizations are attainable and musically valuable. Responses to these questions were collected from October to December of 2019, and all questions were answered by email, except for Steven Schick who was interviewed by phone. Answers are presented in their original format with any author additions given in square brackets. Discussion of participants' responses in the chapter is presented in regards to trends and general characteristics in answers. A complete transcript of all given responses is presented in Appendix B at the end of this document.

2.1 Participants' Biographical Information

Liam Hockley is a clarinetist residing in Vancouver, BC, Canada, and recently graduated from the University of British Columbia with a DMA in clarinet performance. Hockley has performed extensively throughout the world with a focus on contemporary music and the interpretation of avant-garde and virtuosic approaches to clarinet performance. He has performed at prestigious festivals such as Vancouver's Modulus festival, the KLANGRAUM in Düsseldorf, the Kuandu Arts Festival in Taipei, and the Stockhausen-Konzert und -Kurse Kürten, where he was awarded an interpretation prize. Hockley's rigorously thorough dissertation "Performing

Complexity: Theorizing Performer Agency in Complexist Music” helped inform much of my initial research into the history of complexist works and compositional tendencies.

Mieko Kanno is currently Professor in Artistic Doctoral Studies at the Sibelius Academy, University of Arts Helsinki. She first came to international attention when she won international prizes in competitions such as the Carl Flesch International Violin Competition, Queen Elisabeth of Belgium Competition, and Hannover-Joseph Joachim International Violin Competition. Also a champion of contemporary music, she received the Kranichsteiner Musikpreis at the Darmstadt New Music Institute in 1994. Since then she has been a prime exponent of new music for violin throughout Europe and given many premiere performances as soloist, as well as in ensembles. She is especially known for her pioneering work on subjects such as complex notation and microtonality, and her research ranges from performing on the Violectra electric violin and commissioning works for it, to a long-term project on John Cage’s *Freeman Etudes*.

Mark Takeshi McGregor is a world renowned flautist, and regarded as one of Canada’s leading interpreters of classical and contemporary music. He has served as flautist with the internationally lauded Aventa Ensemble for fourteen years, and has performed extensively throughout the world. McGregor maintains a busy performance schedule in the Vancouver, BC, Canada area and has collaborated with and/or premiered works by some of the world’s leading composers such as Björk, Heiner Goebbels, Phillipe Leroux and Barry Truax.

Steven Schick is a Distinguished Professor of Music at the University of California, San Diego, where he has taught some of the most influential and acclaimed percussion students in the world today. For over forty years, Mr. Schick has not only been a champion of contemporary percussion, but also, more generally, an advocate of contemporary music. Along with his

teaching at UCSD, he is also currently the music director of the La Jolla Symphony and Chorus, and artistic director of the San Francisco Contemporary Music Players. He has commissioned and/or premiered over one hundred and fifty new works by some of the most influential composers in recent history including Roger Reynolds, David Lang, and Brian Ferneyhough. Mr. Schick commissioned the writing of “Bone Alphabet” from Brian Ferneyhough, and his book, “The Percussionist’s Art” provides invaluable insight into his learning process of this work.

2.2 Initial Experiences

I began the questionnaire by asking each of the participants how they came to be interested in works of this style. Both Kanno and McGregor first began learning complexist works at the recommendation of their teachers at the time.

Kanno: I was a Masters student at York University (UK) and friends suggested that I might be interested in the repertoire. You may know Roger Marsh, who wrote a short polemic article about the notation used in New Complexity (published in 1994 in *Musical Times*); he was a good mentor to me and encouraged me to have a go at the repertoire.

McGregor: Like many flutists, the first piece of music I learned that could be seen as genuinely “New Complexity” was Brian Ferneyhough’s *Cassandra’s Dream Song* (1970). At the time I was studying with a teacher at the Sydney Conservatorium who had worked a fair bit with Ferneyhough, so I had a lot of excellent guidance.

Schick and Hockley came to the music either through professional engagements or colleagues.

Hockley: My first learning experience was with two of Ray Evanoff’s clarinet works: his clarinet and piano duo *All of the Inquiries I can Offer Right Now*, and the related solo piece *A Series of Postures (Clarinet)*. I had been hired by a festival to do a reading session of submitted works and, at the time, Ray’s pieces were the most specifically-notated and ‘complex’ works I had encountered.

Schick: On my first day as a faculty member at the University of California, San Diego, in 1991, I asked my new colleague Brian Ferneyhough to compose a percussion solo for me. The invitation was not as abrupt as it may sound. I had known Brian for years. We

met in 1982 when I was a student at the Staatliche Hochschule für Musik in Freiburg, Germany, where he was teaching composition [...] I was (and continue to be) very interested in Ferneyhough's music. The immediacy of percussive attacks and the possibility for creating a diverse and highly contrasted sound world seemed to make percussion a perfect medium to represent Ferneyhough's precise polyrhythmic language. Yet, he had not written a substantial work for percussion. (Schick, 2006: 90)

I also asked participants to share any learning methods unique to this style of music. Most of the answers showed similarities in that these performers were forced to find a methodology in which to familiarize themselves with the unique compositional style. Both McGregor and Hockley provided insight into not only how they interpreted and digested the compositional specificities, but also how they became comfortable with the unique appearance of these types of works.

McGregor: ... I still found the score visually daunting, so I photocopied it and actually taped it to the walls of my bedroom—the idea being that, if I surrounded myself with the score, I would eventually accept it as “normal.” After that, I began learning the piece in a fashion that was surprisingly similar to how I learn traditional music: essentially one bar or phrase at a time (though often quite a bit slower), left to right across the page. *Cassandra's Dream Song* has the added benefit of being very sectional (the material consists of short statements that are ultimately performed in an ordering of the performer's choosing), so the “bite sized” nature of the musical material made it easier to learn and absorb. It is, in my mind, an excellent introduction to New Complexity.

Hockley: Much of my learning process focused on developing and differentiating the very specific nuances (particularly with articulation) that Ray's (Evanoff) music calls for. Following the reading session, I worked more closely with him on his solo piece: in parsing through the detail of his work, I began to more clearly understand his artistic ethos and how the surplus of notated details in his scores was not idiosyncratic but instead indicative of a broader interest in physicality; that is, the physicality and athleticism of instrumental performance, and the actions of the hybrid performer/instrument body during performance. This pointed me towards a better understanding of the compositional approach—or at least one aspect of it—of many other so-called ‘complexist’ composers (like Richard Barrett, Timothy McCormack, and Aaron Cassidy, to name a few).

Schick has written previously on how he began to decipher the complex rhythms of “Bone Alphabet,” and the learning methods he found successful.

Schick: Eventually, several strategies emerged as means for solving polyrhythmic problems. These strategies involved: (1) solving polyrhythms by means of calculating the least common multiple of their constituent components, (2) translating rhythms into differences of tempo, and (3) identifying a primary line in each polyrhythm into which opposing rhythms could be folded. Very often a given bar of *Bone Alphabet* required a mixture of techniques. (Schick, 2006: 102)¹⁰

These methodologies, contrasting to methods utilized in more traditional musical pursuits, are employed in an effort to familiarize oneself with the unique complexist context. In the majority of these types of works, the performer is challenged with ‘outside the box’ compositional demands, and therefore must find a way to surmount technical hurdles, and prioritize what is viewed as pertinent (and achievable) compositional material. Although some unique preparatory methods were discussed, most of the participants did not approach the actual learning of the music differently than any other type of work:

Kanno: I don’t think there is anything very different from learning other pieces from the same period (the second half of the twentieth century). There are more challenges in the New Complexity repertoire but the challenges themselves are essentially not very different from the other repertoire, in my opinion.

McGregor: Whatever piece I’m playing, whether it’s Bach or Ferneyhough, I need to think of in musical/human terms: the imagery it evokes, its narrative, or (particularly with newer music) how the music might relate to sounds that occur in the real world. As far as *Cassandra’s Dream Song* was concerned, I found it really helpful to think of each phrase in terms of birdsong (and it helped to be in a city full of incredibly cacophonous birds!); it informed my phrasing, my articulation, and it stretched my technique in new directions. But it all remained within a very musical context, so the learning process

¹⁰ Schick has also discussed at length his method of laying measures out on graph paper in order to decipher polyrhythmic proportions (1994). I discuss this further in Chapter 3.

wasn't so much an issue of abandoning any previous musical knowledge, so much as dramatically expanding on it.

Hockley: I think probably the biggest development was a greater awareness of detail, especially in terms of articulation and pitch. Initially, the main challenge of the piece was finding the specific gradations called for within these parameters and then learning to reproduce them with consistency and immediacy.

While Kanno and McGregor liken the process of learning a complexist work to other repertoire, the answers also speak to the musical benefits the performer will see as a direct result of complexist experiences. While the learning curve is steep, and the scores themselves present an abundance of information to filter, the improvements upon technical abilities and interpretive decision-making are valuable in other musical endeavours as well. McGregor relates his complexist experience to other musical scenarios when he says it “stretched his technique in new directions,” while Hockley saw a “greater awareness of detail” and improved levels of “consistency.”

Although in the case of “Bone Alphabet,” Ferneyhough does not provide any specific advice for tackling the difficulties in the score, he has provided pathways for which to surmount challenges in some of his other works, such as is in this performance note for his piano solo, “Lemma-Icon-Epigram”:

An adequate interpretation of this work presupposes three distinct learning processes: 1) an overview of the (deliberately relatively direct) gestural patterning without regard to exactitude of detail in respect to rhythm; 2) a ‘de-learning’ in which the global structure are abandoned in favour of the concentration upon the rhythmic and expressive import of each individual note (as if the composition were an example of ‘punctualistic’ music); 3) the progressive reconstruction of the various gestural units established at the outset on the basis of the experience gained during the above two stages of preparation. (Ferneyhough, 1982)

This quote reflects some of the responses given by my interview participants. In regards to Ferneyhough's first given process, McGregor echoed this when he answered, "I learned to quickly identify those things that I want to bring out, and allow other strands of information to become secondary or tertiary, or in some cases ignored altogether." Hockley describes his manner of concentrating upon the "rhythmic and expressive import of each note" when he answered, "you often encounter pieces that require you to rethink your physical approach to the instrument, for example, which can be an uncomfortable place to be [...] it can be all too easy to slip into a mannerist improvisation based on the piece." Finally, nearly all of my participants spoke to similar experiences in continually re-examining (or to use Ferneyhough's terminology, progressively reconstructing) their learning methods and processes for working through both the technical aspects of the scores, as well as the gestural forms. This advice given by Ferneyhough is especially relevant to my learning methods utilized for "Bone Alphabet," which will be discussed further in chapter 3.

In regards to any alleviation of difficulty in the learning process for subsequent works, responses were quite contrasting, with participants stating that the process either became less difficult, more efficient, or neither of the two.

Hockley: My learning process has become more streamlined rather than "less difficult": since the compositional approaches that tend to fall under the 'new complexity' label are extremely diverse, every piece continues to present its own unique set of physical and musical difficulties. I find that the major difference now is that I have a much bigger and more effective toolkit for efficiently working through whatever challenges arise as I prepare the piece for performance.

McGregor: It was absolutely easier learning subsequent New Complexity pieces, primarily because one learns how to prioritize the excess of musical information. When faced with several lines of counterpoint (especially when playing a traditionally monodic instrument, like the flute), it becomes impossible to present everything that's on the page,

even when the music is as expertly written as Ferneyhough's. One of the most frustrating things about Ferneyhough's flute music in particular is that the composer is also a trained flutist, so pretty much everything he wrote in both *Cassandra's Dream Song* and *Unity Capsule* is, technically, physically possible to play.

Schick: Yes, absolutely. And you know it's ironic that I am talking to you now because I am relearning *Bone Alphabet* [...] And I really wanted to go back and rework it from the beginning, but I also wanted to forget it first. This is the longest break I have taken away from it, since 2014. So now I'm going back through it and the process is speeding up.

Kanno: Not necessarily. We do become more efficient but that's a minor part of learning this repertoire. I should also mention that the learning process varies between solo pieces and ensemble pieces, and whether conducted or not.

Again, participant's answers point to an expanded and "more effective toolkit" in not only subsequent complexist works, but in other musical pursuits as well. McGregor mentions the improved ability to "prioritize the excess of music information," a skill that will enhance the musician's interpretation and retention of less compositionally dense works.

Hockley and McGregor both also offered further insights into how their preparation and learning process were altered for subsequent pursuits.

Hockley: I've come to appreciate the value of an initial period of score study (away from the instrument) and have developed a pretty large and regimented set of annotations that I make to my scores to guide my initial work. I've found that this process vastly cuts down the time it takes me to learn a new piece as I'll already have a good understanding of the materials, formal dimensions, and technical challenges it presents before I begin to practice. Of course, I'm also now much more fluent in the musical language that many 'complexist' pieces tend to use but this isn't something that is directly tied to my experiences with complexism: the fluency I've developed with microtones, for example, came largely from learning Stockhausen's later works for clarinet and basset horn.

McGregor: The issue is that, as a human performer, one simply can't process all that information simultaneously. So now, when I perform music that is "complexist" in nature, I've learned to quickly identify those things that I want to bring out, and allow other strands of information to become secondary or tertiary, or in some cases ignored altogether. It's a necessary means of reducing physical and mental distress in the learning process, but one that also happily creates a diversity of interpretations: one can hear

wildly different performances of the same complexity piece, because each performer has created their own “priority parameters” through which they sift the surfeit information.

Hockley’s answer regarding a “regimented” set of annotations also speaks to the more streamlined learning process that accompanies subsequent complexist pursuits. McGregor, in his discussion of “priority parameters” and musical material that becomes “secondary or tertiary,” presents the same opinions as Frank Cox in his high-Modernist model of performance practice (2002). These scores do not present a clear path from composer to score to performer to audience, as we typically see in other musical contexts. Therefore, the performer is sometimes required to “prioritize” musical material based on interpretive choices and more individualized technical compromises.¹¹

The musical benefits cited by the participants thus far are summarized in the following table, divided into three areas of improvement.

Score study and preparation	Gains to technical facility	Other musical benefits
Unusual and dense compositional style requires new learning methodologies	Expansion of technical abilities from unique complexist demands	Improvements upon prior musical knowledge as a result of complexist experience
Forced slowness of learning due to compositional abundance	Greater awareness of compositional detail and specificities	Learn to prioritize excessive musical information, create one’s own “priority parameters”
Score study and annotations become consistent and regimented, “more effective toolkit”	More consistency and immediacy in technical execution	More streamlined and less difficult learning process in subsequent complexist endeavours

Table 2.1. Summary of musical benefits gained from preparatory stages of learning complexist works.

¹¹ I will further discuss the musical benefits of “prioritization” in Chapter 4.

These answers display uncommon demands and favourable results from the preparatory stages of learning a complexist work. This is a stage in the learning process that may not typically require as much thought from the musician in more traditional musical styles. However, these answers show that the special requirements inherent in a virtuosic work of complexism are indeed beneficial and applicable to other styles of music.

2.3 Performance and Subsequent Musical Benefits

Questions were also included about the special skills that may be required for learning and performing this style of music. In regards to any special skills needed, Kanno offered the following answer and further consideration based on the performer's primary instrument.

Kanno: As a violinist, I don't think it asks for any more special kinds of skills than those you need as a performer of the late twentieth century music. You may receive very different answers to this question, depending on which instrument the respondent plays.

Other participants offered insight into the kinds of challenges which arise in regards to the musician's patience and integrity.

McGregor: I would say there are three things needed to perform New Complexity music well: tenacity, patience, and a hint of masochism. The need for tenacity and patience is, I think, obvious, so I'll speak about masochism: as classical musicians we are trained from an early age to strive for perfection. New Complexity music, by its nature, guarantees that we will ultimately fail in our endeavour to present a "perfect" performance. In order to play this music well, one needs to accept the fact—and even revel in the fact—that all of one's efforts will be thwarted. And it's these performances, where a highly skilled musician willingly hurls themselves into an arena of insurmountable odds, that I find the most thrilling and visceral.

Hockley: There is definitely a certain level of technical capability and control that is needed, though it varies pretty widely from piece to piece. I think it's not so much a specific technical skill set rather than an artistic ethos: you often encounter pieces that

require you to rethink your physical approach to the instrument, for example, which can be an uncomfortable place to be. I think above all you need to be willing to challenge yourself in very unique ways. I also think that you need to have a fair amount of integrity to keep yourself accountable to the scores: it can be all too easy to slip into a mannerist improvisation based on the piece.

McGregor's comment about failing to produce a "perfect performance" reflects the earlier discussion of Frank Cox's high-Modernist model of performance practice (2002). Since there is not a clear and transparent chain from score to performer to audience within much of complexist music, an ideal or "perfect" realization is not always realistically attainable. This imposes upon the performer an integrity in both practice and performance to produce morally responsible interpretations of these works.¹² Hockley's response mirrors this sentiment, as he mentions integrity and keeping yourself "accountable to the scores."

Participants were asked to describe their mental and psychological state while performing this music, and whether or not their on-stage experiences were any different than in other musical contexts. Schick, Hockley and Kanno all offered similar responses.

Schick: Every piece I play informs a kind of pre-concert mindset. But I actually don't think that *Bone Alphabet* is the hardest piece that I play. It is not the piece that on a given concert I would think, if I get through this I'm ok. But the learning process is very different, being very difficult and time-consuming [...] But, for example, I think it is harder to play *Rebonds* [Iannis Xenakis] than it is to play *Bone Alphabet*, for reasons of pacing yourself and not getting yourself in trouble in *Rebonds B* [...] I remember looking at *Bone Alphabet* as the Mt. Everest of performance. In a weird way it is easier to play, once you've learned it, than some of the other repertoire.

Hockley: I don't find that I feel any differently performing complexist music than I do with any other type of music: my main goal is always to present as compelling a musical experience as possible.

Kanno: I don't think it is different from performing any other music, meaning that you focus on making something musical.

¹² I further discuss the pedagogical benefits of imposed integrity in the complexist context in Chapter 4.

McGregor offered a perspective contrasting to the other respondents.

McGregor: When performing New Complexity music, my mental state tends to be a weird balance of trauma and exhilaration. I have this sensation that I'm presenting a series of highly detailed images in rapid succession—a bit like a slideshow on super high speed. Often enough, you don't communicate an "image" as effectively as you might like—the speed, the adrenaline, the excitement of the moment inevitably causes you to stumble. But by that point it's way too late to do anything about it, because you're already onto the next image, and the next; there are these flashes of frustration when these "trip-up" moments occur, but you simply don't have enough time to over-dwell on it. And then there are times when it's on: you're capturing a tremendous amount of detail within an extraordinarily short amount of time, and are you're transmitting this detail with clarity and precision. And when this happens, it feels like you're surfing at high speed. It really is an adrenaline rush.

Complexism is a specialized musical context, with unusually high demands of the performer inherent in the learning process. However, most of the participants still approach this music the same way they would any other context. Although the learning curve is steep and may require uncommon preparatory methodologies, the learning process is still as musically beneficial as in other styles.

Finally, each participant was asked if they found that the skills acquired through their experience with complexist music, both in preparation and live performance, served them in other musical contexts. Most participants gave similar responses in regards to the amount of specificity and detail included in complexist scores.

Hockley: The process of learning and performing complexist works has prompted me to reconsider and refine many aspects of my technique. For example, in the works of composers who approach and develop the mechanisms of the body and instrument with a high level of specificity and nuance or decouple the actions of the mouth and hands altogether (as we find in various forms in the clarinet works of Aaron Cassidy, Evan Johnson, Timothy McCormack, and Ray Evanoff), I find that I am often required to isolate and develop very specific nuances within a mechanical element I had previously considered to be part of a single system: i.e. jaw pressure, the horizontal/vertical positioning of the instrument relative to the air pressure/speed, and so on. The work I

have done in this domain has fundamentally affected the ways in which I think about my instrument in other musical contexts and in terms of its historically-sedimented objecthood, but this shift in thinking is much more difficult to quantify.

McGregor: Performing contemporary music in general, I think, has made me a better musician. Coming back to older, more conventionally written music, I find I'm more creative in how I approach phrasing, tone colour, and (particularly) articulation, because my time with contemporary music has expanded these palettes. With regard to New Complexity specifically, it's unquestionably improved my rhythm and ensemble skills.

Schick: That is an interesting question and my answer is in a couple of parts. One would be the specific strategies regarding rhythm are broadly applicable. For example, the rhythmically difficult parts of Xenakis' *Dmaathen*. I went through those more easily than I would have had I not done *Bone Alphabet*. But, what I think actually is the defining lesson of a piece like that is that the learning process is naturally much slower. There is rarely a bar you can read. Everything has to be calculated and so it puts the performer's thinking process at a much more basic level of the piece than almost anything else. In other words, you have to really almost go at the speed of composition in order to learn this piece. And that is really interesting in the way, not so much how you decipher rhythms, but in the way you manage things like texture, and tone colour on the instrument. Nothing can be just played through, and you end up at a level of a kind of DNA of the piece that is much more basic than you could almost do with anything else.

These answers discuss many improvements to the musician's technical facility on their instrument as a result of working through the abundance of compositional material. Hockley discusses alterations to the way he "thinks about his technique" and the "mechanisms of playing the instrument itself," as a result of the radically idiomatic clarinet writing. McGregor plainly states that his experiences have made him "a better musician," "more creative," and have "improved my rhythm and ensemble skills." Schick also echoes this in his answer concerning rhythmic strategies being applicable in other complexist works. Then, he goes on to further discuss the benefits of the enforced slowness of learning that occurs with these works. This is almost solely unique to this style of composition and can be quite beneficial to the performer. It is also interesting how Schick mentions that in learning so slowly and attempting to filter or

“manage” all of the compositional aspects, one ends up actually learning these works at a more in-depth level than in some other musical contexts. In his words, you “end up at a level of a kind of DNA of the piece that is much more basic than you could almost do with anything else.” This is contrasting to the experience most might think a performer would have with the incredibly dense complexist compositional style. The slow and rigorous learning process, and increased attention to detail provides pedagogical benefits to the musician, as displayed in these interview responses.¹³ Kanno’s response was somewhat contrasting to the other interviewees, but did give insight into her experience with the amount of specificity utilized by complexist composers.

Kanno: Again, I don’t think there is anything markedly different from learning and performing the rest of the late-twentieth century music. One of the things I learned from working with the so-called New Complexity composers is that having more details on the page does not necessarily make musical ideas more precise; that it is just their way of expressing music.

2.4 Pedagogy

Music pedagogy and benefits to one’s musicianship are central to this thesis project. Therefore, some questions were included concerning the participant’s beliefs on students undertaking these challenges. Many of the responses indicated that participants felt students should approach this music the same way they do any other type of music. When asked for any advice they may give to a student before beginning this difficult learning process, responses were again similar in some ways.

Kanno: Learn it like any other piece of music, with patience.

Hockley: I’m not sure: probably to start slow. I’ve found that the learning process is really not so different between ‘complexist’ music and standard repertoire.

¹³ I will discuss this pedagogical benefit further in Chapter 4.

McGregor and Schick offered some specific insights for training.

McGregor: I feel, for the aspiring performer, New Complexity needs to be seen as an extension of the classical music tradition, not a reaction to it. The ability to play New Complexity well is entirely dependant on the rigorous training, discipline, and eye for detail that one learns when studying traditional classical music. The most thrilling performances are when a hyper-trained musician is locked in combat with a piece of music that is, to a large extent, hellbent on thwarting that musician. But if that hyper-training isn't in place, or at least being aspired to, then there isn't anything to thwart, and the whole point of the piece can be lost. On a couple occasions, university-level students have come to me, wanting to learn such-and-such New Complexity work, because they think that this music can somehow disguise their technical shortcomings—that they can successfully perform this music by simply “faking” it. Now, I won't lie: “faking” is a vital part of the New Complexity performer's toolbox, but it's one that we use as a final resort, when all other legitimate possibilities have been exhausted. But one can't approach this music with “faking” as the only item in their arsenal. New Complexity music needs to be approached and executed with the same intention, discipline, and respect one would give to, say, a particularly complex work of J.S. Bach.

Schick: My advice is not really about the details. But I would tell a student, or anybody, that the beneficial aspect to the conditions required of this piece is the enforced slowness of learning. By learning so slowly, you gain an enormous amount in terms of your understanding of all the other aspects of percussion playing. And what you would like to avoid, which is really hard to avoid because this piece sometimes feels like it takes forever, is that we should rush through things. The learning process gets faster as you build a platform for making decisions. And I would say in fact, that the right speed at which to learn this piece is just above the level at which you would stall out. So, really you can't slow down to the point where you don't make any progress and you lose speed. But, just before that point, that's about the right speed. Almost everybody learns it too quickly.

These answers display an inherent discipline in learning complexist works. Many of the necessary training methods reflect the methods discussed in Chapter 1 in regards to historical feats in other disciplines. Participants mentioned learning with “patience,” “starting slow,” “rigorous training...an eye for detail,” as well as an “enforced slowness of learning.” McGregor also mentioned “faking” these works, and that it is a “vital part of the New Complexity

performer's toolbox." Again, this is an idea almost solely specific to complexism. This style of music, and its "lack of competitive testability" (Cox, 2002: 9) by an audience, imposes upon the musician a candor in performance. This is not to say that "faking it" is not acceptable in this context, but that the performer must create their own priorities in learning and performance based on their own technical abilities, as well as what they strive to lucidly portray to the audience.

Following up on the previous question, I asked if there would be any criteria in deciding if a student was prepared to take on the challenge of one of these works. Hockley and Kanno either simply stated that an interest in the music, or the necessary level of technical facility were all that were required. McGregor offered a detailed response concerning potential repertoire with which to work through in preparation for the demands of complexist works.

McGregor: As far as the flute is concerned, there are several pieces that pave the way to New Complexity, and I would want to make sure that most or all of these pieces had been learned and absorbed beforehand: J.S. Bach's *Partita for solo flute in A minor*, because it demands stamina, creative interpretation and phrasing, and is an excellent early example of how composers channeled multiple lines of counterpoint through a single, monodic instrument; Claude Debussy's *Syrinx*, because it requires emotional subtlety, drama, and nuance; *Density 21.5* by Edgard Varèse, because it's the "anti-Syrinx," with its angular melodies, wide and unidiomatic leaps, and percussive effects; Luciano Berio's *Sequenza I*, because it builds on the Varèse and takes solo flute counterpoint to new extremes; *Le Merle noir* by Olivier Messiaen, because of its rhythmic complexity and ensemble challenges with the piano; and finally *Voice* by Toru Takemitsu, because of its handling of silence as a dramatic tool and a use of vocal effects that pushes nearly every flutist outside of their comfort zone. Once a student has lived with this music, I think I would consider Ferneyhough's *Cassandra's Dream Song* as a student's ideal "gateway drug" into the world of New Complexity.

This response not only discusses the myriad of necessary skills that the complexist performer must possess, but also further enforces that McGregor approaches this musical context as he would any other. He draws a line from J.S. Bach, to Debussy, to Varèse, to Berio, to Messiaen, to

Takemistu in a vast array of musical experiences and skillsets. However, Schick provided an answer contrasting to McGregor's opinion of working one's way up to the necessary technical level required in performing complexist works:

Schick: My feeling is if you possess the technique to begin with, if you can play with 4 mallets, I think you can play this piece. I've always objected to this about all the repertory, that you don't have to work your way up to *Bone Alphabet*. I think you should follow your passion and adrenaline and focus far more than anything like you should first play *Rebonds* and then play this. I don't believe in that for any repertory. What you need to learn *Bone Alphabet* is enough interest in the piece, enough discipline, and enough day-to-day satisfaction to sit in a practice room for 6 months and learn it. And that is actually unrelated to have you played the marimba repertory, or have you played this or that. I think those are the criteria.

Schick views this music as a pursuit for someone with enough passion and discipline to surmount the difficult and unique learning process. His views on "interest," "discipline," and "day-to-day satisfaction" all echo Hockley and Kanno's thoughts on the criteria necessary of the student.

One final question was included concerning the musical outcome of the challenging process of learning and performing music in this style, and how the participants felt about the amount of time it takes to prepare vs. the resulting performance. This was done both as a way to hear how interviewees felt about the live performance and experiential technical result of working through such virtuosic music, but also to include thoughts they may have about the various criticisms of the style. Kanno answers the question with advice to young composers in regards to the difficulty and time-consuming nature of complex works:

Kanno: May I answer your question by referencing my advice to young composers? Every time a composer puts in an extra irrational rhythm or unusual time signature, they have to be aware that they may have lost the possibility of some of the most talented performers performing the piece because of their not having time or resources (in terms

of ensemble rehearsals). They may be lucky to find performers who have interest in their music, time to learn it, and skills to perform it; or they may not.

McGregor provided insight into not only the compositional quality of the work itself, but also the commitment of the performer in their portrayal of the work.

McGregor: I think it's difficult to judge effort versus outcome with New Complexity because there are so many variables at play: first and foremost, the quality of the work itself. A well-written work is more likely to engage its performers and ensure a committed performance and (hopefully) a positive audience reception—and of course, a poorly written work will be more difficult to communicate effectively. One is also dependent on the commitment of the performers themselves, to an extent that exceeds the needs of traditional classical music, or even other types of contemporary music; a performance of a work of New Complexity can be entirely undone by a single musician who doesn't "buy in" to the music or the effort required to play it well. I suppose the best thing I could say to critics of New Complexity is to seek out performances of music by truly great composers of the genre (in my opinion: Ferneyhough, Finnissy, Dillon, Czernowin, Barrett), performed by truly committed interpreters, before passing final judgement.

Hockley and Schick both offered responses comparing the value of the opinions of "critics" vs. the opinions of the performer and the audience themselves:

Hockley: In my experience, some of the most enthusiastic responses I've received to complexist music has been from individuals with little or no formal musical training, while the strongest criticisms have come from other (primarily classically trained) musicians. I think that this is an indictment of our current music education systems, which more often than not prioritize a conservative and antiquated view of performance and expression. Music that challenges this dominate mode of thinking tends to be marginalized and maligned by musicians unwilling—or unable—to stretch their aesthetic boundaries beyond the comfortable and emotionally immediate.

Schick: One of the responses I got in the early days, and I got a lot of them, was he could have written it more simply [...] Could you come to something that sounds kind of like *Bone Alphabet* [if written more simply], yeah of course you could. But, then that's not *Bone Alphabet* [...] Now, are audiences prepared to hear this music? I have no idea. For some audiences this is old stuff, and they've been there and done that. When people say 'audiences' they often have a certain kind of audience or person in mind. And if you're talking about a mainstream audience, they probably won't overly respond to that. But

that's ok [...] What I need late at night when I'm reading in the living room is very different from what I need at 8 o'clock on a Saturday night at a concert.

The responses of each of these participants reflect many similar experiences throughout the complexist process, such as an initial familiarization stage with unusual scores, increased technical facility on their respective instruments and a wider range of interpretational freedom in other musical contexts. Examples of uncommon preparatory methodologies were discussed, such as the use of graph paper to decipher complex rhythms, taping the pages of a score to one's bedroom walls, or the development of "priority parameters" throughout the learning process. There were also similarities in the ways their respective preparatory and learning processes were affected following the initial experiences with the style. Some detailed more heightened and rigorous score study in the initial work stages, such as developing a "large and regimented set of [score] annotations," while others saw a "streamlined" learning process that was "absolutely easier" for subsequent musical pursuits. All participants still approached the learning and presentation of this music as they would any other type of work, "in musical/human terms," or not any "different than from learning other pieces of the same period." Participants gave an unanimous response regarding the level of necessary training and discipline to execute music of this style. However, the four interviewees approached the live performance of this music (and described their mental and physical state) in the same manner as other types of works. Finally, from a pedagogical point of view, participants would advise students to "start slow" in their learning process, and work "rigorously," with the same "discipline, and eye for detail" utilized when learning more traditional classical music. While many of these answers may seem obvious to the student of this style of music, the personal and introspective accounts in both learning and

performance help to shed further light into the pragmatic and beneficial nature of complexist works.

Chapter 3. Brian Ferneyhough’s “Bone Alphabet”

In this chapter, I will detail my methods used for learning Brian Ferneyhough’s “Bone Alphabet.” I mirror many of the practical approaches presented in Chapter 1 by performers such as Redgate and Schick, and will also include some of my own approaches to tackling various technical hurdles. The chapter is divided into three sections—the first deals with preparatory actions that need to be completed before beginning work on learning the score; the second addresses specific technical difficulties throughout, and my modes of overcoming these challenges; the third discusses more broad issues such as interpretation of form, expressive text, and priority parameters.

3.1 Preparatory Stage

Brian Ferneyhough’s “Bone Alphabet” (1992) is a solo percussion work which, upon first glance, seems to require virtuosity at a mind-boggling level. However, once you look past the daunting appearance of the score, it becomes apparent that a realization is in fact attainable to those willing to put in the time and effort. I first learned this work in 2014, performed it a handful of times, then did not revisit it until the beginnings of this thesis project. I have fond memories of both my learning process and performances, and have once again enjoyed this substantial undertaking. The initial learning process was quite intellectually challenging and foreign to my typical experience with other solo percussion works. The graphing and deciphering of each measure was sometimes extremely slow-moving, with an exponential learning curve as I progressed through the work. Once learned, the performances were full of emotion and power—much of which were a product of the speed at which the compositional material progresses.

However, the appearance of the score, the time it takes to properly learn, and the high level of difficulty deters many percussionists from attempting to learn this work.

At the time of writing this document (Winter, 2019) there are only thirteen video performance examples of “Bone Alphabet” on YouTube, as well as a few audio recordings scattered across various listening platforms. This is a relatively small number when compared to other works of the same period, such as the over one hundred video recordings of Iannis Xenakis’ “Rebonds.” In the twelve years since I first began my undergraduate study in percussion performance, I have only had two colleagues take on and perform this particular piece. Beyond Schick’s two publications discussing his work on the piece, I could find only one other scholarly source on “Bone Alphabet” specifically (Karre, 2012). So, to say the least, both “Bone Alphabet” and the rest of Ferneyhough’s catalogue are seldomly performed relative to other works in the contemporary canon.

Ferneyhough gives concise and simple setup guidelines at the beginning of the score:

Seven sound sources are to be selected (...) These instruments may be of different types (...) but must share closely similar envelope characteristics i.e. sharp attack, rapid decay and a broadly similar dynamic spectrum (...) In addition, no two adjacent instruments may belong to the same family. (Ferneyhough, 1992: 3)

Each instrument is given a separate line of a seven-line stave, and sonorities are ordered from high to low. Beyond these simple pre-requisites, all other choices are left to the performer.

Schick argues that due to the abundance of compositional material and incredibly fast rhythms within the work, this freedom of choice is largely illusory:

The number of possible instrumental configurations which satisfied the rhythmic and textural conditions of the score and which did not at the same time pose insoluble performance problems was very limited indeed. (Schick, 1994: 136)

I took heed of this advice, and the truth behind Schick’s argument quickly presented itself once beginning work on the score. Some of the rhythms go by so quickly that any one sound source that does not blend homogeneously with the rest dominates the spectrum immediately. As well, “kaleidoscopic” dynamic waves (to borrow a term used by Ferneyhough in the opening notes of the score) require a consistency in sound as they continually rise and fall—an outcome that is not possible without an appropriately chosen menagerie of sounds. My choice of instruments resulted in something similar to Schick’s original choices:

1. Small hi-hat
2. High bongo
3. Medium brake drum
4. Low bongo
5. Low granite block
6. Low cowbell
7. Low conga



Figure 3.1. Aaron Graham’s instrument setup for Brian Ferneyhough’s “Bone Alphabet.”

I chose small instruments that have similar amounts of resonance and decay. This would ensure a homogenous blend throughout the myriad of dynamics, so no single instrument would dominate the spectrum.

Once I had a group of instruments chosen that would appropriately convey the sonic material, I next had to choose mallets which would also produce the desired results. Due to the non-stop whirlwind of rhythmic material, there is no moment in the piece where the performer may switch mallets, so one group of four identical mallets must suffice. Regarding mallet choice, Schick writes:

I usually hold soft sticks as my outside left and inside right mallets and hard sticks as the inside left and outside right mallets. Since, with my technique at least, inside mallets are more dexterous while outside mallets have greater force this distribution assures parity of both strength and maneuverability between hard and soft sticks. (Schick, 2006: 99).

Contrary to Schick's choosing of mallets which are graduated in hardness, I chose to utilize four mallets of the same gradation of hardness. As I worked through the various gestures and rhythms in the score, I was forced to incorporate cross-stickings and numerous different voicings (especially when quadruple-stops are required of the performer). Therefore, having four of the same mallet seemed to alleviate some of the sticking choices I would have been required to make if I had four mallets of varying hardness. The mallets I settled with at the time of this study are Innovative Percussion, Anders Astrand model AA35. These contain a dense and hard core wrapped in yarn, which is ideal to execute not only the very loud and pointed sections of the work, but also the softer portions. Other models that fit these characteristics are the Freer Percussion KXS mallets, or the Mike Balter hard yellow mallets.

As I began work on the piece, I chose to transfer each measure onto a piece of graph paper in order to decipher the abundance of complex rhythms, a method detailed by Schick (1994), and one I had seen utilized by my colleagues who took on this work. While there was a steep learning curve at first, and my graphing methods initially took quite some time, I began to move through the process more quickly. Schick has discussed that this graphing process is a means of “solving polyrhythms by means of calculating the least common multiple of their constituent components” (Schick, 1994: 137). This not only allows for a clearer view of the relative speeds and durations of these polyrhythms, but to also see further aspects which help to execute them, such as when certain notes line up together, and the order of relatively closely written notes. For example, Figure 3.2 presents a measure from the “Bone Alphabet” score, while Figure 3.3 presents my graphed out version of the measure.



Figure 3.2. Measure 38 from Brian Ferneyhough’s “Bone Alphabet.”

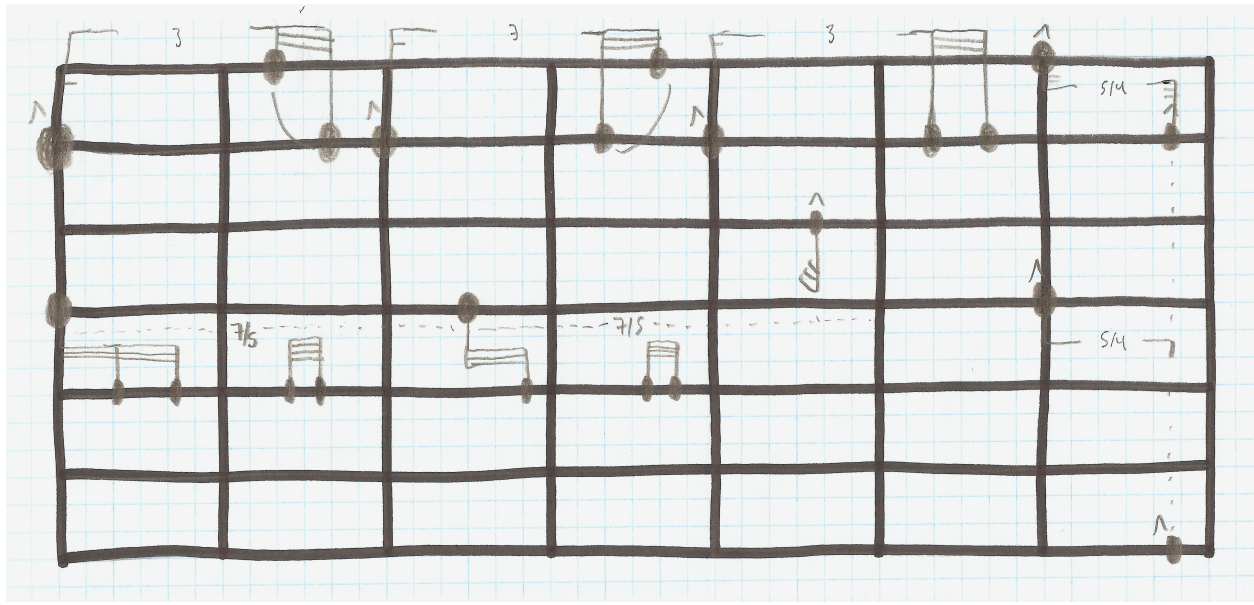


Figure 3.3. Rhythmic Graphing of measure 38 from Brian Ferneyhough's "Bone Alphabet."

Using Schick's method of finding the 'lowest common multiple' of the various polyrhythms, you multiply the ratios together to find the lowest common denominator among them, such as you would with fractions. The complex nested rhythms in this measure are not conducive to this method, as the lowest common denominator of the rhythms included would be an incredibly large number. Every sixteenth note pulse of the measure would have to be divided into over two hundred increments, resulting in an incredibly minute division that no human performer could consistently and accurately comprehend. However, the graph does provide a more practical approximation as to where the notes should land in relation to pulse durations throughout the measure. The original notation does not always clearly illustrate the order of successive notes, when certain notes line up together, or certain contrapuntal lines that should sound fluid and independent of one another. Reading m. 38 from the score, it is slightly

ambiguous as to where exactly the sixty-fourth notes within the 7:5 polyrhythm land in relation to the thirty-second notes in the triplet line at the top of the stave. After laying it out on a graph, not only the order of successive notes becomes much clearer, but also the proportional distances with which they are separated. This method of beginning with a graph alleviates much of the difficulty in learning complex rhythms, as opposed to simply trying to decipher the score by itself.

Once able to execute each measure at a slow tempo while reading from a graph, I made sure to proceed to reading the score as quickly as possible, as I did not want to get too comfortable with the graphed version of each measure. It would be too cumbersome and logistically unrealistic to perform the work while reading an entire page for each measure. My first time learning the work, the transition from reading graphs to reading the score turned out to be an unforeseen hurdle in the beginning stages. I learned the first few pages of the score by creating a graph of every measure, with multiple graphs surrounding my setup. Once a measure was learned, it normally took at least two to three practice sessions to transition from reading each graph to reading from the score. Once aware of this challenge, I began to move much quicker through the process. When working through such dense material which may require graphing of measures, the performer can eliminate any impediment such as this by transitioning from reading graphs to reading the score as quickly as possible.

As a strategy for retaining the intricate knowledge of each graph when shifting to reading from the score, I expanded upon Schick's original process and devised a method of implementing various coloured lines within the score. Different colours were chosen to serve as reminders in regards to aspects such as pulse within each measure, the occurrence of double-

stops, as well as abrupt dynamic and rhythmic changes. This served to mitigate the difficulty in reading the unfamiliar appearance of the score. Figure 3.4 presents an excerpt of mm. 31-38 from the score. One of the initial concerns was that I would be able to feel a clear metronomic pulse when performing the work (and its frequent tempi changes), even if it may not be perceived by a listening audience. As mentioned in Chapter 1, one of the criticisms of this style of music is that the incredibly complex rhythms end up feeling like an ambiguous, improvised flurry of notes and pitches. Therefore, the first added layer of colour was a yellow line indicating the position of each pulse within each measure divided into sixteenth-note durations (see Figure 3.5). The pulse of the measure is now much clearer, and much easier to follow when playing.

The next layer of colour (red; see Figure 3.6) was added to simply show when certain notes line up with each other. This is not always clearly illustrated in the score, and when deciphering and attempting to learn up to four lines of very fast-moving polyphony, it is essential to know when your mallets should be synchronized. Figure 3.6 now shows the excerpt with the yellow lines indicating pulse and red lines indicating mallet synchronizations.

Following the first two main layers of colour, one further layer was employed (blue; see Figure 3.7) as a reminder of more formal aspects of the work such as the ends of double-barred sections, contrapuntal lines that were connected across bar lines, as well as dynamic changes that seemed to continually surprise me in run-throughs of the piece. After including those additional annotations, and translating all of the expressive text from Italian to English as a reminder of the intended mood for each section, preparations of the score were complete. While at first glance this may seem like a lot of information to decipher, it actually helped me remember all of the intricacies instilled when learning each graphed-out measure. This process was slow at first but

31

32

33

34

35

36

37

38

Dynamic markings: *(ppp)*, *mpz*, *pp*, *mfz*, *p*, *pppp*, *pochiss.*, *p*, *mp*, *pp*, *mpz*, *ppp*, *mfz p*, *mfzpp*, *ffff*, *ff*, *sfz p*, *niente*, *mp*, *f*, *sfz*, *mf*, *mp*, *sfz*, *sfz*.

Tempo markings: *rall. sempre*, *convulsivo*.

Other markings: *calmo e legato*, *sub.*, *5:4*, *6:5*, *7:5*, *5:3*, *8:7*, *17:16*.

Figure 3.5. Measures 31-38 from Brian Ferneyhough's "Bone Alphabet" with added yellow lines to indicate the sixteenth-note pulse.

31

(ppp) mpz pp mfz pp p pppp *pochiss.* p mp pp ppp mfz p mfzpp

33

fff *convulsivo* fff pppp pp *niente* ff sffz p *calmo e legato* ff pp p mp pp ff

36

fff mf ff f fff sffz f sffz mf mfz mp sffz sffz

Figure 3.6. Measures 31-38 from Brian Ferneyhough's "Bone Alphabet" with added yellow lines to indicate the sixteenth-note pulse and red lines to indicate mallet synchronizations.

got much faster as I moved through the work, which also reflects sentiments expressed by the interview participants in Chapter 2.

Finally, a potential preparatory method is to produce a synthesized MIDI recording as a reference for rhythmic accuracy. This strategy has not been discussed much in the literature, and one that does not seem to be utilized by performers either as a means of producing a reference for an entire complexist work. In my opinion, this method would be contradictory to the nature of the complexist style, and the intention of these composers. As discussed in Chapter 1, Ferneyhough and Finnissy describe their intentions that performers act as interpreters of the mass of written material, and that a perfect, rhythmically accurate result is not the goal. Nicholas Cook describes this as a dichotomy between “the reproduction-based approach of Cox’s HMMPP [high modernist model of performance practice] and a way of thinking that is definitive of what I shall call the culture of complexity” (Cook, 2013: 280). This conflict between the intended results of a complexist work and the enormous amount of time it would take to produce such synthetically-produced MIDI reference recordings may be why it seems that this avenue is not utilized more often.

3.2 Technical Difficulties

In this section I will detail some of the specific technical challenges faced when working through the score. Although Schick presented several learning methods in his work, I will provide analysis for several specialized techniques that expand the tool set originally presented by Schick. Many of the obstacles unique to complexism would not typically be faced in other

percussion works. However, the experience of working through these demands can be beneficial to the musician, as will be further illustrated in Chapter 4.

The first difficulty faced was the incredibly virtuosic rhythms in the score. While many measures involve only one or two contrapuntal lines, some of the more dense measures utilize up to four lines of polyphony and take much more practice to comprehend and execute. Furthermore, the various moving lines of counterpoint typically involve irrational rhythms moving at contrasting tempi simultaneously. I found three methods that worked well in achieving these rhythmic predicaments: 1) learning one contrapuntal line then ‘building’ another on top; 2) simultaneously attempting all notes of all contrapuntal lines; 3) starting with an approximation of one line of counterpoint against another. The first strategy was to ‘build’ one polyrhythm on top of the other when only dealing with two (or sometimes three) lines of counterpoint. The second measure of the piece (see Figure 3.8) is an ideal example of this, as it includes two lines of counterpoint that are not metrically related to each other, and only line up with each other on the downbeat of the measure.



Figure 3.8. Measure 2 from Brian Ferneyhough's "Bone Alphabet."

Video 1 is a video example of my ‘building’ process for learning the second measure, played at a slow tempo of thirty beats per minute per eighth-note. For measures of this nature it is not too difficult to realize and play one of these contrapuntal lines alone, as shown at the beginning of the video. Metronomic goal points for each of these lines further ensure a comfortable performance. For example, in m. 2, the second group of the two groups of 6:7 rhythms in the bottom line starts on the end of beat two. When first learning and attempting to learn this portion, this point in the measure will serve as a metronomic marker (or ‘goal’) for proper rhythmic positioning. Then, once comfortable with one of the contrapuntal lines, I add one note at a time of the other line, not moving on to the next note until comfortable with the added note. I found that this method allowed me to get through the process of learning measures much quicker than starting at the beginning of the measure with both lines of counterpoint and adding notes from all lines simultaneously from the start of the measure to the end. This is demonstrated in Video 1, one note added at a time, until the entire measure is realized. This learning method is one which contrasts with the initial processes Schick described in his work.

When dealing with measures that involve more than two lines of counterpoint, the “building” method was useful (building one line on top of another, then adding another, then another, etc.) but sometimes it made more sense to start at the beginning of the measure and simultaneously add all notes of all lines at the same time. This was the case for measures where sticking conflicts may have arisen when learning one line at a time, or where there was simply too much material to accurately build one line of counterpoint at a time. An example of this is found in m. 9 (see Figure 3.9), which was (and still is) one of the most difficult measures in the score to wholly comprehend and execute.



Figure 3.9. Measure 9 from Brian Ferneyhough's "Bone Alphabet."

While you could utilize the building method with one contrapuntal line at a time (out of the four included in this measure), I was more successful working from the start of the measure to the end and adding one note at a time from all lines. If attempting to build one line on top of the other, choices regarding which mallet to use to play each added note would have to be altered many times throughout the learning process as more and more lines of counterpoint were introduced. This would add unnecessary time and re-evaluations during the learning process. The only added difficulty with learning all notes of all contrapuntal lines simultaneously vs. building one line on top of the other is maintaining the dynamic shape throughout the measure. For example, once you get far enough into the measure to add the 8:9 thirty-second notes and the 5:4 sixteenth-notes, you have to ensure that the 8:9 segment remains *forte* while the 5:4 segment starts *piano* and crescendos throughout. Managing these dynamic specificities is more of a

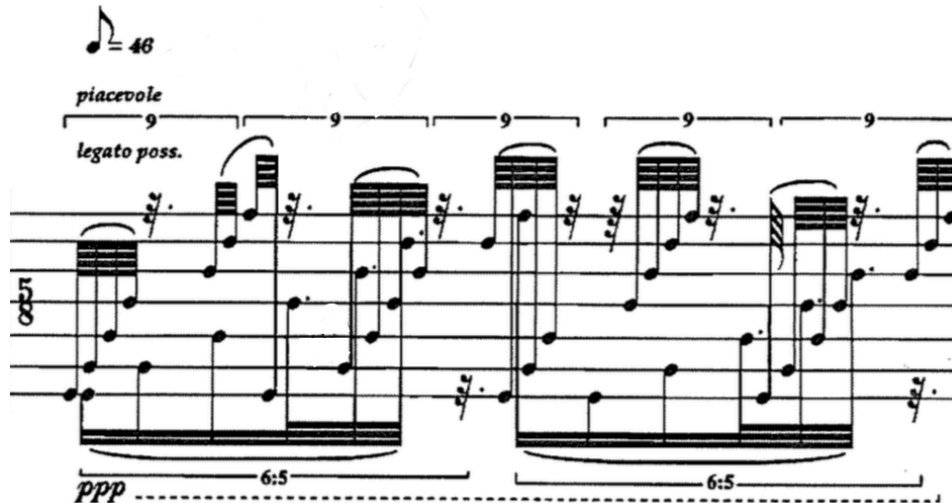


Figure 3.10. Measure 82 from Brian Ferneyhough's "Bone Alphabet."

challenge when taking on all notes of all lines of counterpoint at once, and must be securely learned.

When tackling polyrhythms of this difficulty, in many instances it requires a kind of approximation of one line against the other at first, with further practice until they become fluid and rhythmically steady. This is one of the strategies Schick detailed in his initial learning of the work (see page 39). In trying to achieve a steady polyrhythmic pulse, a common strategy is knowing how to position the middle note of a polyrhythmic grouping in relation to the metronome pulse it crosses over.

Figure 3.10 presents an instance where this strategy becomes useful. The grouping of nine sixty-fourth notes over an eighth-note pulse is not one we encounter too often. Before first attempting this line, I realized from my graph that if my metronome is set at a sixteenth-note pulse, the fifth note of each group of nine sixty-fourth notes will land directly before the sixteenth-note metronome pulse that dissects each group of nine. This observation allowed me to

realize the polyrhythm much quicker than if I had started with a more approximated speed and worked from there. Also knowing this, it is easier to realize where the broken rhythms in these groupings of nine will start and stop, such as in beats two, three, and four of the measure. This dividing of polyrhythmic groupings relative to a metronome pulse is an incredibly useful tool when first attempting these rhythms.

Once secure with the rhythmic struggles of the work, I was next faced with how to execute the abundance of articulations and percussion-specific techniques such as rolls, drags and flams within a dense and rapidly moving context. The first instance of a significant number of articulations occurs in m. 3, with all notes of the bottom contrapuntal line marked as staccato. These are not to be played as “dead” or muffled strokes because Ferneyhough uses a special notation for dead strokes that occur later in the piece and the two should not be confused (Ferneyhough, 1992: 3). However, depending on your selection of instruments, choosing a different spot on the instrument to play (such as closer to the edge) may affect the tone in a way that causes it to sound slightly more *staccato* or *legato*. In measures where the materials are less dense and the performer is able to accurately choose specific playing spots on the instruments, this could be a viable option in executing at least some of the articulation specificities. In regards to the instruments I have chosen, I am able to play closer to the rim of the conga and bongos in order to produce a slightly more staccato sound.

Beyond the challenging rhythms and articulations present in the work, there are many techniques that are not typical throughout the rest of the percussion repertoire. These specialized techniques, such as short independent rolls, rapid mordents and a myriad of grace note combinations, are unique to this context. The first instance of a notated roll in the work is in m.

6 on the lowest line of the staff (see Figure 3.11).

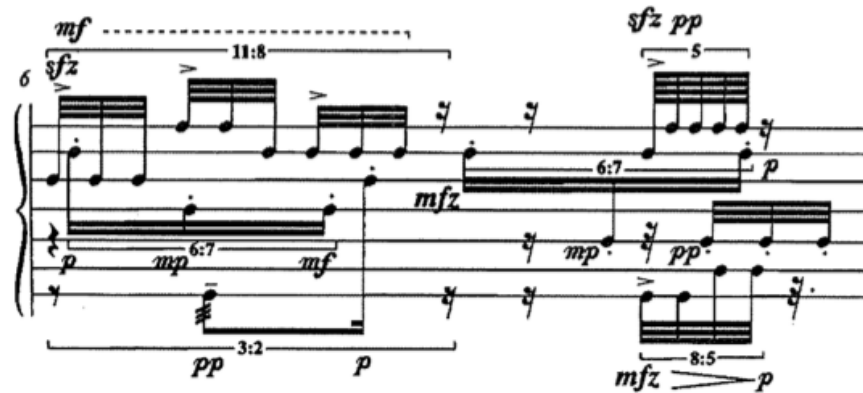


Figure 3.11. Measure 6 from Brian Ferneyhough's "Bone Alphabet."

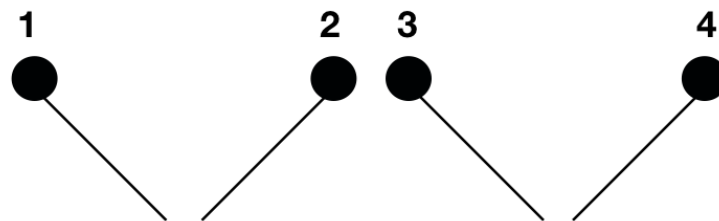


Figure 3.12. Illustration of numbering of mallets in four-mallet percussion grip.

This roll is of a somewhat short duration, and has multiple other contrapuntal lines happening simultaneously, so it would be quite challenging to perform with an alternating left hand to right hand single stroke roll (the kind of roll we would utilize for most written rolls, excepting when they are specifically notated as buzz rolls).

Figure 3.12 illustrates a typical numbering system used in the four-mallet percussion grip. We would typically perform a single stroke roll between either mallets one and three, one and four, two and three, or two and four. However, due to the multiple simultaneously-occurring lines

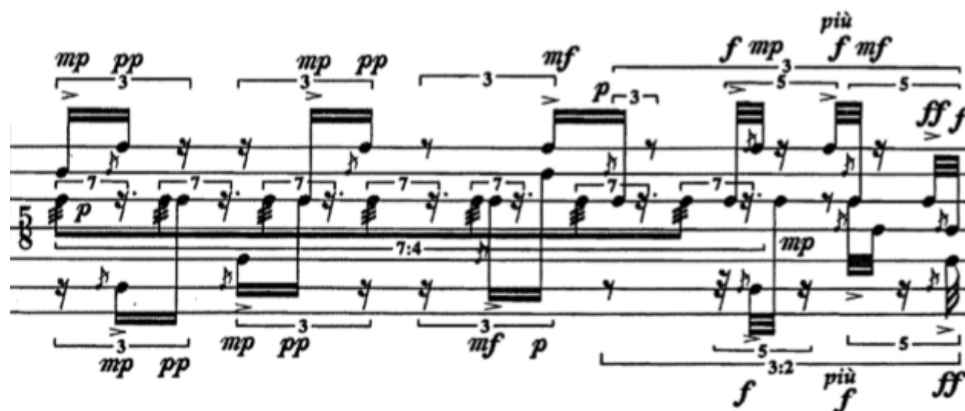


Figure 3.13. Measure 14 from Brian Ferneyhough's "Bone Alphabet."

of counterpoint, this roll would be most successfully achieved with a one-handed roll between either mallets one and two, or three and four. This type of roll is similar to the one-handed roll used when playing four-mallet keyboard percussion instruments, although most of the rolls in "Bone Alphabet" are quite short in duration. Due to the plethora of short rolls throughout the work, I was forced to develop a type of one-handed roll technique that contrasts with how the percussionist would typically play one-handed rolls on keyboard instruments. In order to execute these short rolls, I perform the one-handed roll as a quick burst or flurry of notes (approximately four to six strokes executed as quickly as possible) that was more of an uncontrolled twitch of my wrist, rather than the typical controlled back and forth stroke we utilize with keyboard instrument one-handed rolls. Famed marimbist Leigh Howard Stevens uses the term "Independent Roll" to describe this more typical type of controlled roll stroke in his seminal method book "Method of Movement for Marimba" (Stevens, 1980: 30). Figure 3.13 presents another example of many short rolls occurring in m. 14 on the third instrument line from the top.



Figure 3.14. Measure 24 from Brian Ferneyhough's "Bone Alphabet."

Accompanying this figure is a video demonstration of first the short one-handed roll technique, then the rolls within the context of this measure (see Video 2).

Notated trills throughout the work are another example of when the short one-handed roll technique is beneficial (see Figure 3.14). Simply utilizing the same technique, but alternating between two instruments with a one-handed roll achieves the same effect as the shorter roll bursts. The use of a very quick and short independent roll stroke is also beneficial when executing the flams and drags. A flam is a note that contains one grace note, while a drag can contain two or more grace notes. Figure 3.15 presents mm. 47 and 48 which include lines of

Figure 3.15. Measures 47 and 48 from Brian Ferneyhough's "Bone Alphabet."

counterpoint involving multiple flams occurring simultaneously with other contrapuntal lines. It would be quite difficult to execute these using both hands (one hand playing the grace note of a flam while the other plays the main note), while a one-handed flam becomes much more achievable. This is a common technique, with many appearances throughout the percussion canon. Stevens calls this quick succession of two notes, both played by mallets in the same hand, a “Double Lateral Stroke” (35). The same one-handed technique can be applied to drags and other grace notes throughout the work (see Figure 3.16). Just as with flams, the drag grace notes in this measure may be easier to execute with one hand, rather than with an alternating hand to hand pattern.

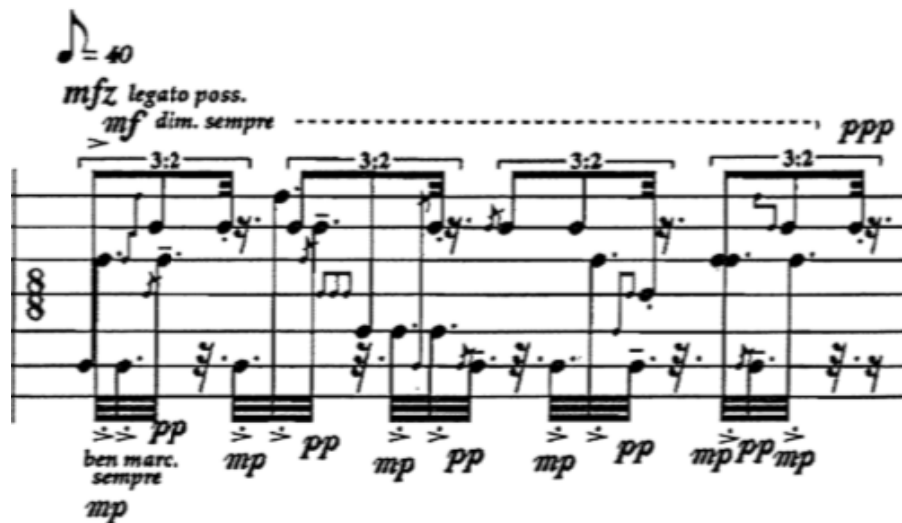


Figure 3.16. Measure 65 from Brian Ferneyhough’s “Bone Alphabet.”

While this one-handed technique does become quite useful (and required) throughout much of the work, there are still plenty of examples where the more typical alternating single stroke roll is most appropriate (see Figure 3.17).

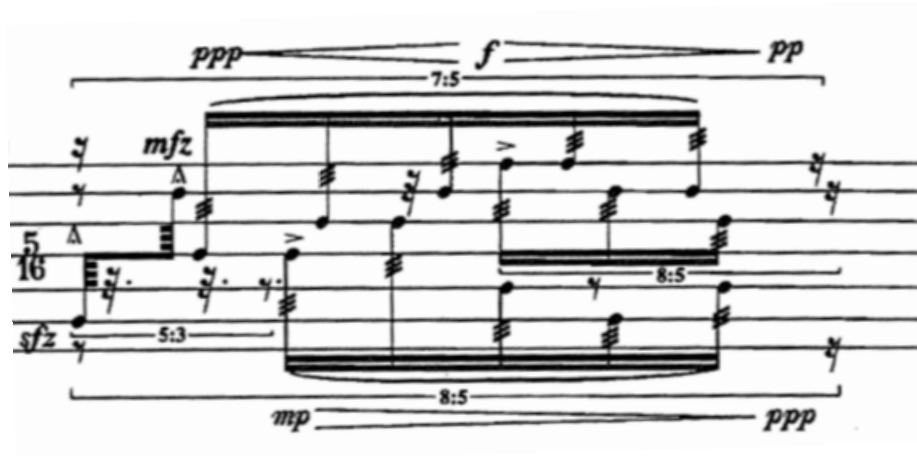


Figure 3.17. Measure 17 from Brian Ferneyhough's "Bone Alphabet."

Figure 3.18 presents the first occurrence of a mordent in the piece.

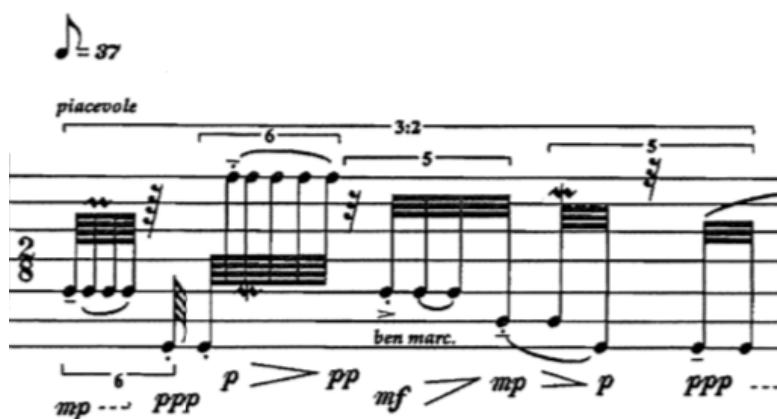


Figure 3.18. Measure 27 from Brian Ferneyhough's "Bone Alphabet."

While this is a typical Baroque-era embellishment technique for many other instruments, it is not commonly applied to percussion instruments (other than in transcriptions of Baroque-era music).

In order to execute the mordents and inverted mordents at the rapid tempi required throughout the work, some sticking patterns were more successful than others. Rather than play these embellishments as a fast alternation between each hand (such as between mallets two and three

—as in two-three-two or three-two-three), utilizing a single beginning stroke followed by a double lateral stroke would allow for a much faster execution. For example, if a mordent is to be performed on instrument two (a quick alternation between instrument two and one), one can start with the left hand, either mallet one or two, then complete both the remaining two notes of the mordent with the left hand—either with mallets three then four, or four then three, depending of the positioning of instruments in the setup (see Figure 3.19).



Figure 3.19. Notated mordent and possible sticking patterns which utilize a combination of a single stroke and double lateral stroke.

This use of the double lateral stroke was much quicker and easier to implement within a fast-moving rhythmic line than the previously mentioned single stroke hand to hand technique. As well, this sticking technique could be inverted for mordents. The initial note would be performed with the left hand with the first note being played with either mallet three or four, then the remaining two notes being played with either mallet one then two, or two then one. Video 3 presents a video demonstration of these possible sticking patterns for mordents and inverted mordents, followed by the pattern itself within the context of m. 27.

3.3 Interpretive Issues

Once comfortable executing the rhythmic and technical aspects of the work, I was faced with the dilemma of interpreting further musical aspects such as: 1) the overall formal elements of the piece, 2) how to convey the plentiful expressive text provided by Ferneyhough in the score, 3) how to present this whirlwind of compositional abundance in a cohesive manner to a listening audience.

The first interpretive choice I had to make was selecting when to bring certain contrapuntal lines to the forefront of the sonic space, and how to do that in a manner that could be perceived by an audience. Ross Karre describes his outlook for navigating the denseness of this score as viewing it as one would a road map:

The performer must establish a hierarchical structure of decisions that aid in the translation of the score into sound. Establishing this hierarchy is very challenging when the performer only has the feature-rich topographical map to navigate. How can one decide on which feature or element to focus? (Karre, 2012: 38)

This idea of establishing a hierarchy reflects many of the interview responses from Chapter 2 and how each performer created their own set of “priority parameters” (see page 41). Schick described a similar technique in his learning of the piece as “casting one line of a polyrhythm as strongly foreground in nature against which other rhythmic lines act ornamentally in varying degrees of rhythmic dissonance to the original” (Schick, 1994: 137). Ferneyhough describes the form of “Bone Alphabet” in the following way:

Thirteen ‘compartmental areas’ of starkly contrasted textural quality and developmental technique are defined and, in a subsequent operation, kaleidoscopically redistributed. As a result, the overall flow is characterized by a preponderance of sudden, sharp contrasts and unpredictable changes of direction. (Ferneyhough, 1992: 3)

This quote illuminates how the form of this work, with its “sudden, sharp contrasts,” presents an unusual challenge for the performer in regards to portraying the disjointed nature to an audience. These compartmental areas and their subsequent variations are marked off with double bar lines throughout the score. Therefore, I strove to perform each double barred section as cohesively as possible. This was sometimes achieved by bringing certain contrapuntal lines to the foreground, as Schick describes it, which seemed to serve as a kind of melodic through line. An excerpt of one of these double barred sections is presented in Figure 3.20.



Figure 3.20. Measures 113-115 from Brian Ferneyhough’s “Bone Alphabet.”

The various permutations of a 5:3 polyrhythm (nested within other polyrhythmic ratios) is a recurring theme of this brief section. In order for the structure of the segment to be audible, this contrapuntal line must not only be clearly heard within the rhythmic accompaniment (just as a pianist might bring out a melody above an accompaniment figure), but also an attempt must be made to connect one measure to the next through this rhythmic voice. Other examples

throughout the work also present the opportunity to employ an aspect of Ferneyhough’s advice for learning complexist music. In instances such as these I am focusing more on the “gestural patterning” rather than various other specificities (see page 40). To achieve this result, I chose to add a small amount of extra emphasis on the 5:3 rhythm at the end of m. 114 (where it is also nested within other polyrhythmic ratios), as well as on the first nested 5:3 rhythm in m. 115 to effect a coherent melody. This strategy also clearly portrays the polyrhythmic connections to a listening audience. Furthermore, due to the kaleidoscopic and rapidly changing textures and rhythms of the work, I examined the entire score and tried to illuminate any other such melodic through-lines. This attempt was made in order to further convey the shifting moods and textures of each of these double barred sections.

The image displays a musical score for measures 24-26 of Brian Ferneyhough's "Bone Alphabet." The score is written for two staves, likely representing different instruments or voices. The top staff begins with a tempo marking of $\text{♩} = 68$ and a *mormorando* instruction. It features a series of notes with dynamic markings *mp*, *mfz*, and *pp*, and a *tr* (trill) marking. The bottom staff starts at measure 26 and contains a complex, rapid sequence of notes with dynamic markings *fff*, *f*, and *mf*. Both staves include various rhythmic notations, including 6:5 and 7:5 ratios, and a large *fff* marking at the end of the section. The notation is dense and complex, reflecting the polyrhythmic nature of the piece.

Figure 3.21. Measures 24-26 from Brian Ferneyhough’s “Bone Alphabet.”

In my attempts at conveying certain contrapuntal lines more clearly than others, I also found sticking choices to be effective. For example, in mm. 24-26 (see Figure 3.21), I chose to perform all of the stemmed-up rhythmic lines with the right hand, and all of the stemmed-down lines with the left hand, as a way to further differentiate their contrasting rhythms. While I chose to utilize four identical mallets for my performance, this separation of the hands would further separate the rhythmic lines to a listener. Different lines of counterpoint would be visibly separated between my two hands, and the dynamic shape and specificity of each line could be more easily controlled. Some contrapuntal lines are far too quick to be performed with a single hand but, in slower instances such as this, this technique is helpful in conveying one line over the other.

The image displays a musical score for measures 66-68 of Brian Ferneyhough's "Bone Alphabet." The score is written for a single melodic line on a grand staff (treble and bass clefs). Measure 66 begins with a tempo marking of $\text{♩} = 48$. The notation is highly complex, featuring numerous triplets, sixteenth notes, and dynamic markings such as *ppp*, *p*, *mf*, *f*, *pp*, *f*, *più f*, and *ppp*. Above the staff, there are several slurs and markings including "sempre simile" and "sempre secco". Measure 67 continues with similar complexity, including markings like "deliberato", "molto pesante", "marc. in mp", and "poss.". Measure 68 concludes the section with markings like "pp", "f", and "ffz". The score is characterized by its dense, intricate rhythmic patterns and dynamic contrasts.

Figure 3.22. Measures 66-68 from Brian Ferneyhough's "Bone Alphabet."

Utilizing the one-handed roll technique also helps separate contrapuntal lines. For example, in mm. 66-68 (see Figure 3.22), one may wish to convey the two moving lines of counterpoint, especially since all of the lines are written solely on one instrument. I again chose to perform all of the stemmed-up rhythms with the right hand, and stemmed-down rhythms with the left hand, with the goal of delineating the two lines. These various sticking choices aide in conveying contrapuntal cohesion throughout the rapid-fire movement of this work.

One further strategy in expressing the myriad of polyphonic processes throughout the score is the use of gesture. Schick has discussed his use of gesture in “Bone Alphabet” in detail as not only a learning tool, but also as a performance method to highlight significant points of arrival:

Because of the very rapid rhythmic material, the motions of the performer are generally isolated in the mallets, hands and wrists; the rest of the body serves to position the hands and sticks over the correct instrument, but is not usually involved in generating striking motions (...) When, in rare instances, an entire bar features a clear, melodic trajectory such as those in Example 10 [mm. 25 and 55], the trunk of the body is liberated from the necessity to stand guard over the centre of the setup. (Schick, 1994: 150)

This use of bodily gesture is quite useful in the portrayal of certain climaxes of the work, and to simply create some contrast throughout the seemingly non-stop rhythmic cacophony. Schick gives further examples of such arrival points as in mm. 98-101, and 155.

I found the use of bodily gesture effective in providing contrast in the more sparse sections of the piece as well.

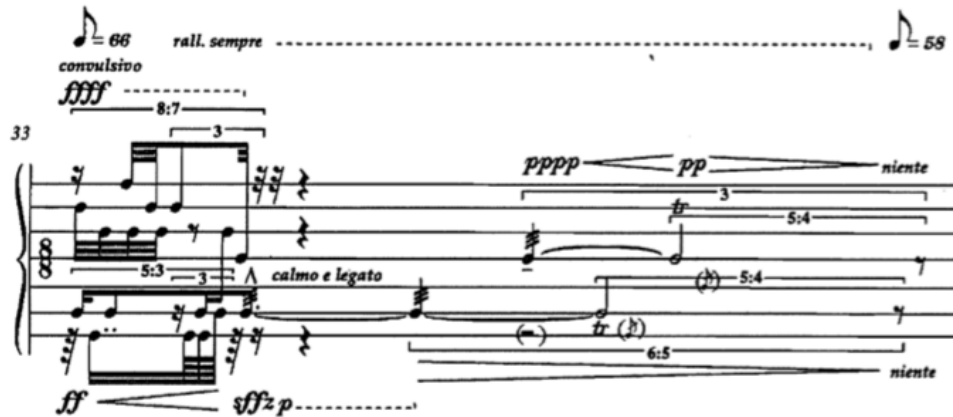


Figure 3.23. Measure 33 from Brian Ferneyhough's "Bone Alphabet."

For example, the end of m. 33 (see Figure 3.23) is one of the few reprieves from the densely composed nature of the rest of the work. To use Schick's terminology, a "liberated bodily trunk" allows for expressive rolls in the second half of the measure, following the *convulsivo* explosion in the first half of the measure.

These attempts at showing variety in mood and character are also an appropriate response to the criticisms (discussed in Chapter 1) of complexism seeming like an improvised flurry of notes with no discernible rhythmic or melodic material. In response to questions concerning his seemingly polyphonically unrelated method of composing, Ferneyhough answers:

I do tend to work with distinct layers of activity, in the sense that diversely instrumentated, individually textured processual vectors are usually co-extant in my works. Much of the larger-scale formal working out of my structures is based on the intersection, collision, confluence and divergence of these strands of activity. (Boros and Ferneyhough, 1990: 16)

This quote, along with many other of Ferneyhough's writings, display his awareness and intentions in regards to form and underlying compositional processes at work in his music.

The final interpretive issue discussed will be how to perform the abundance of expressive text used by Ferneyhough in the score. Firstly, the discussion of how best to perform certain expressive text is far beyond the scope of this thesis. While every performer has their own idiosyncratic mannerisms when it comes to portraying various emotions through performance, I will focus on some more technical avenues by which to achieve the directions given in the score.

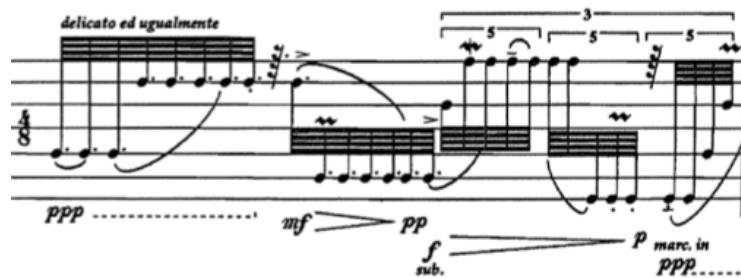


Figure 3.24. Measure 30 from Brian Ferneyhough's "Bone Alphabet."

The brief section shown in Figure 3.24 is marked *delicato ed ugualmente* (delicate and equally), and invokes a quiet and serene mood in contrast to much of the rest of the work. The goal is to portray this shift in expressive character through a careful attention to the fluidity and smoothness of the rhythms. To execute this, extra attention was given to the equality of subdivisions in the moving lines. This attention given to rhythmic fluidity happens in other instances of the score as well, such as m. 50 marked *grazioso*, or m. 82 marked *piacevole* and *legato poss.* This is another example where employing Ferneyhough's learning advice is beneficial, as I am focusing more of my attention on the "rhythmic and expressive import of each note" (see page 40). While rhythmic accuracy and fluidity are of course a concern throughout the entirety of the work, it is more pertinent in sections such as these than in densely composed sections of four line

polyphony, where minute divergences may be less perceptible by the listening audience (and perhaps the performer as well).

Another criticism is that the tempi are simply too fast to execute. In the existing recordings of “Bone Alphabet,” there are wildly contrasting tempi choices across the board. Of the existing recordings available on Youtube, the eighth-note tempo of the first measure of the piece ranges anywhere from forty-five to eighty beats per minute. That is a very wide range for such a small division of pulse. My choice in this matter was that if forced to sacrifice and lower a tempo marking at some point due to the difficulty of certain rapid rhythms or dense contrapuntal lines, I would try to proportionally lower the tempo marking of the entire double barred section in which that particular excerpt was included. This was done in an attempt to present each double barred section as a cohesive unit (as Ferneyhough described at the beginning of the score). For example, mm. 50-54 (see Figure 3.25) present a double barred section where although marked as *grazioso, ben artic.*, (gracefully and well articulated) the tempo marking is one of the highest of the entire work at quarter-note equals sixty beats per minute. My choice was to slightly lower the tempo of this particular section, so that a graceful character could be better portrayed.



Figure 3.25. Measures 50-54 from Brian Ferneyhough's "Bone Alphabet."

Finally, choices were made in my learning process that somewhat alleviated the substantial undertaking that learning a work such as this is. Many complexist criticisms are rooted in the fact that it takes so much time to fully learn and comprehend the material. One of my strategies for not getting bogged down in this task was not to learn the piece from start to finish, but rather move to measures that were less difficult, especially when I would become entrenched in densely composed measures of a more opaque nature. This served as a reprieve from burnout when I would feel myself having to devote large amounts of time to a single measure or two, and I would recommend this method to any performer in a similar situation.

These are all techniques and interpretive choices that aided me in the learning and performance of "Bone Alphabet," and they would appropriately translate to any other work of

complexism, or any other musical context for that matter. The long, arduous, but enjoyable learning process was a transformative one for me in terms of musicianship, interpretation, and technical facility. Furthermore, the skills acquired through this process have served me in numerous other musical scenarios. In the following chapter, through reflection on the interview responses with performers of complexism and my own experience with “Bone Alphabet,” I will illuminate the kinds of pedagogical benefits that arise as a product of learning and performing works of complexism.

Chapter 4. Pedagogical Benefits of Complexism

All players who have seriously attempted to master the challenges of radical complex music can testify to the transformative effects these challenges have on one's relationship to the instrument. (Cox, 2002: 128)

In Chapters 2 and 3, I discussed first-hand accounts of complexist musical experiences from both expert performers and myself in this style in order to show not only how a musically valuable performance is attainable, but also to demonstrate pragmatic methods through which challenges can be tackled. As detailed in Chapter 1, one of the criticisms of radically complex music is that the obstacles faced and skills acquired throughout the learning process are ones that are not applicable to any other musical context (Mitchell, 1990, and Hewitt, 1994). While some of the challenges specific to this style of composition are quite unique, the specialized skills required to execute them are beneficial in many other musical contexts. In this chapter, I will specifically address pedagogical benefits this learning process and performance experience bring to the percussionist. One might initially think that the primary gain from working through a piece like “Bone Alphabet” is a mastery of over-the-top irrational polyrhythms, but that was merely one of the many aspects improved upon as a result of my learning process. The experience served to enrich many other musical skills other than rhythmic facility. Similarly, Tanja Orning describes a kind of holistic enrichment to one's musicianship through experience with this music:

For the performer of this music, it is a tremendous challenge to interrogate and examine one's own practice—to confront one's limits, work on the margins and accept the non-linearity of complexity that removes the idea of perfection from one's vocabulary. In doing so, the performer allows these scores to become an area of investigation into corporeal, analytical, perceptual and psychological aspects of performance, engaging the broad range of human capacities for expression. (Orning, 2015: 317)

Orning's quote echoes much of my own experience with the complexist learning process. I was forced to confront shortcomings in my technical abilities, explore new ways of producing a musically expressive performance, as well as reckon with the idea of a perfect performance within the complexist context.

The chapter is divided into 3 sections: insights into preparatory actions and logistical planning when beginning work on a piece of music; various gains to technical facility on the instrument; and a deepened intellectual outlook on musical interpretation. My discussion will deal with musical matters specific to percussion playing, although many of the topics can be applied across the instrumental spectrum.

4.1 Planning and Preparation

This section will illustrate the kinds of insights gained from approaching a work of complexism, with specific attention given to the logistical planning required to begin the learning process.

As percussionists, the first challenge faced before beginning work on any piece of music is to choose appropriate instruments for the performance context. This is applicable to any musical situation, whether it is choosing an appropriate snare drum for a symphonic work, proper cymbals for a performance on drum set, or a group of consistent sounding instruments for a setup in a solo multi-percussion work.¹⁴ While this is a skill that percussionists are constantly working at enriching and re-enforcing, there is a heightened responsibility in regards to instrument choice

¹⁴ A multi-percussion work is a work which incorporates various types of percussion, such as a mixture of keyboard instruments and drums, or drums and cymbals.

when working through “Bone Alphabet” (as discussed in Chapter 3). I have had many experiences choosing instruments for multi-percussion works based on the sonic character I was looking to achieve, but had never had to reckon with the *restrictions* inherent in choosing instruments based on the compositional material of the work itself. I was aware of this necessary parameter in instrument choice from Steven Schick’s writings on the work (1994), but it became more and more clear when working through the score.

Following my experience with this Ferneyhough work, I still choose appropriate instruments that will complement the sonic character of the musical context. However, I now have an additional consideration when examining the musical material I will be accompanying (or performing solo). That is whether or not the chosen instrument(s) appropriately convey the amount of detail included in the score (or if the blending of choices is *capable* of conveying this detail). For well-known multi-percussion works such as Iannis Xenakis’ “Psappha” (1975), or Morton Feldman’s “King of Denmark” (1964), one is required to choose instruments which not only homogeneously blend in the dynamic spectrum of the work, but which also do not, due to their sonic characteristics, hinder the various contrapuntal lines and rhythmic intricacies. As discussed in Chapter 3, this experience is mirrored by Schick’s statement that the appropriate choice of instruments for a work as rhythmically rapid and extreme as “Bone Alphabet” is “very limited indeed” (Schick, 1994: 136).

Following instrument choice, appropriate mallet selection is another consideration which requires a thoughtful outlook in the complexist context. Again, this is one of the initial judgements percussionists make in any musical setting, both to complement the sonic landscape, and to show a certain character or mood throughout a work. This consideration is similar to my

arguments concerning instrument selection, as the compositional material inherent in most works of complexism denies an abundance of freedom of choice. The experience with complexism has given me a new frame of reference, or an additional angle with which to approach instrument and mallet options in day-to-day musical situations (such as when I am asked to execute very rapid contrapuntal rhythms in a large ensemble setting).

One further reckoning that percussionists deal with consistently is the issue of setup and how to layout a setup when you are utilizing multiple instruments. As a drum set player, one has to know how to setup their drums in a manner that is efficient and practical for the music being played. For works incorporating multi-percussion setups, it is common for a composer to not include a setup diagram and it is therefore the percussionist's job to come up with a setup layout that is not only economical in terms of space, but one that also allows for efficient execution of the required rhythms and patterns in the work. Even in the orchestral setting, it is common place for one player to have to cover several percussion parts simultaneously, requiring a knowledge and conducive awareness of setup issues. While it is not always necessary that a percussionist utilize multiple instruments within the context of complexism, multi-percussion (and even multi-percussion setups involving keyboard percussion instruments) seems to be the most utilized medium in this style. For a work such as "Bone Alphabet," it quickly becomes apparent that a setup must be concise and efficient enough to deal with the plethora of rhythmic turbulence. This initial choice, and subsequent adjustments made throughout learning the score, further informed my knowledge of necessary setup procedures and considerations in other musical situations. I also quickly realized that a proper setup would not only alleviate some of the rhythmic virtuosity, but would allow the execution of more of the numerous articulations as well. For

example, on my chosen setup, a thinner, shorter tone can be produced by playing on the edge of the conga or bongos. Therefore, I arranged these drums in a manner that would allow for playing both closer to the middle, as well as close to the edge. I continually tried to incorporate a setup that would be conducive to choosing specific playing areas on each instrument to mimic a certain articulation marking when possible (see page 72). Again, a heightened sense of appropriate choice transfers to other percussive contexts, and further informs my considerations when dealing with music of less complex substance.

As stated by Schick and McGregor in Chapter 2, and reflected in my own experiences, there is (typically) hardly a single measure in a work of complexism that can be sight-read on the spot. Beyond the rhythmic complexities, there are also further musical intricacies to digest and execute, such as an abundance of dynamics, expressive text, and frequently shifting tempi. This plethora of information requires a glacial speed of learning and the working out of complex rhythms, such as the graphing of measures. The experience of integrating a useful score preparation method and learning how to best utilize it, along with developing a greater attention to detail in regards to articulation and dynamic specificity will be beneficial in other contexts involving complex rhythms, such as examples of complexist music quoted by Claus-Steffen Mahnkopf (see page 10). Liam Hockley echoed this sentiment when he stated that he has developed a “large and regimented set of annotations” that “vastly cuts down the time it takes to learn a new piece” (see page 41).

A high level of contrapuntal rhythmic structuring occurs throughout other works in the percussion canon as well, such as this excerpt from Iannis Xenakis’ “Dmaathen” (1976), for oboe and percussion soloists:



Figure 4.1. Measures 42-43 of Iannis Xenakis' "Dmaathen."

This example presents irrational simultaneously-occurring polyrhythms. Since rhythms of this nature are typically too difficult to be read at sight, this excerpt requires score study and preparation before executing. A familiar and disciplined learning method for contrapuntal irrational rhythms will alleviate some of the difficulties in preparing similar examples, such as works by Roger Reynolds, Karlheinz Stockhausen, and James Dillon.

4.2 Technical Facility

This section will deal with perhaps the more obvious benefit of taking the time to work through a complexist piece, which is the improved technical facility one gains on their instrument. The first improvement a percussionist begins to see as they attempt to fluidly perform complex polyrhythmic patterns is increased independence between the hands and feet in the case of works such as James Dillon's "Ti.re-Ti.ke-Dha" (1979). In order to accurately produce the rhythms required in "Bone Alphabet," the performer must be able to perform polyrhythms of varying speeds simultaneously (sometimes up to four at a time), which requires an increased level of independence. Simultaneously occurring polyrhythms also require the performer to be constantly listening and assessing the fluidity of various moving lines. This

autonomy between the limbs, and the developed ear by which to judge rhythmic accuracy is a valuable and frequently necessary skill for the percussionist. The drum set player is typically required to be capable of performing independent rhythms between all four limbs in order to create grooves such as this typical mambo style:



Figure 4.2. Typical “Mambo” style drum set groove.

There are four independent rhythmic lines occurring here: 1) the bell pattern on the top of the staff; 2) the left hand pattern on beats two and four; 3) the bass drum ostinato on beats one and the and of two; 4) the hi-hat pattern on beats two and four. While the typical rhythmic independence achieved between the limbs in drum set grooves is not as radically difficult as the polyrhythmic structures found in complexist works, the improvements made in successfully separating one limb from the other in the complexist context will undoubtedly allow for more improvisational freedom in situations such as this.

There are several examples in the popular solo marimba repertoire of independent lines occurring between the hands. Marimbists are often required to perform one line of melody and one line of accompaniment (in the same manner a pianist might), requiring a certain degree of independence between the hands both rhythmically and dynamically. Beyond the melody and accompaniment texture, there are numerous instances throughout the repertoire where one must

be able to wholly separate one hand from the other. Figure 4.3 presents an example in an excerpt from Keiko Abe's "Dream of the Cherry Blossoms."



Figure 4.3. Measures 93-100 from Keiko Abe's "Dream of the Cherry Blossoms."

As the left hand maintains a steady sixteenth-note ostinato, the right hand is required to play accelerandos independent of the left hand. This requires a higher level of independence than in more typical instances of rhythmically synchronized melody and accompaniment. A more natural and fluid independence between the hands will allow the performer to execute an example such as this more successfully.

There are several instances of densely composed polyphony in "Bone Alphabet" which do not allow the performer to divide contrapuntal lines between their hands, forcing them to perform all lines with both hands simultaneously (even as dynamics are shifting between the lines). This requires the performer to adjust their dynamic touch as they perform several

simultaneous lines of contrasting dynamic shape. This is a skill that also applies to several other percussive contexts. As an orchestral timpanist, one simple technical requirement (but one that the performer must always reckon with) is a consistent balance between all of the drums. It is typical that notes of higher pitches placed on higher drums will cut through the texture more audibly than lower pitches placed on lower drums. Therefore, the orchestral timpanist is required to adjust their touch with every rhythmic line that incorporates both high and low pitches. Challenging rhythmic structures within complexism that require a discerning dynamic touch will help to serve and improve the percussionist's touch in similar settings.

As discussed in Chapter 3, one of the challenges when working through a densely composed score such as “Bone Alphabet” is choosing which contrapuntal lines to bring to the forefront of the sonic space, and deciding which should play more of an accompanimental role. This is a skill that musicians utilize and execute in every musical context, whether in solo or ensemble settings. Perhaps one of the most performed and well-known examples is the “Six Suites for Unaccompanied Cello” by Johann Sebastian Bach (Bach, 1918).



Figure 4.4. Measures 1-4 from the Courante from J.S. Bach's First Suite for Unaccompanied Cello with annotations to show multiple lines of implied polyphony.

In an example such as this excerpt from the first suite in the collection, a performer would typically attempt to highlight the implied multiple lines of polyphony that are simultaneously

occurring at once. In Figure 4.4, one may hear at least two distinct voices: the higher voice, which is annotated in red, and the lower voice which is annotated in green. The instrumentalists may elect to put more emphasis on one or the other, or certain notes within each, to further portray this implied polyphony. Even a pianist playing something as rudimentary as a children's song with simple melody and accompaniment is continually emphasizing certain sections of each separate line as they become more active, more melodic, or more soloistic. Again, when a performer is forced to reckon with discerning multiple lines of polyphony at the rapid speeds typical of complexism, then it will become much more manageable to deal with distinguishing contrapuntal lines in a more traditional musical setting, such as the J.S. Bach example.

The use of gesture is another example of one of the invaluable skills a percussionist utilizes across musical scenarios. In regards to the kinds of compositional gestures he utilizes, Ferneyhough writes:

What many players often fail to realize is that most of the textures in my works are to a large degree relatable to gestural conventions already familiar from other contexts. What is unfamiliar is firstly, the unusual rapidity with which these elements unfold and succeed one another; secondly, the high level of informational density in notational terms; and, thirdly, the extreme demands made throughout on the performer's technique and powers of concentration. (Boros and Ferneyhough, 1990: 8)

Whether it is to execute a specific articulative stroke (such as using a legato stroke gesture when playing timpani), to aide in the learning of difficult passages (such as in a work with a large multi-percussion setup), or to demarcate different lines of counterpoint (such as in Keiko Abe, Figure 4.3), the use of gesture drastically alters both the sound and mental interpretation of any musical work. In the context of complexism, gesture is also an indispensable tool. In a work such as "Bone Alphabet," performers can convey contrapuntal lines to the audience by altering their

gestures. For rapid passages, the use of gesture will aid in the learning process by helping to engrain the necessary muscle memory as one builds up to a faster performance tempo. Utilizing various physical stroke gestures is also one method of realizing at least a portion of the myriad of articulation specificities throughout complexist works. As discussed in Chapter 3, Steven Schick also incorporates gesture to further portray what he sees as formal landmarks in “Bone Alphabet.” Due to the seemingly incessant whirlwind of polyphonic material, bodily gesture is a valuable tool in which to mark significant arrival points within the score (see page 84).

Finally, works of complexism exhibit compositional demands which push a performer to the edge of their technical capabilities both physically and mentally. In this unusual context, the performer is required to not only maneuver through the intellectually challenging learning process, but to also train their body to be capable of executing the sometimes extreme physical requirements. Works of complexism typically utilize either a compositional abundance of information occurring simultaneously which challenge the performer intellectually, or speeds and movements of a preposterous level which challenge the performer physically (or in most cases, some combination of both). When performers push themselves to their limits, they learn what they are both physically and mentally capable of. Once having completed the learning process for “Bone Alphabet,” it made me aware of the kinds of perceived impossibilities I thought I saw in the score, but was able to overcome with slow, rigorous training. These are the same kinds of perceived impossibilities that athletes such as Roger Bannister and Alex Honnold overcame (discussed in Chapter 1). This learning of the limits of one’s abilities will provide a gauge with which to judge the difficulty of all subsequent musical works. Steve Schick echoed this sentiment in Chapter 2 as he initially viewed “Bone Alphabet” as the “Mt. Everest of

performance,” but found it “easier to play” than some of the other repertoire once having completed the challenging learning process (see page 44). The pushing to the brink of physical capability is what pianist Marc Couroux calls “critical virtuosity” (Couroux, 2002). Couroux points to examples of this process when composers are “deliberately writing against conventional physical paradigms in order to trigger new relationships between body and matter” (54). These “new relationships” that are created between body and matter, or between performer and instrument, will expose the musician to a new level of capability; a level of capability which will enhance any further musical endeavour they engage in.

4.3 Interpretation, Retention and Integrity

One of the most transformative effects I witnessed in my musicianship after working through a complexist score is the improvement upon my ability to not only absorb and retain more of the compositional specificities included in subsequent musical scores, but to be able to mindfully manage all of those details into a cohesive musical performance. Liam Hockley echoed this opinion in Chapter 2 as he saw a “greater awareness of detail, especially in terms of articulation and pitch” (see page 39).

The plethora of compositional materials and dense textures involved in complexism requires an extremely slow learning process. The slow-moving speed of comprehension that is required of these works (at least in the beginning stages) is the only viable option when there is so much information to digest, or what Schick described as “just above the speed of composition” (see page 48). When a performer is attempting to retain and execute so many compositional specificities, it will improve their retention skills and performance capabilities in

terms of the amount of musical information they are able to manage. For example, if a pianist were to learn and perform a complexist work with a dense and prolific amount of dynamic and rhythmic information, then when preparing a more traditional work such as a Beethoven piano sonata, the improvements in their ability to retain and manage information would contribute to a much easier learning process for the Beethoven sonata. While this is not meant to posit that a Beethoven piano sonata is objectively easier to perform than a work of complexism, it is undeniable that there are less compositional specificities to retain and comprehend than in a virtuosic complexist work.

Beyond these skills, in learning and performing a complexist work the ability of the performer to interpret and execute wildly radical music in an expressive and musical fashion is challenged. The ample expressive text in Ferneyhough's "Bone Alphabet" actually allowed for more interpretive freedom on my part, and inspired me to try to be more musically expressive. Once a performer is challenged with how to perform several simultaneous contrapuntal lines of irrational rhythms in a *delicate* or *content* manner, then they will have a more broad spectrum of expressive capabilities in a variety of contexts.

One of the most unique aspects of complexism is the fact that due to the extreme virtuosic nature and abundance of musical material, it is quite difficult for a listener (or even an experienced complexist performer) to discern mistakes that are made in performance; this was a criticism brought up in Chapter 1. The high degree of virtuosic musical product and the arduous preparation and performance of complexist works impose upon the performer an honest and thoughtful musical integrity. Frank Cox writes:

It is of the greatest importance (...) that ever-more responsible performances of such music of ever-greater refinement be heard, and that adequate clarifications for the reasons of such unusual challenges and their musical potentials be presented. (Cox, 2002: 70)

Mark McGregor further details a performers struggle with complexist performance integrity when he discussed how performers cannot “approach this music with “faking” as the only item in their arsenal,” and that it must be “approached and executed with the same intention, discipline, and respect one would give to, say, a particularly complex work of J.S. Bach” (see page 47). This is very much a reckoning that is not commonly addressed in most other musical contexts. For more traditional, and especially tonal works, if the performer does not prepare in a responsible manner, mistakes in performance will be (most of the time) immediately discernible to the audience. This risk of public inaccuracy is what leads many performers to prepare music to an intensely rehearsed and heightened degree. However, in the complexist context, some may hold the opinion that any kind of mistake or inaccuracy might not be noticed by the audience, and therefore requires less of a thoughtful preparation process. Therefore, it is required of the performer to hold themselves accountable for reaching a morally responsible level of preparation, interpretation, and accurate execution. This is not to say that a performance must be perfectly accurate, especially given that this may be contrary to many of the tenets of complexist ideals and goals. But, the performer must put forth their best effort in realizing a complexist work to the fullest of their potential, and not relegate themselves to uninformed and wildly inaccurate approximations.

This musical integrity may also be applied to other contexts which feature complex or virtuosic music. In contemporary wind ensemble and orchestral works, it is not uncommon for mallet percussion parts to be quite difficult, although serving in an accompanimental role.

Therefore, some performers may not view the accurate performance of these parts as a matter of importance, and perhaps believe mistakes will not be discernible to the ensemble or audience. A more honest and thoughtful musical integrity (required in the complexist context) will inspire the performer to bring the same level of integrity to this scenario, as well as subsequent musical endeavours. There are plenty of other examples of complexist works which will benefit from a heightened level of musical integrity as well, even if not on the same level of virtuosity. Well-known examples of this from the percussion repertoire would be works such as “Psappha” by Iannis Xenakis (1975), “Zyklus” by Karlheinz Stockhausen (1959), or “Watershed IV” by Roger Reynolds (1995).

Finally, when performers engage in this radical musical context it further broadens the scope of their musical knowledge, capabilities, and expressive depth. In Chapter 2, Mark McGregor expressed that his experience with complexist music “unquestionably improved my rhythm and ensemble skills” (see page 45), while Steven Schick stated that one will “gain an enormous amount in terms of your understanding of all the other aspects of percussion playing” (see page 48). Most musical pedagogues would agree that when the maturing musician exposes themselves to as many different types, genres, and musical scenarios as possible, they become a more well-rounded and versatile performer. Dr. Katherine Wallace, music professor at the National University of Singapore, expresses this sentiment in regards to instrumental musicians attempting to sing in a choir:

Stepping out of one’s comfort zone into new musical experiences, such as when a classical instrumentalist becomes immersed in choral singing, pushes a musician to take on new perspectives and to think in different ways in order to meet the various challenges that are posed by the experience. Such experiences go a long way toward helping the

student musician form his or her personal vision, and hence build artistry and musicianship. (Wallace, 2014: 499)

Marilyn Taylor, management professor at the University of Missouri at Kansas City, discusses how new and unusual challenges will further alter and improve upon one's competence:

The goal of much experiential learning is to take students out of their comfort zone in order to present extra challenges that deliver an opportunity to apply knowledge and skills already acquired in the classroom; in the course of the learning process, related knowledge and skills will be relearned, reconstructed, transformed or enhanced by the experience. (Taylor, 2005: 375)

With specific regards to complexism informing more typical musical pursuits, Frank Cox writes:

...these new domains demand far finer dynamic/textural/timbral distinctions than explicitly demanded by any previous music (...) there is a great likelihood anyone who seriously attempts to meet such challenges will—always assuming that (s)he maintains his/her traditional skills—end up developing a much broader and finer palette of tone colours and sound-qualities than those who perform only traditional music and conventional contemporary music. (Cox, 2002: 126)

4.4 Conclusion

There is a myriad of pedagogical benefits for the percussionist who attempts to take on the substantial task of learning and performing a work of complexism. Due to the dense musical fabric of this style of music, it requires a more thoughtful and detailed preparatory phase than other contexts. The experience of more in-depth planning of logistical aspects such as instrument choice, mallet choice and setup layout will vastly inform the preparation of subsequent percussion works. The high level of virtuosic rhythms incorporated in this music also require a much slower learning process, and unique learning methodologies in order to interpret the abundance of compositional specificities. Methods used such as graphing out complex and

irrational contrapuntal rhythms are a useful tool in other contexts of this nature, as well as in many other works across the percussion canon.

Beyond the preparatory stages, a heightened level of technical facility is achieved through learning and performing works in this style, the most useful of which is the improved independence between one's limbs. The skill of being able to rhythmically separate one hand from the other (or legs when needed) is valuable across many percussive scenarios such as playing highly contrapuntal drum set grooves, solo marimba repertoire requiring simultaneous melodic lines, as well as in numerous multiple percussion works. The technical facility of independence is expanded upon, and the ability to implement that facility in order to distinguish various simultaneous lines in a contrapuntal texture is improved as well. This is a competence that percussionists are required to execute frequently, such as when performing a work like the J.S. Bach Unaccompanied Cello Suites, which features compound melodies, or when performing solo marimba or multiple percussion pieces that feature counterpoint between the limbs. Furthermore, the experience of pushing oneself to the edge of performative possibility either in regards to speed or musical expression will help to inform (and possibly alleviate some of the difficulty of) subsequent musical endeavours.

Finally, the required level of interpretive decision-making, comprehension and subsequent execution are all at an exaggerated level in complexist works. The proficiencies one gains throughout these experiences are invaluable when performing in other more typical, less hyper-virtuosic scenarios. A more thoughtful sense of musical interpretation and expressivity is achieved and can be applied to subsequent musical pursuits. As well, the amount of compositional information one is able to retain and execute becomes augmented due to the

abundance of compositional specificities the performer is required to manage in the complexist context. Finally, the abundance of compositional material and the highly complex rhythms utilized make it difficult for the listening audience to discern mistakes made during a performance. Therefore, taking on this style of music, and producing an ethically responsible realization requires a high level of integrity from the performer—a virtue which may endure in the preparation of subsequent musical works. As a result of the challenges faced and improvements achieved, the percussionist will undoubtedly benefit from the complexist experience throughout their ensuing musical career, having “breached the unbreachable performative ethic” (Couroux, 2002: 66).

Chapter 5. Conclusion

In this thesis I have demonstrated that when a performer decides to take on the substantial task of learning and performing a work of complexism, it not only can be an enjoyable process with an attainable performance goal, but it also provides significant benefits to one's skills and musicianship. I began by presenting a review of the relevant literature on the origins and evolution of the relatively new compositional school of complexism, as well as several criticisms of the style—arguments that the music is of pure intellectuality with little musical substance, utilizes notation that is far too difficult for anyone to accurately comprehend, and provides little musical value to either the performer or the audience. Furthermore, examples of historical accomplishments in other disciplines, once thought impossible, were presented. These feats were attained either through rigorous training or the forethought to simply experiment with a new process by which to overcome the obstacles. Positioning these historical feats side by side with the seemingly impossible demands of complexism was done in an effort to illustrate the innovative approaches necessary when dealing with music as radical in nature. Irvine Arditti describes this sentiment of transcending traditional musical achievements:

Every era seems to uncover new realms of possibilities for the player. What was not possible earlier this [twentieth] century, is or will be possible. It is the player's responsibility to transcend traditional limitations and find new possibilities of interpretation. (Arditti, 1990: 9)

In Chapter 2, questionnaire responses from expert performers and champions of complexism were included as a way to display the pragmatic and beneficial nature of the learning and performance process. While each experience was unique, several shared themes emerged—a necessary and particular kind of preparatory stage away from the instrument, a

heightened level of technical facility and retention as a result of a rigorous training process, and a resulting awareness that aided them in subsequent musical endeavours. This invaluable feedback not only served as a demonstration of the kinds of benefits one may see from venturing into this style of music, but also further reinforced the main argument of this thesis project.

To display the attainable nature and musical benefits of these works, I detailed my experience learning and performing Brian Ferneyhough's "Bone Alphabet" in Chapter 3. This is a mammoth solo percussion work that is infamous in the percussion world for its incredible virtuosity and seemingly impossible contrapuntal rhythms. However, through in-depth descriptions of my preparatory measures, video demonstrations of various technical challenges throughout the work, and my application of strategies that had been written about prior to this study by expert performers in the field, I have demonstrated that it is a surmountable task if one is willing to engage in rigorous and thoughtful practice. The strategies included in this chapter illustrate a methodology for learning works of this style, and are also applicable to other works of complexism as well as other musical contexts as well.

Chapter 4 served as my primary argument for the thesis. I presented the myriad of pedagogical benefits that the musician will see as a direct result of their experience with the complexist learning process. From the beginning preparatory stages of learning a work, to the abundance of specificity that one is forced to reckon with, to the final act of a cohesive live performance, the unique set of circumstances provide the performer with a knowledge that is applicable beyond this stylized setting. Several of the interview responses presented in Chapter 2 further reinforced these arguments. Shared experiences emerged stating that the virtuosic and highly specific compositional demands of complexism brought a heightened level of technical

facility to subsequent musical endeavours, as well as an expansion of the musician's performance palette in regards to interpretation, tone colour and expressive potential. While the conclusions presented in Chapter 4 were specifically in reference to musical benefits to the percussionist, the more broad benefits to musicianship, interpretation and thoughtful preparation apply across the instrument spectrum.

Possible future work in this field may include in-depth examinations by other instrumentalists into solo works for their respective instrument, such as I have done with "Bone Alphabet," and further chronicling of subsequent musical benefits resulting from their experience with complexism. While this thesis provides avenues regarding technical facility for the percussionist, it does not address more specific technical matters for other instrumentalists, such as improved facility on one's instrument. Further research could be presented regarding useful learning strategies in the complexist context; insight into issues such as: 1) tempo and how to successfully increase tempi throughout the learning process; 2) methods of feeling an internal pulse during live performance; 3) increased memorization and retention skills. Data could be collected from the point of view of both the pedagogue and the conductor as well. A study presented from the viewpoint of a pedagogue, analyzing various students' progress throughout the complexist learning process, would provide valuable information about the benefits of the experience, including in other musical contexts. Furthermore, observations from the perspective of the complexist conductor could illuminate issues of pulse, gesture and ensemble synchronization. Finally, an inherent limitation to this project is the lack of information synthesized from the point of view of the complexist audience. It is beyond the scope of this

thesis, but this important aspect is one that would significantly expand upon research done thus far in the field.

It is my hope that these conclusions will illustrate to both performers and music pedagogues that learning and performing music in this style is not only worth the amount of time it takes to learn and process, but is beneficial beyond the complexist context. The learning process can be arduous and time consuming, but incredibly enjoyable and insightful into one's musical deficiencies. As well, the limits of what one is able to achieve both physically and mentally are further illuminated. The performance of a musical work as incredibly dense, complex and visceral as "Bone Alphabet" not only challenges the percussionist to the core of their being, but can provide them and their audience with, in the words of Steven Schick, one "wild ride" (Schick, 1994: 152).

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Appendices

Appendix A. Interview Questions and Transcripts of Participants' Responses

Interview Questions

1. Tell me about how you came to be interested in New Complexity. What was it like to learn your first piece in this style?
2. Can you describe how your musical ideas or techniques developed or were adjusted during the process of learning this work?
3. Did you find that the learning process was less difficult for subsequent pieces in this style than it was in your first experience?
4. What special kinds of skills are needed to perform this music?
5. Describe your mental and psychological state when you perform this music.
6. Have you found that your experience learning and performing New Complexity music has served you in other musical contexts? Either through specific skills acquired in the learning process, during live performance, or in more broad terms such as musical and conceptual interpretation?
7. What would be your advice to a student who comes to you with the desire to learn a New Complexity work?
8. And would there be any criteria in deciding if a student is prepared to take on such a challenge?
9. What is your response to critics who say that the amount of work it takes to prepare a work in this style is not worth the musical outcome for either the performer or audience? Could you argue both for and against this perspective?

A.1. Liam Hockley

1. It was probably my discovery of Richard Barrett's music, especially *Opening of the Mouth* with its wonderful and unique clarinet writing, that first brought me into contact with 'complexity' (an admittedly dubious label that I know Richard would vehemently argue against). I was intrigued initially by the explosive energy of his music and then, as I began to study his scores more earnestly, by the intersections between the material and the physical elements in his music.

My first learning experience was with two of Ray Evanoff's clarinet works: his clarinet and piano duo *All of the Inquiries I can Offer Right Now* and the related solo piece *A Series of Postures (Clarinet)*. I had been hired by a festival to do a reading session of submitted works and, at the time, Ray's pieces were the most specifically-notated and 'complex' works I had encountered. Much of my learning process focused on developing and differentiating the very specific nuances (particularly with articulation) that Ray's music calls for. Following the reading session, I worked more closely with him on his

solo piece: in parsing through the detail of his work, I began to more clearly understand his artistic ethos and how the surplus of notated details in his scores was not idiosyncratic but instead indicative of a broader interest in physicality; that is, the physicality and athleticism of instrumental performance, and the actions of the hybrid performer/instrument body during performance. This pointed me towards a better understanding of the compositional approach—or at least one aspect of it—of many other so-called ‘complexist’ composers (like Richard Barrett, Timothy McCormack, and Aaron Cassidy, to name a few).

2. I think probably the biggest development was a greater awareness of detail, especially in terms of articulation and pitch. Initially, the main challenge of the piece was finding the specific gradations called for within these parameters and then learning to reproduce them with consistency and immediacy.
3. My learning process has become more streamlined rather than “less difficult”: since the compositional approaches that tend to fall under the ‘new complexity’ label are extremely diverse, every piece continues to present its own unique set of physical and musical difficulties. I find that the major difference now is that I have a much bigger and more effective toolkit for efficiently working through whatever challenges arise as I prepare the piece for performance.

For example, I’ve come to appreciate the value of an initial period of score study (away from the instrument) and have developed a pretty large and regimented set of annotations that I make to my scores to guide my initial work. I’ve found that this process vastly cuts down the time it takes me to learn a new piece as I’ll already have a good understanding of the materials, formal dimensions, and technical challenges it presents before I begin to practice. Of course, I’m also now much more fluent in the musical language that many ‘complexist’ pieces tend to use but this isn’t something that is directly tied to my experiences with complexism: the fluency I’ve developed with microtones, for example, came largely from learning Stockhausen’s later works for clarinet and basset horn.

4. There is definitely a certain level of technical capability and control that is needed, though it varies pretty widely from piece to piece. I think it’s not so much a specific technical skill set rather than an artistic ethos: you often encounter pieces that require you to rethink your physical approach to the instrument, for example, which can be an uncomfortable place to be. I think above all you need to be willing to challenge yourself in very unique ways. I also think that you need to have a fair amount of integrity to keep yourself accountable to the scores: it can be all too easy to slip into a mannerist improvisation based on the piece.

5. I don't find that I feel any differently performing complexist music than I do with any other type of music: my main goal is always to present as compelling a musical experience as possible.
6. The process of learning and performing complexist works has prompted me to reconsider and refine many aspects of my technique. For example, in the works of composers who approach and develop the mechanisms of the body and instrument with a high level of specificity and nuance or decouple the actions of the mouth and hands altogether (as we find in various forms in the clarinet works of Aaron Cassidy, Evan Johnson, Timothy McCormack, and Ray Evanoff), I find that I am often required to isolate and develop very specific nuances within a mechanical element I had previously considered to be part of a single system: i.e. jaw pressure, the horizontal/vertical positioning of the instrument relative to the embouchure, air pressure/speed, and so on. The work I have done in this domain has fundamentally affected the ways in which I think about my instrument in other musical contexts and in terms of its historically-sedimented objecthood, but this shift in thinking is much more difficult to quantify.
7. I'm not sure: probably to start slow. I've found that the learning process is really not so different between 'complexist' music and standard repertoire.
8. Beyond the necessary level of technical facility on the instrument and musical/artistic maturity and integrity, no.
9. In my experience, some of the most enthusiastic responses I've received to complexist music has been from individuals with little or no formal musical training, while the strongest criticisms have come from other (primarily classically trained) musicians. I think that this is an indictment of our current music education systems, which more often than not prioritize a conservative and antiquated view of performance and expression. Music that challenges this dominant mode of thinking tends to be marginalized and maligned by musicians unwilling—or unable—to stretch their aesthetic boundaries beyond the comfortable and emotionally immediate.

A.2. Mieko Kanno

1. I was a Masters student at York University (UK) and friends suggested that I might be interested in the repertoire. You may know Roger Marsh, who wrote a short polemic article about the notation used in New Complexity (published in 1994 in *Musical Times*); he was a good mentor to me and encouraged me to have a go at the repertoire. I remember the first-stage learning (of notes and rhythms) took a long time, but it was like doing a 1000-piece jigsaw puzzle: it was cumulative, and the performance became a reality slowly and steadily.

2. I don't think there is anything very different from learning other pieces from the same period (the second half of the twentieth century). There are more challenges in the New Complexity repertoire but the challenges themselves are essentially not very different from the other repertoire, in my opinion.
3. Not necessarily. We do become more efficient but that's a minor part of learning this repertoire.
I should also mention that the learning process varies between solo pieces and ensemble pieces, and whether conducted or not.
4. As a violinist, I don't think it asks for any more special kinds of skills than those you need as a performer of the late twentieth century music. You may receive very different answers to this question, depending on which instrument the respondent plays.
5. I don't think it is different from performing any other music, meaning that you focus on making something musical.
6. Again, I don't think there is anything markedly different from learning and performing the rest of the late-twentieth century music. One of the things I learned from working with the so-called New Complexity composers is that having more details on the page does not necessarily make musical ideas more precise; that it is just their way of expressing music.
7. Learn it like any other piece of music, with patience.
8. They would have to be interested in the music.
9. May I answer your question by referencing my advice to young composers? Every time a composer puts in an extra irrational rhythm or unusual time signature, they have to be aware that they may have lost the possibility of some of the most talented performers performing the piece because of their not having time or resources (in terms of ensemble rehearsals). They may be lucky to find performers who have interest in their music, time to learn it, and skills to perform it; or they may not.
As for the audience, it is my understanding that people enjoy (or do not enjoy) listening to this repertoire like any other late twentieth century music. It does not present any problem until they are shown the notation. In the age most people enjoy electronic music without checking how the digital sound processes are constructed as a patch, our views on what a notation is in relation to the music may be shifting.

A.3. Mark McGregor

1. Like many flutists, the first piece of music I learned that could be seen as genuinely “New Complexity” was Brian Ferneyhough’s *Cassandra’s Dream Song* (1970). At the time I was studying with a teacher at the Sydney Conservatorium who had worked a fair bit with Ferneyhough, so I had a lot of excellent guidance. That said, I still found the score visually daunting, so I photocopied it and actually taped it to the walls of my bedroom—the idea being that, if I surrounded myself with the score, I would eventually accept it as “normal.” After that, I began learning the piece in a fashion that was surprisingly similar to how I learn traditional music: essentially one bar or phrase at a time (though often quite a bit slower), left to right across the page. *Cassandra’s Dream Song* has the added benefit of being very sectional (the material consists of short statements that are ultimately performed in an ordering of the performer’s choosing), so the “bite sized” nature of the musical material made it easier to learn and absorb. It is, in my mind, an excellent introduction to New Complexity.
2. Whatever piece I’m playing, whether it’s Bach or Ferneyhough, I need to think of in musical/human terms: the imagery it evokes, its narrative, or (particularly with newer music) how the music might relate to sounds that occur in the real world. As far as *Cassandra’s Dream Song* was concerned, I found it really helpful to think of each phrase in terms of birdsong (and it helped to be in a city full of incredibly cacophonous birds!); it informed my phrasing, my articulation, and it stretched my technique in new directions. But it all remained within a very musical context, so the learning process wasn’t so much an issue of abandoning any previous musical knowledge, so much as dramatically expanding on it.
3. It was absolutely easier learning subsequent New Complexity pieces, primarily because one learns how to prioritize the excess of musical information. When faced with several lines of counterpoint (especially when playing a traditionally monodic instrument, like the flute), it becomes impossible to present everything that’s on the page, even when the music is as expertly written as Ferneyhough’s. One of the most frustrating things about Ferneyhough’s flute music in particular is that the composer is also a trained flutist, so pretty much everything he wrote in both *Cassandra’s Dream Song* and *Unity Capsule* is, technically, *physically* possible to play. The issue is that, as a human performer, one simply can’t process all that information simultaneously. So now, when I perform music that is “complexist” in nature, I’ve learned to quickly identify those things that I want to bring out, and allow other strands of information to become secondary or tertiary, or in some cases ignored altogether. It’s a necessary means of reducing physical and mental distress in the learning process, but one that also happily creates a diversity of interpretations: one can hear wildly different performances of the same complexity piece, because each performer has created their own “priority parameters” through which they sift the surfeit information.

4. I would say there are three things needed to perform New Complexity music well: tenacity, patience, and a hint of masochism. The need for tenacity and patience is, I think, obvious, so I'll speak about masochism: as classical musicians we are trained from an early age to strive for perfection. New Complexity music, by its nature, guarantees that we will ultimately fail in our endeavour to present a "perfect" performance. In order to play this music well, one needs to accept the fact—and even *revel* in the fact—that all of one's efforts will be thwarted. And it's these performances, where a highly skilled musician willingly hurls themselves into an arena of insurmountable odds, that I find the most thrilling and visceral.
5. When performing New Complexity music, my mental state tends to be a weird balance of trauma and exhilaration. I have this sensation that I'm presenting a series of highly detailed images in rapid succession—a bit like a slideshow on super high speed. Often enough, you don't communicate an "image" as effectively as you might like—the speed, the adrenaline, the excitement of the moment inevitably causes you to stumble. But by that point it's way too late to do anything about it, because you're already onto the next image, and the next; there are these flashes of frustration when these "trip-up" moments occur, but you simply don't have enough time to over-dwell on it. And then there are times when it's *on*: you're capturing a tremendous amount of detail within an extraordinarily short amount of time, and are you're transmitting this detail with clarity and precision. And when this happens, it feels like you're surfing at high speed. It really is an adrenaline rush.
6. Performing contemporary music in general, I think, has made me a better musician. Coming back to older, more conventionally written music, I find I'm more creative in how I approach phrasing, tone colour, and (particularly) articulation, because my time with contemporary music has expanded these palettes. With regard to New Complexity specifically, it's unquestionably improved my rhythm and ensemble skills.
7. I feel, for the aspiring performer, New Complexity needs to be seen as an extension of the classical music tradition, not a reaction to it. The ability to play New Complexity well is entirely dependant on the rigorous training, discipline, and eye for detail that one learns when studying traditional classical music. The most thrilling performances are when a hyper-trained musician is locked in combat with a piece of music that is, to a large extent, hellbent on thwarting that musician. But if that hyper-training isn't in place, or at least being aspired to, then there isn't anything to thwart, and the whole point of the piece can be lost. On a couple occasions, university-level students have come to me, wanting to learn such-and-such New Complexity work, because they think that this music can somehow disguise their technical shortcomings—that they can successfully perform this music by simply "faking" it. Now, I won't lie: "faking" is a vital part of the New Complexity performer's toolbox, but it's one that we use as a final resort, when all other

legitimate possibilities have been exhausted. But one can't approach this music with "faking" as the *only* item in their arsenal. New Complexity music needs to be approached and executed with the same intention, discipline, and respect one would give to, say, a particularly complex work of J.S. Bach.

8. As far as the flute is concerned, there are several pieces that pave the way to New Complexity, and I would want to make sure that most or all of these pieces had been learned and absorbed beforehand: J.S. Bach's *Partita for solo flute in A minor*, because it demands stamina, creative interpretation and phrasing, and is an excellent early example of how composers channeled multiple lines of counterpoint through a single, monodic instrument; Claude Debussy's *Syrinx*, because it requires emotional subtlety, drama, and nuance; *Density 21.5* by Edgard Varèse, because it's the "anti-Syrinx," with its angular melodies, wide and unidiomatic leaps, and percussive effects; Luciano Berio's *Sequenza I*, because it builds on the Varèse and takes solo flute counterpoint to new extremes; *Le Merle noir* by Olivier Messiaen, because of its rhythmic complexity and ensemble challenges with the piano; and finally *Voice* by Toru Takemitsu, because of its handling of silence as a dramatic tool and a use of vocal effects that pushes nearly every flutist outside of their comfort zone. Once a student has lived with this music, I think would consider Ferneyhough's *Cassandra's Dream Song* as a student's ideal "gateway drug" into the world of New Complexity.
9. I think it's difficult to judge effort versus outcome with New Complexity because there are so many variables at play: first and foremost, the quality of the work itself. A well-written work is more likely to engage its performers and ensure a committed performance and (hopefully) a positive audience reception—and of course, a poorly written work will be more difficult to communicate effectively. One is also dependent on the commitment of the performers themselves, to an extent that exceeds the needs of traditional classical music, or even other types of contemporary music; a performance of a work of New Complexity can be entirely undone by a single musician who doesn't "buy in" to the music or the effort required to play it well. I suppose the best thing I could say to critics of New Complexity is to seek out performances of music by truly great composers of the genre (in my opinion: Ferneyhough, Finnissy, Dillon, Czernowin, Barrett), performed by truly committed interpreters, before passing final judgement.

A.4. Steven Schick¹⁵

3. *Schick*: Well, everything is less difficult than *Bone Alphabet*. So, yes. Aside from that, I know Frank Cox's *Di-remption*. That's an interesting piece you could look at, incorporating Ferneyhough's use of what is sometimes called irrational meter [...] But to

¹⁵ This interview was conducted by phone on December 13, 2019, and transcribed by Aaron Graham. Only conversation segments relating to the interview questions are included in this appendix.

answer your question, other pieces you could look at besides Frank Cox's piece are Dillon's *La Coupure*, Josh Levine's quartet [*Four places, many more times*]; I've never actually played his music, but have conducted it. And then of course, [Brian Ferneyhough's] *Fanfare for Klaus Huber*, but those are the only ones coming to mind right now.

Graham: And in regards to *Bone Alphabet*, did you find that the learning process became faster as you progressed further through the score?

Schick: Yes, absolutely. And you know it's ironic that I am talking to you now because I am relearning *Bone Alphabet*. The last time I performed it was in 2014, and if you are not careful with that piece it can kind of get a little sloppy. And I really wanted to go back and rework it from the beginning, but I also wanted to forget it first. This is the longest break I have taken away from it, since 2014. So now I'm going back through it and the process is speeding up.

5. Every piece I play informs a kind of pre-concert mindset. But I actually don't think that *Bone Alphabet* is the hardest piece that I play. It is not the piece that on a given concert I would think, if I get through this I'm ok. But the learning process is very different, being very difficult and time-consuming. I actually really love the learning process of it. For example, I think it is harder to play *Rebonds* [Iannis Xenakis] than it is to play *Bone Alphabet*, for reasons of pacing yourself and not getting yourself in trouble in *Rebonds B* etc., etc. I remember looking at *Bone Alphabet* as the Mt. Everest of performance. In a weird way it is easier to play it, once you've learned it, than some other repertoire.
6. That is an interesting question and my answer is in a couple of parts. One would be the specific strategies regarding rhythm are broadly applicable. For example, the rhythmically difficult parts of Xenakis' *Dmaathen*. I went through those more easily than I would have had I not done *Bone Alphabet*. And there are some other instances of that. But, what I think actually is the defining lesson of a piece like that is that the learning process is naturally much slower. I mean there is rarely a bar you can read. Everything has to be calculated and so it puts the performer's thinking process at a much more basic level of the piece than almost anything else. In other words, you have to really almost go at the speed of composition in order to learn this piece. And that is really interesting in the way, not so much how you decipher rhythms, but in the way you manage things like texture, and tone colour on the instrument and everything like that. Nothing can be just played through, and you end up at a level of a kind of DNA of the piece that is much more basic than you could almost do with anything else.
7. *Graham:* Have you seen any of your students take on *Bone Alphabet*? And if so, have you witnessed any benefits for them, either short-term or long-term?
Schick: Almost all of my students that I have worked with have taken on *Bone Alphabet*. I think that the advantage to the student pedagogically is that it is fabulous to be in a situation in which the interlocking demands of the piece are so sophisticated that you

actually can't do everything that you want to do with it. And so then there's this question of how do you make a decision for each particular bar. If you take a look at bar nine for example, I'm not looking at the score right now, or some of those bars at the end of the second page where there are tremolos, I can not figure out how to get both the right attack points at the right times and the tremolos to the right duration. Just because on my setup it doesn't quite work. And so an informed prioritization means that you have to adopt a point of view. From the beginning I think that is an extremely helpful thing. Now, what most people do is they adopt a point of view that the attack points and the rhythms are primary and everything else is secondary. And then, I believe you end up with a less rich experience than if you simply say, no, let's put this all together and prioritize a vision with texture and rhythm, and flavour, and the emotional agency of the moment all together.

Graham: And would you have any advice to a student who had not played a work like *Bone Alphabet* before?

Schick: My advice is not really about the details. But I would tell a student, or anybody, that the beneficial aspects to the conditions required of this piece are the enforced slowness of learning. By learning so slowly, because you have to, you gain an enormous amount in terms of your understanding of all the other aspects of percussion playing. And what you would like to avoid, which is really hard to avoid because this piece sometimes feels like it takes forever, is that we should rush through things. The learning process gets faster as you build a platform for making decisions. And I would say in fact that the right speed at which to learn this piece is just above the level at which you would stall out. So really, you can't slow down to the point where you don't make any progress and you lose speed. But, just before that point, that's about the right speed. Almost everybody learns it too quickly.

8. My feeling is if you possess the technique to begin with, if you can play with four mallets, I think you can play this piece. I've always objected to this about all the repertory, that you have to work your way up to *Bone Alphabet*. I think you should follow your passion and adrenaline and focus far more than anything like you should first play *Rebonds* and then play this. No, I don't believe in that for any repertory. What you need to learn *Bone Alphabet* is enough interest in the piece, enough discipline, and enough day-to-day satisfaction to sit in a practice room for 6 months and learn it. And that is actually unrelated to have you played the marimba repertory, or have you played this or that. I think those are the criteria.
9. One of the responses I got in the early days, and I got a lot of them, was "he could have written it more simply." And if you accept that what you see, that what he wants is in that score, and not something that is like that score or somehow changed, accept that that is what he hears and what he wants, then he could not have written it more simply. Could you come to something that sounds kind of like *Bone Alphabet*, yes of course you could. But then, that's not *Bone Alphabet*. And for me, the interest in all of this—and this goes back to the 80's and 90's for me, I still love doing it but that's maybe not what drives me

anymore—was in fact to have a project that would put me in that state of learning. I cared so much less about how I would see the piece when I was done with it, and so much more about, oh I know what to do day after day after day. That was really, really great for me. So that's an answer to your question. He could have written something similar more simply, but it would have robbed me of what I care about the piece. Now, are audiences prepared to hear this music? I have no idea. For some audiences this is old stuff, and they've been there and done that. When people say 'audiences' they often have a certain kind of audience or person in mind. And if you're talking about a mainstream audience, they probably won't overly respond to that. But that's ok. Like my dad, for example: I doubt very much that he would come in from the fields and say "what Ferneyhough piece are we gonna listen to tonight?" But that piece is not the answer to that kind of situation. And he would've probably dismissed a lot of other kinds of music. He knew what he needed and what he wanted. So I think that that's a little bit of a red herring. In other words, it presupposes a certain kind of audience, which I don't think is a wise idea, because audiences are normally varied. It presupposes a certain kind of need of the audience, if even the audience could agree on that. What I need late at night when I'm reading in the living room is very different from what I need at eight o'clock on a Saturday night at a concert. *Bone Alphabet*, if we're talking about that, is a sort of simultaneously overlay of different grooves. They're at different speeds, but every line has a constant regularity to it, or a sort of pattern. Just look at the second bar of the piece. Look at any bar of the piece. And first of all, if you play it well, you should be able to represent that quality. Brian [Ferneyhough], when I played it in the early days of rehearsals, he was jerking and physically responding like a head banger at a metal show. And then, I remember in the recording session, he was calling out errors in rhythm, or gestures of rhythm, and that has been my experience with him. You feel like it is ultimately a really physical music, and not gentle music. And I see it as an overlaid series of grooves at different tempos, that's one way, or there are constant regularities at opposing speeds. I think that is a good definition of *Bone Alphabet*.

Appendix B. Copyright Acknowledgements

Abe, Keiko — “Dream of the Cherry Blossoms”

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Ferneyhough, Brian — “Bone Alphabet”

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