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UNIVERSITY OF CALIFORNIA SAN DIEGO

Learning Strategies for Contemporary Music:
Rhythmic Translation, Choreography, and Instrumental Reconception

A dissertation submitted in partial satisfaction of the
requirements for the degree Doctor of Musical Arts

in

Contemporary Music Performance

by

Kathryn Schulmeister

Committee in charge:

Professor Mark Dresser, Chair
Professor Robert Castro
Professor Steven Schick
Professor Wilfrido Terrazas
Professor Shahrokh Yadegari

2022

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University of California San Diego
2022

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ACKNOWLEDGEMENTS

I would like to thank my committee chair and mentor, Professor Mark Dresser, and my committee members, Professors Steve Schick, Shahrokh Yadegari, Robert Castro, and Wilfrido Terrazas. Thank you all for generously supporting me with your guidance, artistry, and wisdom. I would also like to thank Aaron Cassidy for taking the time to meet with me for an interview. Finally, I would like to thank my parents, without whom none of this would have been possible.

VITA

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ABSTRACT OF THE DISSERTATION

Learning Strategies for Contemporary Music:
Rhythmic Translation, Choreography, and Instrumental Reconception

by

Kathryn Schulmeister

Doctor of Musical Arts in Contemporary Music Performance
University of California San Diego, 2022

Professor Mark Dresser, Chair

This dissertation documents and analyzes my learning strategies for preparing performance interpretations of three significant 21st century works that feature the double bass in prominent musical roles. In discussions of each work, I address how I strategized my learning methods given the unique challenges of each contemporary composition, and further explain how these methods depart from traditional methods of western musical training. In Richard Barrett's new work for solo double bass, *splinter* (2021), I discuss how I strategized the deciphering of complex rhythmic notation with multiple methods of rhythmic translation. In Rebecca Saunders' *Fury II* (2009) for

solo contrabass and ensemble, I discuss how I approached the learning process with a practice of physical choreography. In Aaron Cassidy's *Self Portrait, Three Times, Standing (15.3.1991–20.3.1991)* (2019) for mixed ensemble quartet, I discuss how I learned Cassidy's music with a process of instrumental reconception.

Introduction

This research project is a self-reflexive autoethnography of my creative music practice as a performer and interpreter of contemporary music. As a bassist living in the 21st century with a specialization in contemporary music performance, I am compelled to design my own unique methodologies to address the myriad of interpretive challenges that arise in the learning processes of innovative compositional scores. This dissertation includes a collection of personal learning strategies that I developed over the past five years as a graduate student at the University of California, San Diego. In this paper, I will discuss my learning strategies for three significant 21st century contemporary musical works that feature the double bass in prominent soloistic and ensemble roles. These learning strategies are by no means meant to be exhaustive nor are they intended to serve as pedagogical texts. Rather, this paper is offered as a contribution to the ongoing discussion of how a performer could consider designing their learning methods to fit the conceptual and musical demands of new works that have limited or no performance history.

In the chapters that follow, I will address how I strategized my learning methods given the unique challenges of each selected contemporary composition, and further explain how these methods depart from traditional methods of western musical training. In Chapter 1, I will discuss Richard Barrett's new work for solo double bass, *splinter* (2021), and explain how I strategized the deciphering of complex rhythmic notation with multiple methods of rhythmic translation. In Chapter 2, I will discuss Rebecca Saunders' *Fury II* (2009) for solo contrabass and ensemble, and describe how I approached the learning process with a practice of physical choreography. In Chapter 3, I will address Aaron Cassidy's *Self Portrait, Three Times, Standing (15.3.1991–20.3.1991)* (2019) for mixed ensemble quartet, and discuss how I learned Cassidy's music with a process of instrumental reconception.

Chapter 1: Learning with Rhythmic Translation

Barrett: *splinter* for contrabass solo (2018-2022)

Introduction

Richard Barrett (b. 1959 in Swansea) is an internationally acclaimed composer, performer, and scholar with a prolific output of innovative compositions for a variety of musical ensemble formats and technologies. His published writings on his own creative practice and research in contemporary musical thinking illuminate the perspective from which his compositions are conceived. His work encompasses a wide variety of approaches to composing for contemporary musicians, including graphic scores for structured improvisations, hybrid scores that include standard notation and guided improvisational sections, and completely traditionally notated scores that feature extraordinary amounts of both detailed and intellectually challenging material for performers to interpret both in terms of rhythmic and pitch content. Barrett also performs as a computer musician and improviser, which influences his compositional process and areas of interest. As a Welsh composer emerging in the late twentieth century, he has been both influenced by and associated with a cohort of British composers committed to a radical approach to composition, often referred to controversially as the ‘New Complexity’¹.

Although this trend of ‘New Complexity’ in music composition is often associated with the superficial appearance of their meticulously notated scores which pose monumental challenges for performers to interpret, musicologist Richard Toop argues that the true commonality among the artists involved in this movement lies in their shared deeper sense of motivation, of their experience as musicians living on the ‘fringes’ of Europe, outsiders in relation to the dominant

¹ Toop, Richard. "Four Facets of the New Complexity." *Contact* 32 (1988): 4-50.

European contemporary musical traditions in Germany and France. In his often-referenced article "Four Facets of the New Complexity", Toop writes:

I think the key lies in [James] Dillon's comment:

I tend to think that one of the reasons I found Xenakis fascinating was that we both come from the fringes of Europe.

The essence of all four composers [Michael Finnissy, James Dillon, Chris Dench and Richard Barrett], I believe, lies in precisely this 'fringe' notion, interpreted not in a negative, self-disparaging sense, but in a positive (albeit somewhat predatory) one. In *The Theatre and its Double*, Artaud claims that European theatre can only be revitalised by the radical incursion of non-European conventions and ways of thinking. He had in mind the traditions of Asian theatre; but for our four composers, as it seems to me, Britain too is sufficiently 'remote' for the invasion/assault to be artistically productive.²

As Toop suggests, the shared qualities of complexity seen in the notation of these composers is more indicative of a shared radical philosophical approach to composition rather than a shared artistic or aesthetic concept.

On the visual surface, Barrett's scores share notational characteristics with a whole host of compositions from various composers which feature assiduously notated rhythmic material, often utilizing multiple overlays of polyrhythmic ratios and irrational subdivisions of the governing tempo for the work. The composer most often associated with this trend in complex notation is British composer Brian Ferneyhough (b. 1943, Coventry), a mentor of Barrett's and a clear influence on Barrett in terms of radical instrumental composition.³ It must be noted, however, that each individual composer has their own unique artistic concepts and priorities, and the superficial similarities in their notational systems do not necessarily justify similar approaches to their

² Ibid.

³ Førisdal, Anders. "Radically Idiomatic Instrumental Practice in Works by Brian Ferneyhough." In *Transformations of Musical Modernism*, edited by Erling E. Guldbrandsen and Julian Johnson. Music since 1900, 279-98. Cambridge: Cambridge University Press, 2015.

interpretation and performance. For example, Ferneyhough's intention with his approach to writing rhythmic material is fundamentally different from Barrett's, and therefore could be considered differently from an interpretation and performance standpoint. As Toop articulates:

In Ferneyhough's work, though, the irrational values are generally a means of redefining the overall rhythmic flow from one bar (or beat) to the next and merely provide the framework for complexly sculpted internal rhythms. With the younger composers (and most drastically, perhaps, with Chris Dench) a more obvious model is Xenakis, and the aim is usually, as with Xenakis, to create different simultaneous pulses which are usually periodic and, far from seeking to redefine motion at the barlines, these periodic groups habitually go across them.⁴

As Toop points out, Ferneyhough's rhythmic ideas are often molded to create elegant complex relationships to the consistent pulse and profile of the meters with which he composes, while some of the younger generation composers such as Barrett employ compositional processes more similar to the stochastic methods of Greek composer Iannis Xenakis (1922-2001) and German composer Karlheinz Stockhausen (1928-2007), with their shared interest in generating varied simultaneous tempi within a piece. On the visual surface of the notated score, their collective works may appear similar to Ferneyhough's, but conceptually each composer works with their own personal ideas of how rhythm can be imagined.

Both Ferneyhough and Xenakis have composed significant solo works for the double bass, *Trittico per G.S.* (Ferneyhough, 1989) and *Theraps* (Xenakis, 1976). While both pieces pose tremendous challenges to the performer in terms of the rhythmic interpretation and technical virtuosity required to perform the demands of these works, the nature of how rhythmic ideas (temporal relationships) are conceptualized within each piece differ significantly. In Xenakis'

⁴ Toop, Richard. "Four Facets of the New Complexity." *Contact* 32 (1988): 4-50.

Theraps (1976) for solo contrabass, Xenakis uses stochastic principals to generate varied tempi within the work, which he overlays on a stable meter of 4/4 for most of the piece (see figure 1).⁵

Figure 1: Xenakis: *Theraps* (1976) for solo contrabass, measures 1-13

Xenakis creates a single musical line which morphs through acceleration and deceleration as it traverses the pitch range of the contrabass. Although the rhythmic material in *Theraps* is complex in that it frequently features bracketed polyrhythms within measures, it doesn't necessarily relate to the traditional profile of the 4/4 meter (i.e., it doesn't favor traditionally strong or weak beats).⁶

⁵ Xenakis, Iannis. "Theraps." edited by Editions Salabert, 1976.

⁶ Latham, Alison. *The Oxford Companion to Music*. Revised First Edition. Edited by Alison Latham. Oxford University Press, 2011. "The beats are usually categorized according to where they fall in the bar: as 'weak' beats (the second and fourth in a four-beat bar, the second and third in a three-beat bar, or the second in a

I assert that Xenakis is rather using the 4/4 meter as a convenient method to create a consistently measured extended temporal canvas upon which to articulate varied tempi generated by his stochastic theory and expressed through polyrhythmic subdivisions of the beat.

In contrast, Ferneyhough's *Trittico per G.S.* (1989) for solo contrabass presents an approach to rhythm that is not concisely linear but rather complex in its superimposition of multiple layers of rhythmic lines that intentionally disrupt and interfere with each other, all written within rhythmic relationships to carefully constructed meters that vary nearly every measure (see figure 2).

The image shows a page of a musical score titled "Trittico per G.S." by Brian Ferneyhough, dedicated to Stefano Scodanibbio. The score is for solo contrabass. It features complex, multi-layered rhythmic notation with various time signatures and dynamic markings. The notation includes many slurs, ties, and complex rhythmic figures that are difficult to transcribe precisely. The score is divided into measures, with some measures containing multiple layers of notation. The overall style is highly complex and experimental, characteristic of Ferneyhough's work.

Figure 2: Ferneyhough: *Trittico per G.S.* (1989) for solo contrabass, measures 1-7

In Ferneyhough's *Trittico per G.S.*, Ferneyhough creates intricately sculpted rhythmic phrases within the inherited traditions of a metric framework. In the authoritative article on the performance of Ferneyhough's iconic solo percussion work, *Bone Alphabet* (1991-92),

two-beat bar), or 'strong' beats (the first and, to a lesser degree, the third in a four-beat bar, and the first in a three-beat or a two-beat bar)."

percussionist Steve Schick explains that Ferneyhough does not conceive of the rhythmic material within the work as constantly varying tempi. Consequently, Ferneyhough advised the interpretation process to not involve the translation of polyrhythmic ratios into tempo values as a learning method to solve the rhythmic challenges.

On this subject, Schick writes:

In my conversations with Ferneyhough, he has clearly indicated his opposition to such tempo-based solutions to polyrhythmic composites. He maintained that polyrhythms conceived as modulations of speed cause a reorientation of the strong and weak beats that lend metric sense to a given passage.⁷

Schick's insight and Ferneyhough's scores both suggest that an artistic interpretation of rhythm within a Ferneyhough score may be dealt with differently than how one interprets rhythm in a Xenakis score. Although some notable complex rhythm experts including UC San Diego Professor Emeritus Edwin Harkins insightfully point out that elements of meter, tempo, and rhythm are theoretically equally interchangeable in how they can be notated and intellectualized⁸, Ferneyhough's sentiment in his conversations with Schick and the clear intentions of the principles guiding the compositional processes of Xenakis and Barrett suggest there is room for nuanced and individualized approaches in building personal interpretations of these varied pieces. In other words, there are multiple strategies that could be employed to realize the rhythmic challenges of these works, and I argue that it's useful to consider the artistic inspirations and conceptual intentions of individual composers when deciding how to navigate the process of learning and performing their works.

In Barrett's recent book publication, *Music of Possibility*, Barrett writes that his approach to composition is inspired by a drive to use music as a means of imagining new horizons and

⁷ Schick, S. *The Percussionist's Art: Same Bed, Different Dreams*. University of Rochester Press, 2006. P.104.

⁸ Vanoeveren, Ine. *Tomorrow's Music in Practice Today*. University Press Antwerp, 2018.

challenging our perceived artistic limitations, both within the musical works themselves and beyond. In reference to his own artistic priorities, Barrett writes:

My text was entitled “The Possibility of Music”, but proposed the idea of a “music of possibility”, with the intention of characterising a music which might seem a small and insignificant phenomenon within the musical world as a whole, but which is actually in some transdimensional way “*larger* than the profit-friendly musics which seem to surround it, because of the breadth of its imaginative horizons, and the freedom we have, both as musicians and as listeners, to explore them. This is one of the few real freedoms available to us, after all.” And it might serve, in however small a role, as some kind of emancipatory model for other areas of life.⁹

Barrett’s proclamation of imaginative freedom within the music he composes indicates that he intentionally departs from inherited traditions of Western art music in meaningful ways, which ideally creates a sense of explorative freedom for the performer and the listener to experience in his music. This is a critical point for a performer to understand in developing learning strategies for Barrett’s work. It must be understood from the beginning of the learning process that the experience of realizing and understanding the score will push the performer to venture into learning processes that prior traditional training may not have entirely prepared them for.

Regarding learning rhythmically complex contemporary scores, British pianist and contemporary music scholar Ian Pace writes:

Interpretative strategies need to be continually re-examined when learning a new piece or re-learning an old one. But at heart they represent a strategy of resistance in performance; resistance towards certain ideological assumptions that entail absorption of musical works into the culture industry. [...] This type of musical aesthetic, whereby musical works exist in a critical and dialectical relationship to wider experiences and consciousness (and by implication to the world), is to my mind one of the most important ways in which music can become more than passive entertainment. Looking hard at the relationship between notation, metre and time, is one of the most powerful ways of enacting this in practice.¹⁰

⁹ Barrett, Richard. *Music of Possibility*. Vision Edition, 2019. P.1.

¹⁰ Pace, Ian. "Notation, Time and the Performer’s Relationship to the Score in Contemporary Music." In *Unfolding Time. Studies in Temporality in Twentieth Century Music*, 149-92: Leuven University Press, 2009. P. 191.

Pace articulates how the act of strategizing the learning process for an interpretation which deliberately resists the gravity of inherited cultural assumptions has a palpable artistic value that comes across in performance, ideally by stimulating the audience into having an engaging, critical experience rather than solely passive listening. Pace further posits that the primary purpose of this type of music is to call into question the act of making music, the consciousness of the present moment, and to invigorate the senses with the experience of an unfamiliar territory. Therefore, the challenges posed by learning such a rhythmically complex score offer the performer the opportunity to create a unique learning strategy which intentionally departs from their prior training and questions the inherited cultural assumptions of how rhythm can be learned and performed.

As a composer and performer Barrett has experimented with various points of departure from the traditions of Western art music, with emphases on the four practices that he argues are of the most consequence in the development of twentieth century music:

- 1.2 the development of systematic composition methods;
- 1.3 the growing use of electronic and digital technology;
- 1.4 the evolution of improvisation towards independence from pre-existent stylistic/structural frameworks
- 1.5 a widening awareness of the geographical, historical and political dimensions of music.¹¹

In approaching the learning process for Barrett's *splinter* (2018-2022) for solo double bass, I argue that it is useful to consider which innovations Barrett applies in this specific composition and to be aware of his larger perspective on music making. For example, although the development of systematic composition methods defines the most critical aspects of *splinter* as an innovative

¹¹ Barrett, Richard. *Music of Possibility*. Vision Edition, 2019. P.1-2.

contemporary work, I would argue that understanding Barrett's performance practice as a computer musician and improviser should also influence the interpretation and performance of this work. In other words, although the focus of my learning process deals with the challenges of the score that emerge from systematic compositional processes, in the realization of the interpretation I exercise the right to make interpretive choices given my understanding of the intentions of the composer, which are informed by his various artistic values and practices. In practice, this means that I understand that the intention for his music is to evoke a sense of malleability and freedom in relation to the perception of the rhythmic material within the work, even though the score features meticulously notated highly complex rhythmic information that might appear rigid at a first glance.

***splinter* for contrabass solo (2018-2022) by Richard Barrett**

splinter (2018-2022) for solo double bass is directly related to one of Barrett's in-progress works for large-scale ensemble titled *PSYCHE*¹². The conglomerate work will feature several solo and chamber ensemble works that feature individual performers as well as small ensembles and provide short concert pieces that can be performed independently from the *PSYCHE* complete work. *splinter* for contrabass solo (2018-2022) is a new work for solo contrabass that was commissioned by the ELISION ensemble¹³ and dedicated to me with the intention that I would premiere the piece¹⁴ (and thus create the first interpretation of the work). In the program notes for

¹² *PSYCHE* was commissioned by the Australian ELISION Ensemble and will be premiered by the ensemble in the coming years.

¹³ Barrett's long-standing 30+ year relationship with the Australian ELISION Ensemble has produced numerous contributions of solo, chamber, and large ensemble music to the contemporary music repertoire.

¹⁴ I am currently in the process of learning and preparing my interpretation of this work. Unfortunately, due to the recent development of a stress fracture in my left hand I was unable to premiere this work before completing the writing of this dissertation, but I did engage with the learning process with enough depth and experience to be able to articulate and analyze my methods for the purposes of this study. The planned premiere date for *splinter* is early 2023 in Melbourne, Australia.

this work, Barrett writes: “*splinter* is derived from the solo part of *elsewhen* for contrabass and ensemble, which itself forms part of the conglomerate composition *PSYCHE*.”¹⁵

splinter 1

Richard Barrett
2018-22

Figure 3: Barrett: *splinter* (2018-2022) for contrabass solo, measures 1-7

At a first glance, the score for *splinter* (see figure 3) appears to be written in a language that I already know fluently and understand, a notation system which I have studied and practiced reading and interpreting for well over 20 years, with rigorous conservatory training at elite higher learning music institutions: standard Western music notation. Barrett’s score, however, uses the Western music notation system to represent highly detailed layers of complex rhythmic information in such a way that challenges a performer in their ability to intellectually understand

¹⁵ Barrett, Richard. "splinter." 2018-2022.

and technically execute the prescribed rhythmic material. Not only is the music not sight-readable in the sense that it is impossible to do a casual “read-through”¹⁶ of the piece (due to the rhythmic challenges), but it also requires a significant amount of creative deciphering, time, and attention to intellectually understand the notated material of each individual bar. Although it’s quite normal to come across passages in contemporary music that require extensive practice to execute, it’s another challenge altogether to have to solve the rhythmic problems of each individual bar just to simply conceive of how the rhythm might sound.

Although the pitch material of *splinter* similarly presents unique challenges to the performer, Barrett’s score is remarkable in its successful conception of the physical parameters of the double bass and how the notes will fit within a player’s hand position. Barrett even goes so far as to notate specific fingerings for passages that move about the full range instrument with rapid speed and varied durations. In this sense, given that Barrett’s fingerings work well, he makes the learning process more efficient for the performer than it would be otherwise. His notated fingerings take away the need for the time-consuming process of forming personal fingerings for the work, a process which requires trial and error and would undoubtedly require countless hours in addition to the numerous hours required to decipher the rhythmic material.

Aside from the gargantuan tasks of learning the rhythmic and pitch material of *splinter*, there are a select few moments of improvisational exploration that contribute to the form of the piece and provide a sense of poetic gesture to the seemingly ultra-rational score. At four distinct moments in the work, the scores indicates for the performer to explore gradual variations in timbre

¹⁶ In Pace’s article on the relationship between a performer and a contemporary music score, Pace refers to the common practice of sight reading through a score at the beginning of a learning process as a chance for a performer to get an overall general sense of the piece. Pace, Ian. "Notation, Time and the Performer’s Relationship to the Score in Contemporary Music." In *Unfolding Time. Studies in Temporality in Twentieth Century Music*, 149-92: Leuven University Press, 2009.

(see figure 4) in an unmetered duration (between 24-50") in a manner which Barrett describes as "...shouldn't be separated from the sounds around them, but should emerge as if taking place continuously below the music's audible surface."¹⁷ This instruction not only evokes a highly imaginative soundscape for the performer to draw upon in shaping their interpretation, but also suggests to the performer that the same exploratory spirit could be evoked in character from the metered material that makes up the majority of the work.

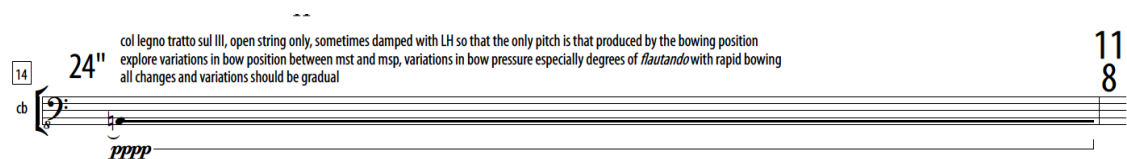


Figure 4: Barrett: *splinter*, measure 14

In several key moments of the work, Barrett composes a few passages for the bassist to perform three and/or four simultaneous musical lines across three and/or four strings, which approaches the brink of being technically impossible, however there are strategies for creating the effect of playing across the four strings. Barrett's score invites this sort of strategy in that it clearly notates parts of the lines that should be favored or played on certain strings, and exactly when to alternate the bow between different combinations of strings (see figure 5, measure 23). Although Barrett writes glissandi to be performed with the left hand, the alternating articulations of the right hand (the bow) will render the sound of the passage somewhat indeterminate and therefore gestural in form rather than strictly precise. The result is a unique timbral gesture that inhabits a musical

¹⁷ Barrett, Richard. "splinter." 2018-2022.

space somewhere between the hyper precise single line notation that makes up most of the piece and the few unmeasured open exploratory passages.

Figure 5: Barrett: *splinter*, measures 22-24

Overall, then, I conceive of *splinter* as an 8-minute solo piece with five sections separated by unmeasured periods of timbral exploration. The first section (from measures 1-14) articulates a single melodic line, which frenetically inhabits a flexible rhythmic grid and expresses the pitch and dynamic range of the bass with rapid fluidity and agility, often with brief yet sizable glissandi. The second section (from measures 15-24) departs from the linear nature of the first section by articulating short gestures that chaotically alternate between different registers of the instrument. The second section also features moments where short gestures are rapidly performed by alternating strings within a close range of pitch, and introduces a variety of timbres, rhythmic, and gestural figures that contrast the singular nature of the first section (see figure 5). Although the

second section also features glissandi, much more of the material in the second section is focused on the complex sonorities that emerge from the playing of multiple strings simultaneously and or back and forth in close succession. In the third section (measures 26-32), the texture of the work initially thins out to soft articulations of harmonics high in the double bass pitch range. In the middle of the third section, the score gives the performer an extensive opportunity to explore the triple stop of playing clustered pitches across the second, third, and fourth strings. The third section finishes with another flourish of high harmonics in fleeting glissandi gestures. The fourth section (measures 34-58) introduces two new types of material: fast slurred lines in stepwise motion or alternating thirds (with various quarter tones), and repeated alternations between multiphonics with slight variations and articulations of the open fourth string. As the fourth section progresses, the material becomes more varied and reminiscent of the prior sections save for the presence of single isolated articulations of varying textures including pizzicati¹⁸ and accented double stop harmonics¹⁹. The fifth and final section (measures 59-75) of *splinter* integrates multiphonics into a continuous stream of rapidly alternating notes which dramatically alter with varying intervallic relationships. The energy output required to perform this section suggests that measures 62-64 (see figure 6) are a climactic point of expression for the entire work. Measures 65 to the end could be interpreted as a coda, with brief references to gestures and material introduced earlier in the work, and a final continuously descending passage spanning the very last six measures of the work.

¹⁸ Barrett, Richard. "splinter." 2018-2022. Measure 46

¹⁹ Ibid. Measure 49.

The image displays three staves of musical notation for measures 62, 63, and 64 of a piece titled 'Barrett splinter'. The notation is highly complex, featuring numerous accidentals, ties, and dynamic markings. Above the staves, there are extensive fingerings (I-IV) and rhythmic values (e.g., 3, 16, 7, 8, 10, 8, 2, 8) that likely represent the performer's interpretation of the piece's intricate rhythms. The score includes dynamic markings such as *mf*, *p*, *mp*, *f*, *pp*, and *ff*. The notation is written in a system with a common time signature, and the key signature is one flat (B-flat). The measures are numbered 61, 63, and 64, with measure 62 being the first staff, 63 the second, and 64 the third.

Figure 6: Barrett splinter, measures 62-64

In the sections that follow, I will explain how I used multiple processes of rhythmic translation as a primary learning strategy for creating my performance interpretation of Barrett's *splinter*.

The process of rhythmic translation

At the start of my learning process, I found that the most immediate and acute challenge of preparing an interpretation of Barrett's *Splinter* is learning to understand and technically perform the rhythmic material in the score. I say this because the notes themselves are not unknown values to me, and at the beginning of the learning process I immediately understood how to play the notes on the score, but I did not immediately understand how to approach representing the rhythms.

The rhythmic challenges posed by Barrett's score far surpass the traditional range of complexity that is typically encountered in contemporary music, although not unprecedented as earlier discussed in this chapter. The challenge lies in the multiple layers of rhythmic information within the score that the performer must decipher, intellectually understand, and physically be able to execute with an accuracy that can be perceivable by a listener. As percussionist Professor Steve Schick writes in his essay on learning Ferneyhough's notoriously rhythmically complex *Bone Alphabet*: "Learning is measured by a palpable change of state: you have learned if you can do, think, realize, or notice something that you formerly could not."²⁰ As Schick eloquently points out, the goal for my learning process with *splinter* is to be able to intellectualize and physically represent the material on the score. The research question lies in how to get to the point of understanding and execution, and there are multiple paths that one could take in getting there.

Since the starting point of the learning process creates a situation where a performer cannot initially intellectually understand and therefore cannot physically represent the rhythmic material on the score, the learning process must take on a strategy of rhythmic translation for the performer to be able to understand and learn to reproduce the information. Rhythmic translation, meaning to express the rhythms notated into different, more comprehensible terms²¹, can work in different ways. As UC San Diego Department of Music Professor Emeritus Ed Harkins explains, meter, tempo, and notated rhythm can all be interchangeable to produce the same sounding result. Therefore, a performer could use this knowledge to translate one of those terms into another. For example, a performer may not be able to simultaneously calculate multiple layers of polyrhythmic

²⁰ Schick, S. "Learning *Bone Alphabet*". *The Percussionist's Art: Same Bed, Different Dreams*. University of Rochester Press, 2006. P.92.

²¹ Merriam-Webster. "Translate". Merriam-Webster Dictionary Online, 2022. <https://www.merriam-webster.com/dictionary/translate>

relationships, but they could translate a single ratio of rhythmic information into a tempo value calculated to accurately represent one layer of polyrhythmic information.

In the case of addressing the rhythmic challenges of Barrett's *Splinter*, I decided to use multiple methods of rhythmic translation to help me learn to interpret and perform the rhythmic material. The methods I used included translating meters of single measures into multiple shorter sub-measures, translating polyrhythmic ratios into tempi, and translating the durations of groups of notes into rhythmic subdivisions of tempi. All these methods combined allowed me to strategize how I would learn to translate the rhythms of the score into my performance on the contrabass. In the section that follows, I will provide detailed examples of how these specific methods of rhythmic translation worked in deciphering the rhythmic challenges in Barrett's *Splinter*.

Although these processes of rhythmic translation may seem to conceptually diverge from the ideas presented in the musical score, Barrett himself thinks of the musical ideas in terms of tempi relationships, and I would argue this approach is not only efficient and precise in the learning process for the performer, but also philosophically aligned with Barrett's intention for the rhythmic profile of the work. Regarding his compositional approach to rhythm, Barrett writes:

The presence of "complex" or "irrational" rhythmical subdivisions, sometimes nested within each other, is a frequent (although not omnipresent) feature of my notated compositions. Usually, they function to generate flexible rhythmical grids, [...] where streams of activity (different instrumental parts, or different voices or layers within a single part) might be coordinated with or discoordinated from one another to varying degrees.²²

As Barrett writes, his compositional intention is to create flexible rhythmic subdivisional grids which allow for moments of coordination, non-coordination, and heterophony among multiple ensemble parts or within a complex/polyphonic solo instrumental part. Barrett applies

²² Barrett, Richard. *Music of Possibility*. Vision Edition, 2019. P. 19-21.

two principal systems to create this musical structure: a hierarchical approach and a non-hierarchical approach. For the hierarchical approach, Barrett takes inspiration from Clarence Barlow's book, *Bus Journey to Parametron* (1980), and systematically generates a probability gradient²³ between simple subdivisional ratios, which are then expressed as metric modulations of a consistent pulse. For his non-hierarchical approach, Barrett composes subdivided durations that are distinct in tempo from their adjacent notes, using a logarithmic scale of durational values to generate rhythmic values. In both cases, the perceivable musical effect is a sense of rapidly changing tempi, from note to note and from measure to measure as well.

With this understanding of Barrett's compositional intentions, I needed to decide how I would strategize learning and performing the score as it maps highly detailed notated material onto a flexible rhythmic subdivisional grid. I needed to find a way to communicate a common pulse and a sense of notes flexibly aligning with or swerving around that common pulse in a highly varied and unpredictable way for the listener to potentially be able to perceive. I believe that Barrett is inspired by the freedom of movement that exists in the natural world and emulating that with his highly complex rhythmic material. Therefore, my task as a learner was to find a way to be accountable for both the rigorous structure that the score provides while also embodying the spirit of freedom and possibility that inspires Barrett's work.

Examples of rhythmic translation in Barrett's *splinter*

Throughout *splinter*, many of the measures contain a relatively large number of beats within an odd meter and are challenging to intellectually track in performance given the additional

²³ In this context, a probability gradient refers to a rate of change in the durational value of notes.

and more pressing task of interpreting the immense amount of rhythmic information written within the lengthy individual measures. For example, in the very first measure of *splinter*, the meter of the bar is 18/8 (see figure 7), which on its own isn't necessarily a difficult meter for a performer to intellectualize, but given that Barrett intends to create flexible subdivisional grids for rhythm in his work, it naturally follows that after the first note of the piece (which begins on the first beat of the measure, or the “downbeat”), none of the subsequent notes in the measure are articulated on a subsequent eighth note beat of the measure.

splinter 1

Richard Barrett
2018-22

cb $\text{♩} = 72$ 18 8 *pp* 7:6 4:5 8:7 5:6 6:5 6:7 *fff* nat 23 16

Figure 7: Barrett: *splinter*, measure 1

In theory, the rhythm problems that present themselves in measures such as the first measure could be manageably addressed with traditional learning methods of breaking down the measure into chunks and learning the polyrhythmic relationships in isolation. This process could then be followed by a process of embodying the rhythmic material and committing the material to memory, slowly assembling the rhythmic material of the measure together in a string of memorized events practiced in isolation. The reality of the learning process, however, proved to be more challenging than a theoretical one. In my initial practice sessions and meetings with my advisor, Professor Mark Dresser, I rehearsed with a custom made click track that featured 18 beats for the first measure, and I would frequently get lost in the middle of the measure and end up adding or

subtracting a beat at some point in the measure. It was clear from the beginning of the learning process that I needed to find a solution to help me train my ability to track the rhythm accurately throughout the measure of 18 beats.

Tracking the 18/8 meter of the first measure became a performance challenge for me by the second eighth note of the bar, where most of succeeding notes are articulated not only in misalignment with the recurring pulse of the measure (the eighth note), but also with varying polyrhythmic relationships dictated by odd and irregular subdivisions of the common beat. By the end of the second beat of the first measure, the rhythm notated indicates a bracketed 7:6 relationship for the underlying rhythmic figure, meaning that the speed of the 32nd notes within that bracketed figure should be articulated within the timeframe of what would be equal to six 32nd notes at the governing tempo of the measure (in this case, an eighth note = 72bpm). Thus, the tempo of the bracketed figure has a relationship of 7:6 to the governing tempo of the measure. To understand and clearly execute the notated rhythm of this polyrhythmic relationship, the performer must not only keep track of the governing pulse of the measure and how each note relates to that pulse, but also intellectualize and physically mark the rhythmic tempi of the 7:6 relationship as it begins and ends on subdivisions of beats within the measure.

To begin the process of breaking down the material into smaller, more familiar, and thus more comprehensible information, I first made annotations to the score by dividing individual measures into smaller sub-measures. Therefore, I had to choose points to divide the measure into shorter sub-measures where I felt I could accurately relate to and align with as precisely as possible to new downbeats. This process took some trial and error, and at times, I would edit the decisions that I made if I found after a process of experimentation that the re-organization of the measure didn't work well. For the first measure of *splinter*, I decided to divide the measure into three shorter

sub-measures. I translated 18/8 (original meter) into $7/8 + 5/8 + 6/8$ (see figure 8). I also calculated how the polyrhythmic material in the measure would relate to the eighth note pulse of the measure and marked in my score an approximate visualization of where the eighth notes I would hear in the click track would align with my performance of the rhythm articulated on the page. Thankfully, Barrett takes great care and works with an extraordinary attention to detail in how accurately spaced his notation of rhythms appears on the page, so I found my annotations of writing in lines to mark the pulsed beats of the bar in line with the notational spacing of the score.

splinter 1

Richard Barrett
2018-22

The image shows a musical score for a piece titled "splinter" by Richard Barrett, dated 2018-22. It is measure 1, written in 18/8 time. The score is divided into three sub-measures with durations of 7/8, 5/8, and 6/8, indicated by blue handwritten annotations and vertical dashed lines. The notation includes various rhythmic values, accidentals, and dynamics (pp, fff). A yellow highlight marks the end of the measure with "nat" and "fff". The score is written on a single staff with a common time signature of 18/8.

Figure 8: Barrett: *splinter*, measure 1, with K.S. annotations

Translating the meter of 18/8 into three shorter sub-measures allowed me to conceptualize the measure into more comprehensible chunks that I could track with more consistency and accuracy than I could with the original bar of 18/8. I made decisions about how to divide the bar based on several factors. Most importantly, I attempted to annotate and draw new bar lines where I believed I could most accurately align the rhythm written on the score with both my execution and the reference that I would use to monitor the accuracy (whether that was counting in my mind or using the external reference of a metronome/click track). By narrowing my focus on how I counted the rhythm within each bar, I immediately noticed that I was able to train my mind and body to be able to perform the notated rhythms with much more accuracy and consistently.

Although it may seem that translating the 18/8 meter into three shorter sub-measures could potentially alter the phrasing of the measure (it is clear from the score that Barrett intends to create a gradual consistent build of dynamic intensity and timbral evolution from the precise start to finish of the measure), I argue that it's possible to take into consideration how the phrases are constructed, and to phrase across the annotated bar lines to make the intended shape of the composition. In the same way that one could connect the material of multiple measures under a phrasing line, a performer can make the full phrase of the 18/8 bar come to life while using the translated meters for more rhythmic accuracy.

This method of meter translation combined with the use of a custom made click track that I built for practicing and learning this piece (which I will discuss in much more detail in a subsequent section) allowed me to practice aligning certain rhythmic landmarks in the measure to gauge my accuracy and understanding of the rhythm as I practiced. Since I quickly found this method of meter translation to be effective, I continued to apply this process to the rest of *splinter* as was necessary, which given the hyper complexity of the piece proved to be necessary in nearly every measure of the work.

In the second measure of *splinter*, I applied nearly the exact same strategy that I applied in the first measure in that I broke down the long measure into three shorter sub-measures, however since the second bar has not only an odd meter but also a different subdivision of the pulse marked by the meter of the bar, my approach slightly altered to fit the exact rhythmic challenges of the second measure. In measure 2, the meter of the bar is 23/16 (see figure 9), however the tempo (indicated as a tempo change in the score) is expressed in eighth notes as an eighth is equal to 81bpm. Given that the tempo is both faster than the initial tempo of the piece and expressed in eighth notes, I decided to once again build the click track in eighth notes for the majority of the

in sixteenth subdivisions.

23 16

psp

msp

4:5

6:5

3:2

7:6

f

ppp

cb

2

11 16

Figure 9: Barrett: *splinter*, measure 2

equals 81bpm.

The musical score is for "The Great Wall" from the film "The Great Wall of China". It features a single melodic line in bass clef, starting at measure 23. The tempo is marked as quarter note = 81. The dynamics range from ppp (pianississimo) to f (forte). The score includes various articulations such as accents, slurs, and breath marks. There are also handwritten blue annotations above the staff, including numbers like 5, 8, 16, and 17, which likely correspond to specific measures or rhythmic patterns.

Figure 10: Barrett: *splinter*, measure 2, with K.S. annotations

In the third measure of *splinter*, I continued to apply my method of breaking down measures into shorter sub-measures, and I also applied a new process of translating polyrhythmic material into distinct tempo values for part of the measure. Within measure 3 (see figure 11), there is a bracketed rhythm which indicates that the durational value of the nine notated 32nd notes within that bracket should occur within the exact time frame of seven 32nds at the governing tempo of the bar (in this case, eighth note = 81bpm, or sixteenth note = 162bpm).

Figure 11: Barrett: *splinter*, measure 3

Considering that not only would the 9:7 ratio be extremely challenging for me to intellectualize and technically perform, but also that within that bracket there is also another indicated polyrhythmic ratio of 5:4 (expressed in sixteenth notes), I decided to translate the 9:7 ratio to a new localized tempo of 208.3 bpm for the bracketed material. I calculated the new tempo by solving for the tempo variable of the bracketed 16th note as it relates in a 9:7 ratio to the original 16th note tempo of 162 bpm (calculated from the tempo marking of an eighth note is equal to 81 bpm). The equation to solve for the tempo (x) of the new 16th note within the bracketed material in measure 3 works as follows:

$$9/7 = x/162$$

$$7x = 9 \times 162$$

$$7x = 1,458$$

$$x = 208.3^{24}$$

With the tempo of the 16ths within the bracketed material calculated, I could then learn the rhythmic material within the bracket as it relates to the new tempo of 208.3, rather than as a ratio of 9:7 to the original tempo of the measure. I combined this method of rhythmic translation, in this case rhythmic ratio to tempo, with the meter translation method. I divided measure 3 into three shorter sub-measures, 2/16 + 9/16(with the new tempo of 208.3) + 2/16 (see figure 12). To clarify, the two 2/16 measures that frame the 9/16 measure are both in the original tempo of the section, with the sixteenth note equal to 162 bpm. The reason that I decided to create two 2/16 bars instead of two 1/8 bars is because I needed to understand the sixteenth subdivision of the eighth note in order to perform the written material of the measure (i.e., I didn't have the temporal context to be able to perform those rhythms accurately without subdivision). In theory, I could memorize the eighth note tempo and perform a subdivision of that tempo but given that tempi for this piece change rapidly and nearly every measure, I felt it was more time efficient and technically accurate to train myself to think in sixteenth notes for this measure.

²⁴ 208.3 is rounded up from the real solution of 208.285714

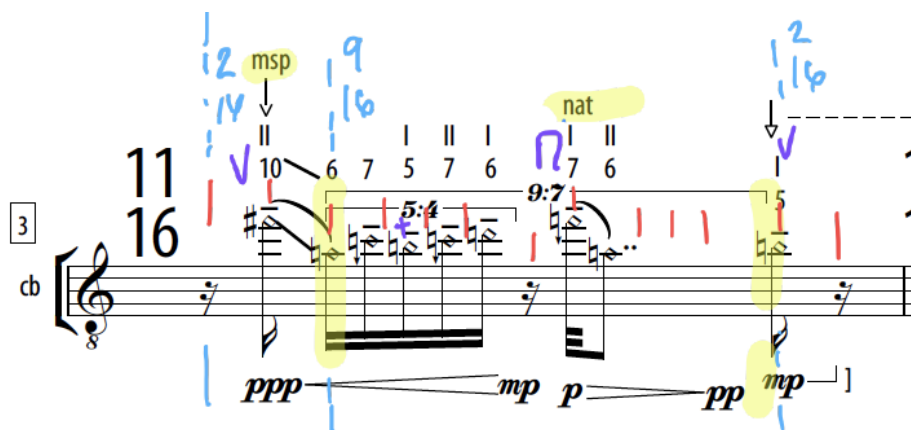


Figure 12: Barrett: *splinter*, measure 3, with K.S. annotations

I applied the exact same method of rhythmic translation in measure 9 as I did in measure 3. Measure 9 (see figure 13), a measure of 21/16, features three separate brackets with varying rhythmic ratios.

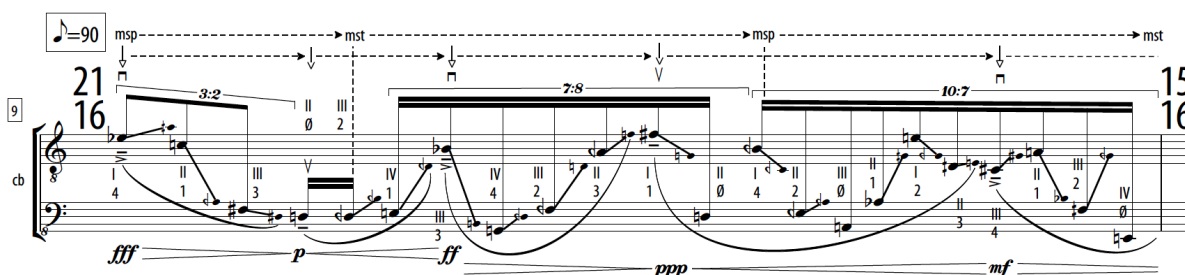


Figure 13: Barrett: *splinter*, measure 9

Since the first ratio of 3:2 in terms of eighths notes is a standard polyrhythm that most musicians trained in Western music can perform by memory, I decided not to calculate the new tempi for the bracketed material at the beginning of the measure and instead grouped together the first three

eighth note beats of the bar as the first sub-measure of measure 9. I then calculated the tempi of the new sixteenth notes within the following bracketed material with the ratios 9:7 and 10:7 and created sub-measures of 7/16 and 5/8 for the rest of measure 9, with the sub-measures beginning at the start of each of the bracketed sections. I decided to make the third sub-measure of measure 9 a 5/8 bar instead of a 10/16 bar because the tempo of the new sixteenth note was 257.2 bpm and I found it be more effective to subdivide the new eighth note pulse of 128.6 bpm as a reference tempo instead.²⁵ Therefore, measure 9 (see figure 14) became a measure of 3/8 + 7/16(new tempo of 157.5) + 5/8 (new tempo of 128.6).

Figure 14: Barrett: *splinter*, measure 9 with K.S. annotations

The methods I've explained and exemplified with my analyses of measures 1, 2, 3, and 9, apply to most of the rhythmic challenges in *Splinter* save for the cases in which I needed to apply the third method of rhythmic translation: translating the durations of groups of notes into rhythmic subdivisions of tempi. This third method first became necessary in strategizing an approach to learn the rhythmic material in measure 13, and subsequently became useful for more occasions in

²⁵ In practicing with a click track, I've learned that at a certain point, if the metronome click is too fast, it can be very difficult to respond and play along with. In some cases, a click track sounding the subdivision of a beat works best, and in others the more effective approach is to have the click mark groups of beats or subdivided beats.

the subsequent parts of *splinter*. Measure 13 (see figure 15) presents an unprecedented rhythmic challenge within *splinter* in that it features a string of rapid notes (entirely made of variations of sixteenth and thirty-second notes) in groups of either odd numbers or within brackets notating polyrhythmic ratios to odd numbers of beats or subdivided beats within the bar. This presents a situation where neither a meter translation nor a translation of polyrhythmic ratio to tempo solves the problem of creating a comprehensible translation of the rhythmic material for the understanding and performance of the measure.

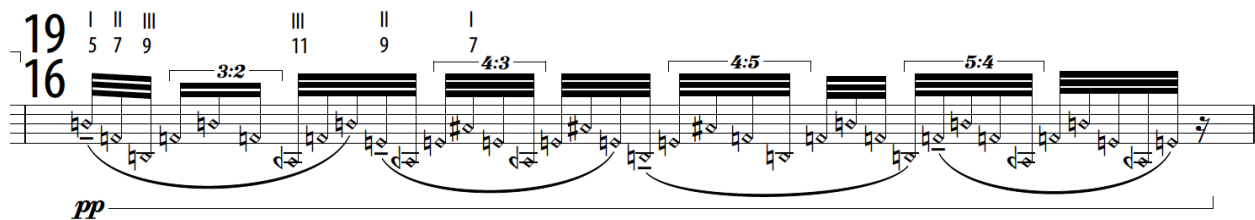


Figure 15: Barrett: *splinter*, measure 13

To solve this problem, I decided to use a process of translating the duration of groups of note values into tempi, in order that I could then understand the note values as subdivisions of the calculated tempi, rather than in relation to the governing tempo of the bar. For the groups of notes that were direct subdivisions of the governing tempo (an eighth note equal to 81bpm), I grouped the notes together based on their notational barring (connection by notational stem) and calculated the total duration of the grouped notes. For example, the first three thirty-second notes of measure 13, each with an individual durational value of 324 bpm, could be instead interpreted as three equal subdivisions of a single beat of 108 in value (equal to a dotted sixteenth note). With this same process, I calculated the durational value of each group of notes within the measure, which solved the rhythmic problems of the bracketed polyrhythmic note groupings within the bar. For the note

groupings written within the brackets of 4:3, 4:5, and 5:4, I calculated the durational value of each bracketed group, which then allowed me to interpret the rhythm as equal subdivisions of the calculated duration. For example, in the portion of the measure where there are four thirty-second notes written under a bracket that indicates the polyrhythmic ratio of 4:3, I calculated that the duration of the group of four notes needed to occur within the same duration as three thirty-second notes at the governing tempo of the bar (which also happens to be the same duration as the first note grouping of the measure), therefore, those four notes could be interpreted as four equal subdivisions of the pulse 108 bpm. I applied the same process of translating the duration of groups of note values into tempi for the entire measure and added an additional pulse for the duration of the sixteenth rest at the end of the measure (see figure 16). Measure 13, originally a 19/16 measure, became a measure of 10 beats of varying durations defined by rates of bpm: 108 + 81 + 64.8 + 108 + 81 + 64.8 + 108 + 81 + 64.8 + 162.

Figure 16: Barrett: *splinter*, measure 13 with K.S. annotations

In practice, I had to train myself to memorize the tempi to perform the various subdivisions of unprecedented, individualized pulses. The most important feature of this solution, however, proved to be just the ability to intellectually understand how to approach the rhythms with confidence and measurable accuracy.

With the tools of multiple methods of rhythmic translation that I developed in the first part of *splinter*, I successfully integrated all three methods into measures that presented multifaceted rhythmic challenges and complexities. Measure 23 (see figure 17) is an example of some of the most complex rhythmic puzzles that need to be deciphered in *splinter*.

Figure 17: Barrett: *splinter*, measure 23

The primary challenge with measure 23 is that beyond the complexities of the playing techniques involved (multiple stops, microtones, artificial harmonics, etc.), there are multiple layers of polyrhythmic ratios nested within each other within an already challenging meter of 23/16. My strategy in deciphering the rhythmic material within measure 23 was to first address the nested polyrhythms of 8:10 and 6:4 within the bracketed polyrhythm of 8:7. Within this one bracket of material, I combined all three methods of rhythmic translation: First, I translated the 8:7 into three sub-measures of $5/32 + 6/4 + 3/23$. Second, I calculated the durational value of the 8:10 grouping of notes (82.28bpm) and the value of the three thirty-second notes into a tempo value (137.13bpm) for a single beat that could then be subdivided by the notes within the groupings (82.28bpm), and third, I calculated the tempi for 6:4 material such that the eighth note pulse (154.3bpm) for the 3/8 sub-measure covering that grouping would reflect the accurate tempo given the multi-layered

polyrhythmic information within the score. After organizing a strategy for this bracket of material, I then addressed the rest of the measure, which still featured numerous other complexities and challenges. Over the course of the entire measure, I translated the 23/16 meter into nine sub-measures (see figure 18) with the meters of $3/8 + 3/16$ (click for whole bar equals 80bpm) + $1/16$ (new tempo of 240) + $1/16$ (new tempo of 180) + $1/8$ (new tempo of 90) + $5/32$ (click for whole bar equals 82.28bpm) + $3/8$ (new tempo of 154.3) + $3/32$ (click for whole bar equals 137.13bpm) + $5/16$ (new tempo of 150).

Figure 18: Barrett: *splinter*, measure 23 with K.S. annotations

For the first bracketed material of the measure, I calculated the tempo of an eighth note in the 3:2 bracket as 135bpm, which helps with the subdivisions of the individual eighths within the bracket. In the second bracketed material of the bar, a 7:6 bracket is nested within the 4:3 bracket. In this case, I divided the 4:3 bracket into two sub-measures and solved the challenge of the nested 7:6 bracket by calculating the duration of the entire group of seven thirty-second notes, which came out to be equal to the durational value of 1 beat at 80 bpm. With this solution, I annotated the score by translating the 7:6 into a bar of 3/16 and decided to only reference the entire duration of the bar

with one beat of 80bpm. Therefore, I could understand and practice interpreting the rhythm as seven equal subdivisions of a single beat of 80bpm. Given that the final sixteenth note within the 4:3 bracket is not a part of the 7:6 bracket, and it does not share a durational value nor a comprehensible relationship to the preceding rhythmic material, I decided to give that note a dedicated individual sub-measure and pulse (a sixteenth equal to 240bpm) calculated to reflect the 4:3 relationship to the tempo of the measure. I also decided to give the subsequent sixteenth note similar treatment and annotated the measure to include a second 1/16 measure, with a pulse reflecting a sixteenth note at the governing tempo of the measure, 180bpm. For the following 3:2 bracket, I decided to make the bracketed material fit within a sub-measure of 1/8 at the tempo of the measure, 90bpm. For the final bracketed segment of measure 23 I translated the 5:6 ratio to a new tempo of 150 for the sixteenth note within the bracketed material and annotated the score to make the last note grouping of the bar a sub-measure of 5/16.

I applied these three strategies of rhythmic translation (meter translation, polyrhythmic ratio translation, and durational grouping translation) to the entire score of Barrett's *splinter* and made decisions about which methods to use based on the specific challenges of each measure. In the sections that follow, I will describe how I built the click tracks for learning *splinter*, my practice strategies, and my conclusions about the learning process.²⁶

The method of creating and practicing with customized click tracks

Once I had designed a system for understanding the rhythmic materials of the measure in a way that I not only intellectually understand, but also potentially be able to reproduce through playing on my instrument, it became clear that building a click track would be necessary to have a metronomic tool to practice with. Although a traditional metronome could produce close to all

²⁶ It should be noted that due to a serious performance injury, the learning process is still ongoing as of summer 2022. The anticipated premiere date of *splinter* is early 2023.

the tempi that I need for this piece, there are two major problems with using a traditional metronome: 1. A standard metronome would not be able to represent the fractional nature of the tempi calculated as translations of rhythmic ratios and 2. A standard metronome would have to be manually adjusted to change the tempo, therefore it would be impossible to practice the entire third measure, or any significant passage of the piece with a standard metronomic reference for accuracy. Although it could be argued that it isn't necessary to have a metronomic reference in order to memorize these tempi and put together an interpretation, given the accessibility of technology today, the hyper-precise nature of the notation, and the knowledge that Barrett intends for the tempi of individual notes, beats, and measures to be perceptibly varied, I decided to build a customized click track to help me learn the rhythms of *splinter* with the most precise and objectively measurable tools possible.

I realize that this approach of creating a click track may seem counterintuitive to the spirit of freedom and imaginative horizons that inspires Barrett's music, but I do not think the two ideas are mutually exclusive. In the same way that it is common to use a metronome for training a performer's understanding of a common pulse or as a tool to develop rhythmic accuracy, I too need to use an external resource to aid in my intellectual and physical training in my learning process of *splinter*.²⁷

I made the decision to build my own click tracks for *splinter* as a tool not only for learning to intellectualize and technically perform the rhythmic material of this work, but also as means for assessing my precision along the way. Given that Barrett intends to create perceivable changes in

²⁷ It should be noted that both Steve Schick and Ian Pace argue against using click tracks for the preparation of works of different composers with similar rhythmic challenges to the ones found in Barrett's work because they believe that playing along with a computer-generated metronomic track could potentially rob the performer of the artifacts of humanity and freedom of timing in interpretation that should not only be allowed but also celebrated and emphasized in performance. I completely understand and respect this point of view, however I still feel that click tracks work well in aiding the learning process for Barrett's *splinter*.

tempi in his creation of flexible rhythmic grids, I believe that my approach of translating complex rhythmic material into specific tempi applied locally to the measures, partial measures, or even single beats, is appropriate and effective for realizing the complex nature of this piece. Not only did my method of making a comprehensive click track for this work apply to creating the fully realized performance of the piece, but it also helped me design a practice strategy in which I could use the click tracks at various speeds to slowly intellectualize, embody, and learn the rhythmic material of the piece in small chunks. I then continued with a process of gradually string together larger segments of material and gradually increased the tempo of the click track as I practiced bringing smaller sections up to the performance tempo.

I generated the click tracks by working with version 3.1.3 of Audacity®²⁸ recording and editing software. There are several advantages to using a digital audio workstation to create a personal click track for practice purposes. The first is that you can easily manipulate and edit aspects of the click track, from determining the number of preparatory beats in a track to the frequencies²⁹ of the downbeats (first beats) of individual measures vs the remaining beats. The second is that you can create rhythm tracks with fractional values, meaning that I could build a metronomic track for myself which included the details of my calculated solutions for rhythmic challenges, down to the 10th of a bpm. The third and most important advantage of this method is that it's possible to create a compilation of all the changing tempi and meters of the work; there is no technical limitation to creating a specific metronomic track for the entire work. In other words,

²⁸ Audacity® software is copyright © 1999-2021 Audacity Team.
Web site: <https://audacityteam.org/>. It is free software
distributed under the terms of the GNU General Public License.
The name Audacity® is a registered trademark.

²⁹ I found in my early practice sessions that I needed to adjust the frequencies of the click track such that the first beat of every measure was significantly higher than the remaining beats to aurally register and follow the click track as I simultaneously focused on performing the specific notes and techniques in *splinter*.

with the combination of my rhythmic translation strategies and the computer technology of digital audio workstations, I could create a tool that could help me precisely gauge my understanding and performance of every rhythmic challenge posed in *splinter*. Some musicians might argue that this method seems to exert hyper rigid control over learning the rhythms of a score that was never intended to be performed by a computer. I, however, feel an immense relief and sense of empowerment in knowing that I have a method that will undoubtedly train my mind and body to precisely understand and perform the rhythmic material of *splinter* to the best of my ability. I am confident that the creativity in interpretation and performance is not sacrificed because of this learning strategy.

Methods of practice

There are two main strategies that I developed to begin the process of mapping the rhythmic complexities of *splinter* onto my physical muscle memory to build my performance interpretation of this work. The first strategy was to meticulously plan how I would learn chunks of material, and how exactly I would put together progressively longer passages until I eventually could perform the entire work. The second strategy was using the computer application Transcribe! Version 8.75.2³⁰ to easily manipulate the speed with which I could play the click track, making it possible to slow down and speed up the click track with subtle speed adjustments.

Given the extraordinary challenge that each individual measure presents in *splinter*, I decided it was necessary to make separate click tracks of every single individual measure to learn each measure separately, one at a time. Since it's helpful to be able to hear a few repeated beats of a given tempo before one begins to play in reference to that tempo, I created 4 preparatory beats

³⁰ Transcribe! Version 8.75.2 for Mac. Copyright © 1998-2020 Seventh String Software. All Rights Reserved.
www.seventhstring.com

for each individual click track of each measure. The preparatory beats always correspond to the tempo reference of the beginning of the bar, even if it's a translation from a polyrhythmic ratio.

Once I made individual click tracks for each measure, I then created click tracks for short passages of two to several measures, depending on the complexity of the material. For the click tracks for shorter passages, I also created four preparatory beats for each track with the same principle as applied in creating the click tracks for individual measures. I found that putting together short groups of measures to be doable once I had learned the individual measures thoroughly, since I had already started to develop an aural and muscular memory for the rhythmic challenges of each individual bar. After creating click tracks for shorter passages of several measures, I then created click tracks of longer passages, again determined from my analysis of the score, piece structure, and what I predicted to be manageable.

In practicing, I needed to be able to start at a very slow tempo, because it was physically impossible for me to immediately execute the rhythmic complexities of this work at full performance tempo. The transcription program Transcribe! became a significant practice tool to solve this problem. Intended as a transcription software for musicians to transcribe music from audio recordings, the program has a user-friendly feature that automatically loops imported audio tracks (in this case, the click track), and features a dial where the user can adjust the tempo of the recording from 1-100% of the normal playing speed. With these features combined, I could import a click track into the application, slow down the click track to a speed appropriate for starting to learn and practice (e.g., 50%), and keep the click track on a repeated loop with the built-in preparatory beats so I could repeat each measure or passage as many times as necessary. As simple as it may seem, I found this method incredibly useful and effective. Although there are no shortcuts to learning a complex piece of music, these tools helped me strategize an efficient method of

learning that worked, and that I had confidence in. As efficient as this process is, I still could only manage to learn one or two measures a day as it on average took several hours to learn each individual measure.³¹ With this method I was able to successfully learn to perform the rhythmic challenges of *splinter* at performance tempo, and by using the click track, I had a measurable, objective scale to assess my performance accuracy.

Once I began to bring passages of material up to performance tempo, I began the process of video recording myself practicing. Listening and viewing recordings of myself playing through passages of the piece gave me a chance to both assess my performance and develop my understanding of *splinter* from an external point of view while I'm not splitting my attention between all the intellectual and technical demands of performing the music. If the process of practicing with a click track seems to not have much room for personal interpretation and creative expression, I believe that reviewing practice recordings provides the opportunity for more subtle and nuanced self-reflection in sound production (tone), phrasing, gesture, timbral quality, etc. I have not yet decided whether I would use a click track in a live performance or not, but in any case, I believe the method of practicing with a click track aids in the learning of Barrett's *splinter*.³²

Conclusion

In conclusion, I found through my practice-based research and analysis that my methods of rhythmic translation and building of a click track worked successfully as a learning strategy for tackling the immense demands of Barrett's *splinter*. Although I can understand a point of view

³¹ Given the time-consuming nature of this type of learning process, it is critical to organize a reasonable timeline for learning and preparing a performance interpretation of this type of work. I would advise planning for at least 3-6 months to learn *splinter*, although I would recommend 6-12 months as an ideal learning period.

³² It should be noted that ELISION, the ensemble with whom Barrett has had the longest continuing collaborative relationship with, plans to perform Barrett's chamber work for Double Bass, Percussion, and Harp with a click track in live performance (with Barrett's supervision). Therefore, I do not believe it is any sort of artistic/ethical taboo to perform with a click track in a live performance of Barrett's music.

that may critique my approach for being perhaps overly literal or mechanical in rhythmic interpretation, I personally do not see it that way. In my interpretation of *splinter*, I don't imagine that Barrett intends for the same gestures of romanticism that could be interpreted in other new complexity scores (such as those of Brian Ferneyhough), but rather that Barrett is inviting the performer to transcend to worlds of music previously unknown. Further, I imagine that I will develop an aural and physical muscle memory from extensive practice with the click tracks that will eventually lead me to experiment with performing an interpretation from memory in which I take more expressive liberties with the rhythmic material.

In writing on his compositional idea of radically idiomatic instrumentalism, Barrett writes:

The piece could then perhaps be viewed as a window into an entire repertoire that does not and will never exist, like a lost world of which a single artefact remains, an object which should be shaped so as somehow to *invoke* that whole world (in a related way to that in which serial music might attempt to invoke an entire configuration-space without having to map every point in it, as outlined above).³³

From the musical score of *splinter*, and Barrett's statements on his own work, I believe that his score is an opportunity for a performer to push themselves intellectually, technically, and physically, to explore unknown musical territory.

³³ Barrett, Richard. *Music of Possibility*. Vision Edition, 2019. P.27.

Chapter 2: Learning with Choreography

Saunders: *Fury II* for solo contrabass and ensemble (2009)

Introduction

Composer Rebecca Saunders (b. 1967, London) is a current fixture in European contemporary art music. Contemporary music specialist ensembles and performers around the world eagerly program her works as they engage and challenge both performers and listeners alike. Celebrated in Germany with accolades such as the Ernst von Siemens Music Prize 2019, Saunders makes her home in Berlin and actively collaborates with leading European contemporary music institutions such as Ensemble Musikfabrik, Klangforum Wien, Ensemble Modern, Quatuor Diotima, among many others.³⁴ Saunders' fascination with the sonic architecture of composed sound in physical space often inspires her work, which includes pieces written for specific performance sites such as the Berlin Philharmonie and the St. Eustache Cathedral in Paris.³⁵

Inspired by the physical properties of sound as it traverses within spatial parameters, Saunders' music evokes a sense of sonic sculpture, created by her intentionally "reduced palette"³⁶ of sounds and shaped by definitive musical gestures and stark dynamic and timbral contrasts. Saunders' works often reference the emotional states of aggression and anger, both in title and in musical character. In an interview with Oliver Schwesig of Deutschlandfunk Kultur, Saunders articulates how her emotional evocation of anger and aggression in her music relates to her understanding of sound as a physical event, thus the intense physical gesturing of anger and aggression can come through as a musical expression of physical energetic movement:

Schwesig: Anger and aggression, aggressiveness is always assumed in your compositions. What interests you so much about this physicality?

³⁴ "Rebecca Saunders." 2022, rebeccasaunders.net.

³⁵ Ibid.

³⁶ Saunders, Rebecca. "Fury II." Henry Litolf's Verlag / C.F. Peters, 2009.

Saunders: I think the physicality of the music underscores what's actually there. Of course, music is a physical phenomenon, a physical phenomenon, that's a fact. The music sounds, the music is alive in the air around us, so to speak. The air is, so to speak, saturated with sound, with frequencies.³⁷

Saunders' statement clarifies her view that composed sound must move; quite literally through physical space but also figuratively in the sense that the artistic representation of physical movement illuminates the underscored reality of sound as a physical phenomenon. In other words, Saunders exaggerates the physicality of sound production to draw attention to the physical properties of sound in time and space. To aurally enhance her meticulously sonically sculpted compositions, Saunders uses silence as a featured canvas upon which all sounds in her compositions emerge from, disappear into, and dramatically contrast with.³⁸ In her interview with Schwesig, Saunders explains her reasons for using silence as a foundational element of her compositions:

Schwesig: And what also interests you is silence. Björn Gottstein, director of the Donaueschinger Musiktage, once said in his essay about her: "Rebecca Saunders shows that silence can mean more than the absence of noise". Why are you so interested in silence?

Saunders: I think I mentioned it before: it has something to do with this stopping of sound, with this enormous potential of nothingness, this representation of the absent to make the present even more tangible, even more real. Silence can also have very different effects in art. It can be the waiting, it can be the refocusing of listening, so that one encounters the sounds again in a completely new, fresh way at the beginning of a piece. And it also allows for very strong contrasts. That means you can explore a very strong emotional expression with it.³⁹

³⁷ Saunders, Rebecca. "Ernst Von Siemens Music Prize for Rebecca Saunders "Composing Is Actually a Thought Process"." By Oliver Schwesig. Deutschlandfunk Kultur. 2019. <https://www.deutschlandfunkkultur.de/ernst-von-siemens-musikpreis-fuer-rebecca-saunders-100.html>.

³⁸ Ibid.

³⁹ Ibid.

Between Saunders' explanation for why she composes with silence as a canvas and active role in her compositions and her reasoning for composing for such aggressive physicality in musical form, it's evident that she is after some sort of revealing of the true nature of reality; of sound as a physical phenomenon, of the physical act of creating sound, and of the reality of the present moment. This approach isn't necessarily unique to Saunders as there are many traditions of music that also deal directly with the physicality of sound production in music performance, but it's an important point to understand when strategizing methods for learning and practicing her work.

In contemporary music scholar Robert Adlington's article "The Music of Rebecca Saunders: Into the Sensuous World." published in *The Musical Times* in 1999, Adlington observes that the sensuality of Saunders' music comes from her ability to compose music that creates a transmission of physicality from the performer to the listener, which creates an immediately perceptible visceral musical experience. Adlington writes:

[...] Saunders captures and conveys to a listener something of the experience of those for whom music is an undeniably tactile activity - namely, the performers. Surface, weight and feel are part of the reality of musical performance. Saunders's achievement is to write music that, frequently, sounds like it is to play.⁴⁰

Having performed Saunders' music myself, I can attest to Adlington's point about the correlation between the dramatic force of sonic gesture in Saunders' music and the arduous physical demands of performing her music.⁴¹

When Saunders speaks and writes about her compositional process, she says that she starts her compositional process with a close study of the instruments themselves, often by getting her hands on an instrument that she's writing for or working closely with a performer that she's

⁴⁰ Adlington, Robert. "The Music of Rebecca Saunders: Into the Sensuous World." *The Musical Times* 140, no. 1868 (1999): 48-56. <https://doi.org/10.2307/1004495>. <http://www.jstor.org/stable/1004495>.

⁴¹ To spare the reader of graphic indecency I will not include photographic evidence, but I can state that I have documented my own severe bruises on my hands from practicing, rehearsing, and performing Saunders' *Fury II* for solo contrabass and ensemble.

composing for. Saunders expresses two main reasons for developing her compositions with intensive studies of the dedicated instruments. The first reason being that she wants to intimately understand the whole sonic nature of an instrument, not only for its inherited idiomatic traditions, but also for all of the extraneous sounds that form the sonic identity of the instrument. On this process, Saunders writes:

I need to immerse myself in the sound of an instrument to be able to write for it. As well as establishing the elemental acoustical properties of an instrument, it is also important to learn about its physical characteristics, whether considering the functioning of the bellows of an accordion, the resonating and vibrating double-stops of the violin, the function of sustaining pedal or of layers of resonances achieved with help of the sostenuto pedal on the piano. Understanding how an instrument works, its peculiarities, its sonic characteristics and its mechanics, but also being aware of its tradition, including its function in an ensemble or a concert environment. Seeking a sonic essence of the instrument. Digging beneath the flesh to discover the bare bones beneath. Trying to trace an essence, the soul of an instrument. Seeking an essential character of an instrument, an identity, an unequivocal statement saying – this is what I am.⁴²

With this intimate study, Saunders focuses on the technical boundaries of the instrument and how a performer's physical relationship with the instrument can be pushed to reveal the essence of what it physically and sonically means to play that instrument. As Adlington writes:

Saunders hones in on the sounds emitted by instruments that are normally considered an unwanted surplus to music. Her works celebrate the grit and noise that remind us of the presence of a fallible physical body behind the sound; those elements that, ordinarily, performers work hard to expunge, in order to attain the transparency of technique and instrumental mechanics conventionally required of the virtuoso.⁴³

As Adlington describes, Saunders' works target the technical extremities and inescapable artifacts of an instrument to draw a sonic silhouette of the instrument and physicality of its performer. Similar to her use of silence in enhancing dynamic contrast in composition, Saunders further

⁴² Saunders, Rebecca. "Ernst Von Siemens Music Prize for Rebecca Saunders "Composing Is Actually a Thought Process"." By Oliver Schwesig. Deutschlandfunk Kultur. 2019.

⁴³ Adlington, Robert. "The Music of Rebecca Saunders: Into the Sensuous World." *The Musical Times* 140, no. 1868 (1999): 48-56.

amplifies her compositional process of revealing the essential sonic textures of instruments by adding additional preparations to instruments and composing for unconventional performance techniques. Adlington further writes about how these approaches to composing for instruments highlights the physical choreography of the performer in executing these techniques:

Unorthodox treatments of the instruments - the detuned double bass, for instance, or plucked and scraped piano strings - have little history as dis-embodied musical sound, and thus force their physical means of production upon the listener. There is something democratic about this; for those of us who have struggled with, but failed to master a musical instrument, it is the grit and the grain, rather than the flawless tone that often issues from compact disc or concert platform, with which we most readily and immediately identify. These 'surplus' sounds accordingly carry a virtual physicality.⁴⁴

Adlington explains that the sense of physicality in Saunders' music comes specifically from her compositional emphasis on the physical boundaries of the instrument and how an instrument sounds when played unconventionally. Saunders uses a temporal canvas to surround her composed musical gestures with silence, thus making the gestures clear and distinct. In passages where Saunders focuses on a limited range of microtonal pitch fluctuations, she also creates a clearly defined frequency space for musical gestures to come across within.⁴⁵

In translating compositional ideas into music notation, Saunders considers in great technical detail the physical choreography of sound production in shaping musical gestures. Her scores feature detailed instructions and markings to specify the exact physical choreography of how to execute her intended musical gestures. From the clarity of her notations emerges the clarity of gestural performance, making performances of her music both striking and memorable with precisely defined material, form, and energy.

⁴⁴ Ibid.

⁴⁵ Ibid.

In a piece dedicated to providing listeners with a guide to Saunders' music, The Guardian's Tom Service writes:

Few composers make you more aware of the intricacy, delicacy, and elementality of the musical process, of what happens when a musician's body and fingers catalyse their instruments, than Saunders does. As she says in her programme note for *miniata*, an astonishing and sometimes terrifying piece for accordion, piano, orchestra, and choir: "Surface, weight and feel are part of the reality of musical performance: the weight of the bow on the string; the differentiation of touch of the finger on the piano key; the expansion of the muscles between the shoulder blades drawing sound out of the accordion; the in-breath preceding the 'heard' tone ... " The result is music of extremes, of violence and stillness – and of violent stillness.⁴⁶

Overall, then, considering the aesthetic, conceptual, creative priorities, and artistic interests that Saunders has, a performer could consider strategizing the learning process of preparing a performance interpretation of her work with both a physically choreographed approach to performing with one's instrument in addition to the traditional demands of preparing a musical score, as opposed to the conventional approach of solely focusing on the notes and rhythms described in the musical score.

Although one could argue that all music performance involves physical choreography, what sets Saunders' work apart from other repertoire is its emphasis and prioritization of the physical, often ferocious nature of creating sound. In the case of *Fury II* for solo contrabass and ensemble (2009), for example, the solo contrabass part involves lengthy passages of slapping the fingerboard of the instrument with as much force and dynamism as possible in rapid succession and alternation between hands, frequently followed by rapid upwards glissandi that traverse the lengthy distance of the fingerboard of a large five string bass, and usually accompanied by furious

⁴⁶ Service, Tom. "A Guide to Rebecca Saunders' Music." 2012.
<https://www.theguardian.com/music/tomserviceblog/2012/nov/05/rebecca-saunders-contemporary-music-guide>.

tremolo performed with the bow in the right hand. Altogether, this gesture of playing not only requires an enormous amount of physical exertion on the part of the performer, but the musical gesture also sonically represents the energetic output of force on the instrument, illustrated by the unique timbres of how the instrument sounds when played with these gestures, rather than forming thematic material made of up of a structured melodic figure, harmonic sequence, or identifiable rhythmic pattern.

Prior to Saunders' work, there has been a significant history and tradition of solo contemporary tours de force composed for the double bass which also test the physical limits for a performer, with notable works such as Xenakis' *Theraps*, Ferneyhough's *Trittico*, among others. Saunders' *Fury II* differs from the preceding solo contemporary repertoire in her approach of not only deriving her material from the technical and timbral boundaries of the instrument, but also in her reduction of sonic palette and thus technical palette that she works with. Saunders' scores don't feature anywhere near the amount of detailed rhythmic information and complexity that can be found in Xenakis, Ferneyhough, and Barrett. Saunders instead focuses on the blossoming of unique instrumental timbres created by meticulously studied physical explorations of the instrument. Saunders' scores do not present the decipherability challenges that the previously mentioned composers' scores do. The challenge in interpreting Saunders lies not in the intellectualization and understanding of the score, but rather in the expansive physical and musical gestures required to perform her music.

Saunders: *Fury II* for solo contrabass and ensemble (2009)

Commissioned by Staatskapelle Dresden and Casa da Musica, Ensemble Remix, *Fury II* for solo contrabass and ensemble was premiered in 2010 by Andreas Wylezol and members of

Staatskapelle Dresden⁴⁷, and has since become a part of the canon of solo contemporary repertoire for contrabassists.⁴⁸ Saunders conceived of *Fury II* as an extension of Saunders' *Fury*, a solo work for contrabass originally composed in 2005 for Antonio Aguiar of the Remix Ensemble.⁴⁹

Saunders' program notes for *Fury II* are as follows:

***Fury II* (2010)**
concerto for doublebass solo and ensemble

Fury means rage. An explosion of rage. Endeavouring to release an extreme energy. In a single breath. *Fury II* depicts a single state or condition, which was inspired by the five-string double bass: fascinated with the low pulsing sounds and the extensive percussive possibilities of the instrument; with the pronounced physicality and passionate gesture of the double bass soloist. Also the pronounced fragility of this instrument in the delicate and expressive upper-range - providing an antithesis, a shadow-world.

The intention was to expand the original Solo *Fury*, which was written for Antonio Aguiar of the Remix Ensemble in 2005, and to place it within a new framework. Accordion, piano, bass clarinet, violoncello and percussion merge with the solo voice creating a single timbral palette. The ensemble seeks to expand and amplify the solo line, pursuing various complex resonances and revealing new perspectives. Despite the choleric nature of the sound material, silence is regarded as the canvas upon which all sounds surface out of, and disappear into. *Fury II* was conceived of as a melody, stretched to breaking point.

Fury:
/ˈfjʊəri/ n. (pl. **-ies**)
1 **a** wild and passionate anger, rage. **b** a fit of rage (in a blind fury).
c impetuosity in battle etc.
2 violence of a storm, disease, etc.
3 (Fury) (usu. in pl.) (in Greek

⁴⁷ "Fury II (2009)." 2022, <https://www.rebeccasaunders.net/fury-ii>.

⁴⁸ Bassists have now performed this work in numerous countries, and currently there are several recordings of live performances posted for public view on YouTube. Saunders' solo contrabass piece *Fury* (2005) contains most of the source solo material for *Fury II* and the solo work is now featured on audition repertoire lists for elite contemporary music summer training festivals such as the Lucerne Festival Academy and contemporary performance degree graduate school programs such as the International Ensemble Modern Academy.

⁴⁹ "Fury II (2009)" 2022, <https://www.rebeccasaunders.net/fury-ii>.

mythology) each of three goddesses sent from Tartarus to avenge crime, esp.
against kinship.

4 an avenging spirit. **like fury** colloq. with great force or effect.

(ME f. OF furie f. L furia f. furere be mad)

The Concise Oxford Dictionary

RS⁵⁰

Saunders' performance notes for *Fury II* highlight the significance of physical gesture in the part of the contrabass soloist. To perform the explosion of rage required in this piece, the soloist must rehearse the physical choreography of both the technical demands of the score, as well as the energetic emotional character of the work.

In looking at the score for *Fury II*, a large component of the solo contrabass part is made up of phrases that consist of specific timbre material shaped through dynamic musical gesture. For example, in the very opening of the piece (see figure 19), although the notated part features specific notes for the soloist to perform, the sonic result of performing such a low tremolo on a dramatically detuned fifth string on a bass (from a B0 down to a G0) at the pianississimo dynamic doesn't resemble any sort of recognizable pitch, but rather a rumbling trembling timbre of the low string.

Solo Double Bass

fury II (2009)

concerto for solo double bass and ensemble

Rebecca Saunders (* 1967)

Slow
♩ = 50

Scordatura

1

ppp

pp

s.p.
flaut.

Figure 19: Saunders: *Fury II* contrabass solo part, measures 1 – 4

⁵⁰ Ibid.

The detail with which Saunders notates the emergence of a low fluttering sound from the double bass *dal niente*, a subtle crescendo to *pianississimo*, and a subtle decrescendo that disappears back into *niente*, taken into consideration with the sonic quality of the phrase being effectually unpitched, shows how a performer could consider this opening phrase as a sonic and physical gesture. The sonic gesture is defined by the timbre of the sound, coming from the performance technique and the treatment of the instrument with the *scordatura* tuning. The physical gesture is defined by the performer playing at the extremes of the instrument: the lowest possible notes in the left hand on a lowered lowest fifth string, the softest possible tremolo emerging the very tip of the bow near the bridge. The visual and sonic gesture is striking: a flutter emerges from the largest instrument of the string family, a distant rumble of thunder indicates that a storm of fury is coming, and the silence between rumbles is full of tense dramatic anticipation.

As *Fury II* progresses from the opening phrase, instruments from the ensemble begin to echo, extend, provoke, and converse with the gestural and sonic material from the solo bass part. After an initial introductory period of mostly dynamically soft gestures and periods of pregnant silence, the bold contrasts to silence enter the piece (see figure 20).

The musical score for measures 8-14 of Saunders' *Fury II* is presented for a chamber ensemble. The parts and their key performance instructions are as follows:

- Bcl. (Clarinet):** Measures 8-10 feature a half-air (½-air) and air techniques, with a very long note in measure 9. Measure 11 includes a circular breath technique. Measure 12 has a sub. vib. pulse. Measure 13 is marked with a tempo of 69 and a sub. instruction. Measure 14 has a sub. instruction.
- Acc. (Accordion):** Measures 8-10 have a B.S. 1 instruction. Measure 11 has a mid. 6 instruction. Measure 12 has a P instruction. Measure 13 has a P instruction. Measure 14 has a P instruction.
- Pno. (Piano):** Measures 8-10 have a P instruction. Measure 11 has a P instruction. Measure 12 has a P instruction. Measure 13 has a P instruction. Measure 14 has a P instruction.
- BP/MP/TT/BD (Bassoon/Piccolo/Trombone/Double Bass):** Measures 8-10 have a chain instruction. Measure 11 has a pressure instruction. Measure 12 has a (no chain) instruction. Measure 13 has a l.v. instruction. Measure 14 has a P instruction.
- Vc. (Violoncello):** Measures 8-10 have a pizz. vib. instruction. Measure 11 has a very long! instruction. Measure 12 has an arco v. warm vib. instruction. Measure 13 has a s.p. flaut. instruction. Measure 14 has a s.p. distort (non flaut.) instruction.
- Solo D.B. (Solo Double Bass):** Measures 8-10 have a s.p. sub. ord. v instruction. Measure 11 has a s.p. flaut. instruction. Measure 12 has a s.p. flaut. instruction. Measure 13 has a s.p. distort instruction. Measure 14 has a s.p. distort instruction.

The score includes various dynamic markings (p, pp, f, ff) and articulation marks (accents, slurs, breath marks). The tempo is marked as 69 in measures 13 and 14. The score number 33034 is visible at the bottom.

Figure 20: Saunders: *Fury II* score, measures 8-14

The eighth note pick-up to measure 9 in the contrabass solo part both sets off a chain reaction of energy diffusion in the rest of the ensemble and alludes to the fury to come later in the piece. Again, in looking at the contrabass part in measures 8-10, the material is effectively more aurally recognizably gestural than tonal, as the eighth note pick up to measure 9 is distorted through extreme bow pressure, and all the notes in measures 8-10 are performed on the extremely detuned low fifth string on the bass, thus making the pitch ambiguous. Saunders' explicitly writes that the solo contrabass part is a melody throughout the piece, but I would argue that she doesn't necessarily

mean a melody that outlines the triadic harmonic center of the piece in the conventional western classical musical sense⁵¹, but rather in a sense of the expressive foregrounding of motivic material composed of sustained pitches, microtonal inflections, clustered pitches, dynamic and often forceful physical gestures, rhythmic motifs, and unconventional instrumental timbres created by nontraditional treatments and performance techniques of instruments. In *Fury II*, the contrabass part informs how the ensemble parts work together, and it stands out as the soloist role, but it doesn't function in the traditional concerto soloist role of outlining a sonata form or performing recognizable tunes that the other instruments imitate. Rather, the contrabass soloist part ignites explosive energetic and timbral gestures, that the other instruments grab onto and extend or morph into their own unique colors and physicality. The melody of the contrabass solo part is a melody of sustained pitches, short melodic phrases that span a limited pitch range, microtonal intervallic inflections, rhythmic and physical gestural motifs, unconventional instrumental timbres, and dynamic shaping.

As *Fury II* progresses into the more densely orchestrated passages performed with explosive energy both from the contrabass solo part and the ensemble, the gestural nature of Saunders' composition becomes even more evident than in the opening quiet passages. For example, in looking at the contrabass solo part in measures 148-161 (see figure 21), there are numerous signs that indicate the primary importance of physical gesture and timbre. For example, in measure 148, although there are some specific pitches notated in the first two beats of the bar, in performance they are not discernible. The first quintuple stop of the measure is performed with a quick accented pluck of the left hand across all the open strings of the instrument. Due to the low

⁵¹ Rosen, C. *Music and Sentiment*. Yale University Press, 2010.

frequency range of the double bass, in addition to the scordatura loosening of the bass strings, the sounding result of this articulation is percussive more than it is harmonic in that the pitches blur together in a dense aural texture and any potential sustained resonance of the pitch frequencies of the strings is immediately interrupted by the subsequent slapping articulation of the right and left hands on the fingerboard in the notes that follow the initial articulation of the measure. With the slapping techniques, the effect is completely percussive, and perceivably physically aggressive both in how it sounds within the context of a double bass part and how it looks as a performer forcefully strikes their own instrument. In the last two triplet sixteenth notes of the first beat, the notation calls for indeterminate harmonic pressure fingering in the left hand, as the bow articulates short, accented strokes near the bridge, which further distorts the already indeterminate pitch. The marking “vert. heel” within the second beat of the measure stands for vertical bowing (moving the bow between the bridge and nut rather than the traditional technique of drawing the bow horizontally on the string without perceptible vertical positional variation) using the part of the bow hair closest to the frog. The sonic effect of this vertical heel technique, especially within the context of performing it as a tremolo and as a double stop of two different notes in the lowest register of the double bass, makes for a timbral noisy sound and gesture rather than any discernible pitch. Further, the explosive nature of the dynamics of this specific figure in measure 148 add to the physical and sonic gesture of the material as the performer must dramatically switch quickly between contrasting playing techniques and dynamic shapes which is extremely physically demanding to perform. While there are moments of harmony in the passage, such as in the minor third of C to E-flat in measure 149, the pitch material of this passage and throughout the piece tends to focus on narrowly defined pitch areas. Pitch material tends to either sustain single notes, bend notes through microtonal fluctuations, create klangfarben melodies through the passing of

LH RHs LHs
 pizz. III I
 IV II

148 s.p. vert. heel sub. s.p. ord. (non vib.) vib. sub.

LH viol. LHs
 pizz. batt. II

LH viol. LH pizz. s.p.

150 3 16+16

III viol. LH s.p. II LH LHs LH viol. s.p.
 IV batt. pizz. II pizz. IV I pizz. batt. II LH RHs LHs LH viol. LHs
 152 16+16 3 3 3 16

s.p. distort s.p. I II III sub. ord. s.p. long (v)
 154 ff sempre sff sub. sff sub. sff sub. sff

sub. LH RHs LHs s.p. I viol. s.p. sub. ord. vib.
 s.p. pizz. IV II batt. distort V 16+16

157 ff sempre f ff

LHs LH s.p. I LH viol. heel
 I II pizz. III IV II pizz. batt. ord. vert. LH s.p. LH RHs LHs
 160 16 3 ff 16

33035

53

Saunders describes her music as tonal and melodic⁵², and I assert that as a performer the melodicism is constructed through physical rhythmic gesture, timbral color, and dynamic energy equally if not more than it is constructed in pitch. It must be said, however, that Saunders clearly does structure her work with tonal centers, and she speaks about her work in interviews and in her performance notes as full of melodies. One example of this in *Fury II* can be seen in measures 150-151 of the solo contrabass part. In measure 150, the soloist performs two relatively longer notes with the interval of an ascending tritone and each with the identical extreme dynamic shaping of niente rapidly increasing to forte fortissimo. This clearly defined ascending interval along with the dramatic gesture of the dynamic structure creates a moment of perceivable melodic gesture in the music, followed up by another similarly long and dynamically shaped double stop interval in the beginning of measure 151, continuing the melodic line in ascension. Although this brief passage doesn't use functional harmony, it builds upon a clear pitch center (the low A in measure 150) and adds close intervallic relationships to that pitch center. At other points in *Fury II*, Saunders frequently uses techniques such as microtonal intervals, glissandi, and varying speeds of vibrato to create melodic shapes. Harmonies tend to be made by the accumulation of clusters of notes centered around sustained single pitches.

Although there are clear pitch centers to her work, I argue that a significant portion of the formative compositional material lies in the gestural rhythmic motifs of the work. For example, in looking at the contrabass solo part of measures 148, 151, 152, 161, you can see a recurring motivic gesture of an accented first beat of a triplet subdivision articulated by the left hand, either as a plucked quintuple stop across the five open strings of the contrabass, or as a left hand slap on the fingerboard, followed by a grouping of four triplet sixteenth notes, ascending and indeterminate

⁵² "Fury II (2009)." 2022, <https://www.rebeccasaunders.net/fury-ii>.

in pitch, and either accented with a bowed distorted sul ponticello timbre or articulated with right and left hand fingerboard slaps. This motif is defined by its rhythmic profile and physical gesture, the striking of the instrument with percussive articulations and the ascending gesture of moving the left hand toward the bridge as the right hand performs accented short bow strokes.

In considering both the thematic elements and the technical challenges of the work, I decided to approach learning the piece with a process of practicing physical gestural choreography along with the traditional methods of interpreting a musical score. Even as I performed specifically notated rhythms and notes, I emphasized the physical choreography of the phrasing as a method of shaping the sound. In the section that follows, I will describe my learning and practice methods for *Fury II*.

Learning methods

In preparing a performance interpretation of *Fury II*, I had to strategize methods of practice that would translate Saunders' compositional exploration of movement and explosive rage in sound into a perceptible musical experience for an audience. To achieve the physical embodiment of the notated material and prepare for the challenges of performing this work as a soloist with ensemble and conductor, I strategized a learning process which involved physical choreography, rhythmic translation, exploration of instrumental timbre, the development of an aural sensibility for achieving sonic blend with the ensemble, and a planned timeline of energetic output to support physical stamina in performance. In the section that follows, I will use the passage of measures 63-71 (see figure 22) of the solo double bass part for *Fury II* to illustrate the various steps of my process and provide a link to a video of a practice recording to demonstrate the learning process.

In approaching the more densely notated and virtuosic passages of the solo part of *Fury II*, I started the learning process with the physical choreography of the score. Although there are precise pitches written in the solo part, I approached everything in the score as a physical gesture. Even in moments of sustain or melodic shape (e.g., the expressive upward glissando in measure 69), I interpret Saunders' composition as pushing the physical extremes of how one could play the double bass, and I would argue that the sonic effect created by this physicality is what propels the expressive content in this work. Aside from the basic coordination of understanding and learning the unconventional techniques prescribed in this work (e.g., the RH and LH slaps), I also experimented with how certain physical gestures created different sorts of sonic effects, such as which parts of my hands would produce the most striking aural contrast with the sound preceding, and therefore how would I move my arm to prepare for the articulation, etc. This process isn't unlike a typical process of making physical adjustments to playing technique to experiment with different sound results, however in Saunders' *Fury II* this process was pushed to the extreme much in the same way that she tends to focus on the extreme boundaries of sound possibility with an instrument. From the perspective of a performer, I would argue that she is also exploring the physical boundaries of the musician as well, in how they can physically relate to the instrument while still holding onto a semblance of their inherited tradition of playing methods.

Figure 22: Saunders: *Fury II*, contrabass solo part, measures 61-75

To address the rhythmic challenges presented by the frequent meter changes and odd meters in the score, I translated the notated meter changes into equivalent rhythmic values that allowed me to maintain an internal reference to a consistent quarter-note pulse throughout the entire passage. For example, in measure 64, originally notated as a 3/16 measure, I annotated a bracket in the score to tie the value of the eighth note in measure 64 to the first eighth note rest in measure 65 to equate the value of a quarter note (see figure 23). I then practiced performing the

even though for several measures the downbeats of the measures wouldn't align with the pulses of the metronome. This method was uncomfortable to practice but allowed me to discover how I was taking too much or too little time in the odd metered measures. The downbeat of measure 68 proved to be an important landing point in both individual practice and ensemble rehearsal to confirm temporal alignment between the solo part and the ensemble. To document my learning process, I video recorded parts of my practice session to listen and watch how I worked on the challenging passages of the work. The YouTube link provided in the footnote below features an excerpt of one of my practice sessions in preparing this work in exactly the process I just described, playing the full passage of 63-71 with a consistent metronome track of 66bpm.⁵³

In addition to practicing with a metronome, I also practiced along with a YouTube recording of *Fury II* performed by Ensemble Linea with soloist Florentin Ginot.⁵⁴ Saunders features this specific live performance video recording as the reference recording for *Fury II* in her online compositional portfolio.⁵⁵ I chose to practice along with this recording for several reasons. First, I wanted to practice the sensation of performing my part while simultaneously visually coordinating with a conductor. Although practicing with a metronome helped me understand the notated rhythmic values of the work, I knew that I also needed to prepare for performing the demanding material of the work while also monitoring and adjusting to the rhythmic interpretations of both ensemble players and a conductor. This process of practicing along with a

⁵³ Link to my Saunders *Fury II* practice video recording of measures 63-71.
<https://www.youtube.com/shorts/5e9zmDO0gW8>

⁵⁴ Linea, Ensemble. "Ensemble Linea - Rebecca Saunders - Fury II." YouTube, 2017.
<https://www.youtube.com/watch?v=nskEE09WWWM>.

⁵⁵ "Selected Videos." 2022, rebeccasaunders.net/videos.

video recording not only allowed me to develop experience and confidence in performing my part amidst the visual and aural context of the full ensemble, but also gave me the opportunity to experiment with varying the timbres that I could emphasize in the solo part that blended well with the instrumentation of the ensemble. Once I had the opportunity to rehearse with the UC San Diego Palimpsest ensemble with conductor Professor Steve Schick, I had a strong sense of which parts of the piece I could emphasize blending into the timbre of the ensemble and which parts of the piece I could emphasize stark sonic contrast with the ensemble. I also began the ensemble rehearsal process with practice experience that allowed me to have confidence in executing the demands of the solo part while also negotiating the visual and aural cues from the ensemble and conductor. In a way, this practice method also created a sort of choreography in how I structured my visual and aural views as I simultaneously performed the virtuosic physical and technical demands of this work.

In the rehearsal process, I quickly learned that repeating run-throughs of longer passages of the work, including full runs of the piece, was incredibly challenging in terms of physical stamina, and I would frequently begin to feel muscle cramping in my right hand after longer passages. I had to learn to pace myself in performance, especially in the first half of the piece, and to not give into the excitement of the material and ensemble energy. Often in rehearsals I would overperform the physical extremity of the work too early in the performance and quickly lose my physical stamina to be able to continue to perform at optimal levels for the remainder of the work. I therefore strategized saving energy for the middle and end of the piece to be able to get through it without muscle cramps.

The ensemble rehearsal process for the Nov. 4, 2021, performance at the UC San Diego

Conrad Prebys Music Center Concert Hall functioned on an efficient, concise timeline (approx. 2-3 weeks of rehearsals, with 2-3 rehearsals per week), similar to the typically short, focused rehearsal periods in professional contemporary music engagements. I was extremely fortunate, however, in the extraordinary level of commitment and preparation on the part of the ensemble performers, and especially in the leadership and guidance of conductor Professor Steve Schick. I was thrilled to give this performance of *Fury II* and I hope I have the privilege to perform it again.

Conclusion

Upon completion of the learning experience and my first performance experience of Saunders' *Fury II*, my practice-based research suggests that a performer could consider approaching Saunders' *Fury II* as work of multi-faceted choreography. Quite literally, the technical and musical demands of the work require dramatic and vigorous physical gestures. Poetically, the physical embodiment, and thus choreography, of the complex emotion of fury creates the necessary vigor and dramatic tensions that establishes the narrative quality of the work. And finally, in practical terms, the intentional planning of physical exertion and coordinated sensory focus builds the choreographic framework for the performer to have the confidence on stage to focus on the present moment without the anxiety of fearing that a complex interdependent ensemble piece could potentially unravel in performance. Going forward, these lessons learned in strategizing a learning process for a unique set of preparation and performance challenges show that a performer's practice methods can be designed to match the unique ideas explored in a composition. In the case of Saunders' *Fury II*, I decided to approach my interpretation process as learning music with choreography, and I found that perspective to work successfully for my interpretation and performance.

Chapter 3: Learning with Instrumental Reconception

Cassidy: *Self Portrait, Three Times, Standing (15.3.1991–20.3.1991)* (2019)

Introduction

American composer Aaron Cassidy (b.1976, U.S.A.) has become increasingly well-known over the past decade for his innovative compositional work. All his compositional output since 2004 has worked with varying degrees of tablature notation in his scores, meaning that the music notation specifies the prescribed movements of musicians, as opposed to the traditional codification of sounds in terms of pitch and rhythm typical in western music notation. Over the course of his career, Cassidy has developed numerous original action notation systems, which each present a unique set of challenges to performers in the learning process of preparing an interpretation of his work. Regardless of the particulars of each unique original action notation system, the overarching challenge of learning to perform Cassidy's music lies in the process of both decoupling traditionally integrated physical elements of performance technique and learning to perform rigorous choreography independently assigned to each physical element.

A traditionally trained instrumental or vocal performer has typically spent thousands of hours practicing the art of coordinating various fine and gross motor movements to execute physically integrated musical tasks. Over the course of professional training, this physical integration becomes intuitive and second nature to the point where most professional performers can sight-read conventionally notated music, meaning that they can fluently translate codified notes and rhythms into an audibly perceivable representation through extensively practiced physically integrated performance techniques. Cassidy's music intentionally disrupts the traditional integration of a performer's technique by demanding the performer to learn precisely notated independent movements assigned to the various physical aspects of a given instrumental

or vocal technique (e.g., one or both of a player's hands, breath and embouchure control, physical and/or technical parts of the instrument and equipment, etc.). The learning process, therefore, requires the performer to reconceive of their instrumental technique as decoupled physical movements rather than integrated trained technique.⁵⁶ The reintegration of the decoupled physical actions is also a part of the learning process of Cassidy's music, however that step must follow an initial process of decoupling.

Cassidy's compositional interests led him to experiment with layering and stacking the various individual movements that composite the act of playing an instrument. His use of prescriptive action notation (as opposed to traditionally descriptive standard notation) stems from his interest in the visceral, heightened state of expressive energy created by physical athleticism in musical performance. A devoted athlete himself, Cassidy likens the energy and complexity of movement in musical performance to the complexities of physicality in professional cycling.⁵⁷ In order to focus his compositional efforts on the emphasizing the physical energy and gesture of music performance, Cassidy spent most of his early compositional career inventing original action notation systems specifically designed to dissect the physical technique of instrumental and vocal performance such that he could exploit the physical possibilities of every individual physical aspect of a musician's performance.

Although the scores are conceptually fascinating and visually striking, Cassidy admits that performance interpretations of his earlier work tend to get undesirably entangled in the thorny details of the decoupled tablature notation. In the other words, the vertical stacking of multiple

⁵⁶ In interviewing Aaron Cassidy in June 2022, Cassidy explained to me that the one learning strategy that he feels is non-negotiable for learning to perform his scores is the process of learning each independent layer of physical choreography separately, one at a time, before integrating them together.

⁵⁷ Cassidy, A. (2015). *Imagining a Non-Geometrical Rhythm*. Inaugural Professorial Lecture, University of Huddersfield, University of Huddersfield Repository.

layers of dense information within the scores tends to consume a performer's focus to the point where larger temporal structures of phrasing and gesture can get lost. To integrate partially visually some of the formerly decoupled information from earlier action notation systems, Cassidy decided to use color as a tool for combining information that in prior work was separated. In Cassidy's most recent work (since 2015), color plays a significant role in the music notation. His focus on color in his recent scores, along with his continuing experimentations with various approaches to rhythm and temporality are made in the effort to reorganize the visual information in the score to aid the performer in prioritizing the primary interest of Cassidy's compositional concept: the generation of musical energy through the physical athleticism of performance.

A pivotal work which marks Cassidy's shift in approach is *The wreck of former boundaries* (2014-2016), written for two trumpet soloists and mixed ensemble (also a conglomerate work from which *The wreck of former boundaries* for solo contrabass is excerpted from). In the making of this work, Cassidy challenged himself with a rule of only composing with methods that he had never used before, and in the process opened what he terms a "Pandora's box" of both possibility and complication. Cassidy repeatedly expresses in recent interviews and lectures that he considers himself to be in a "middle period" of his compositional career, in which he feels he must focus on refining the grammar for the inventive vocabulary that he created in his early period. And rather than focusing on his prior goal of musical invention, he intends to focus instead on the sophistication and formal development of the inventions he has already made, to create clear formal structures and statements of perceivable phrasing in his work.

As an avid performer of Cassidy's music, I have had the privilege of learning several of his works over the past 9 years and have engaged with a variety of his original notational systems. In my qualifying examination for my Doctor of Musical Arts degree at UC San Diego, I wrote a

paper that extensively analyzed my learning process for Cassidy's *The wreck of former boundaries* for solo contrabass (2015-16). In that paper, I discussed how Cassidy's music prompted me to reconceive of my instrumental performance practice because the music intentionally features independent (non-integrated) parts for each hand to perform and features an action notation system rather than a descriptive notation. In other words, my study and understanding of Cassidy's score suggested that I needed to dis-integrate the traditionally integrated relationship between my two hands. Although one could argue that once a performer learns the choreography of the work, the performance process is effectually the same as a traditional process of score interpretation, I would argue against that notion. Cassidy's music is driven entirely by the meticulously detailed independent and often frenetic physical actions conceived of for each individual technical aspect of playing an instrument (or vocalizing), and if a performer gets caught in developing a fixed aural model for the music, then they are reverting to a classical approach that is antithetical to the risk taking, physical boundary pushing, and intentionally destabilized performance state that Cassidy's music requires. To achieve the heightened state of expressive energy intended in Cassidy's scores, we need to reconceive of our instruments as physical terrain upon which we map the actions of the score onto, rather than as instruments with which we translate coded sound into audible sound. In learning Cassidy's music, we learn to translate coded movement into audibly perceivable physical energy. In learning *The wreck of former boundaries*, I developed practice strategies which departed from my traditional conservatory trained learning methods and involved learning elements of the score separately (i.e. one hand at a time), videoing myself regularly for self-assessment, communicating with Cassidy for feedback, improvising with the playing techniques I had learned, and composing an original work with a tablature notation system modeled after Cassidy's.

Since I had extensive prior experience in learning Cassidy's music, my more recent process of learning Cassidy's *Self-Portrait Three Times, Standing. (15.3.1991–20.3.1991)* (2019) gave me an opportunity to refine my learning strategies for Cassidy's music. I had the opportunity to shift my strategy from primarily focusing on deciphering the action notation system to refining my own understanding and interpretation of the musical vocabulary of his work. In the sections that follow, I will describe how the specific conceptual and aesthetic values of Cassidy's recent work informed my learning process for *Self-Portrait Three Times, Standing. (15.3.1991–20.3.1991)* (2019).

Cassidy: *Self-Portrait, Three Times, Standing. 15.3.1991–20.3.1991* (2019)

In 2019 and 2020, Cassidy created a series of two sister quartets for mixed ensembles, *Self-Portrait, Three Times, Standing. 15.3.1991–20.3.1991* (2019), and *Self-Portrait, 1996* (2020), both titled after two of German visual artist Gerhard Richter's self-portraits. These two quartets could also be considered as a pair of musical self-portraits for Cassidy himself as he continues to navigate his experimental compositional career. Cassidy's *Self-Portrait, Three Times, Standing. (15.3.1991–20.3.1991)*, commissioned by the ELISION Ensemble, premiered in March 2019 in Buffalo, New York. I was fortunate enough to perform in the premiere performance, and additionally performed a subsequent performance with the same ensemble in the National Concert Hall in Taipei, Taiwan in June 2019, with both performances and rehearsal periods supervised by Cassidy. The second quartet in the series, *Self-Portrait, 1996* (2020), was written for the Cologne-based Ensemble MusikFabrik and was premiered by the ensemble under Cassidy's leadership as a conductor in 2020.

The long-standing musical inspiration for Cassidy's *Self-Portrait, Three Times, Standing. 15.3.1991–20.3.1991* (2019) emerged from Cassidy's fascination with American saxophonist John Coltrane and his album *The John Coltrane Quartet Plays* (1965). To create a musical work

with a similar spirit of Coltrane's confidence to take artistic risks and ability to achieve heightened states of expressive energy in performance, Cassidy decided to experiment with musically referencing widely known traditions of music within his work, a practice unprecedented for Cassidy. Unlike the score for *The wreck of former boundaries*, the score for *Self Portrait, Three Times, Standing. (15.3.1991–20.3.1991)* features a hybrid notation system with interspersed passages of standard notation integrated into Cassidy's original action notation system. This allowed Cassidy to create a musical landscape within the work that oscillates between the frenetic physical energy of his unique musical vocabulary and the referentially charged vocabulary of a jazz quartet. In addition to the overt references to jazz vocabulary, Cassidy also modeled the structure of the piece after the structures of recorded performances of the Coltrane quartet. In a private interview with Cassidy, he explained to me that the entire piece is made of various instrumental solos with accompanying parts, with each musician shifting in musical roles throughout the work.

Another important source of artistic and conceptual inspiration for this work comes from the visual artwork of Gerhard Richter, as referenced in the title of both of Cassidy's recent quartets. Cassidy's *Self Portrait, Three Times, Standing. (15.3.1991–20.3.1991)* (2019) references a series of painted over photographs in a self-portrait series created by Richter in 1991 (see figure 24).

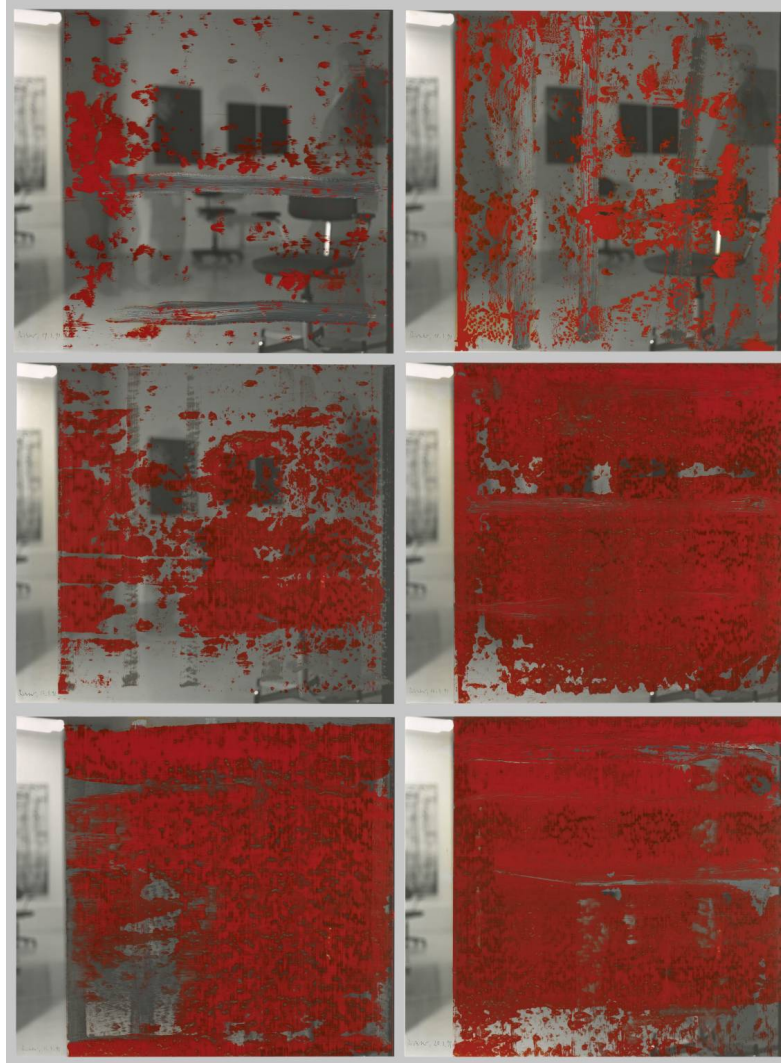


Figure 24: Richter, Gerhard. "Self Portrait Standing, Three Times, 17.3.1991." (1991)⁵⁸

In his recently published video lecture, *A way of making ghosts*⁵⁹, Cassidy explains his personal interpretation of Richter's paintings and how they informed his compositional ideas in

⁵⁸ Richter, Gerhard. "Self Portrait Standing, Three Times, 17.3.1991." 1991. 6 photographs, gelatin silver print on paper with oil paint. <https://www.tate.org.uk/art/artworks/richter-self-portrait-standing-three-times-17-3-1991-ar00182>.

⁵⁹ Cassidy, Aaron. "A Way of Making Ghosts. A Lecture by Aaron Cassidy." Vimeo: Schloss Wiepersdorf, 2020. <https://vimeo.com/428788054>.

writing the pair of quartets. Cassidy perceives Richter as a hazy, ghost-like figure in the series of photographs, partially obstructed beneath a dense layer of painting over the photographic images that progresses to obscure almost everything within the original photographs. Cassidy describes how this work calls into question for him what is real versus what is represented in an artist's work. In other words, this work explores a dialogue between the sense of authentic intentionality in an artist's work and the practice of positioning or posturing that an artist can exert within a self-portrait. Cassidy explains:

Like the Richter, both of the two quartets draw on ideas of reference and referentiality, that is, to other materials, to other types of materials, and in both cases even to other musics. [...] Both quartets also deal with questions of self-reference, working through my own previous work, reusing materials, reusing approaches or techniques [...] both of the quartets play with questions around surface and depth, and ways in which a painterly surface can both reveal and obscure. So, playing with the kind of ambiguity of whether the original material or the defacement is the real material, and also which is the more representative or personal kind of reflection of self [...] I guess what I'm working through is at what point does my own compositional methodology shift from a kind of honest, expressive vulnerability to something which is dishonest, posturing, which is kind of separate from myself.⁶⁰

Cassidy continues to elaborate in his lecture on how he believed in his early compositional career that composing intuitively meant that he was writing with inherited forms and therefore not necessarily being entirely authentic in his composition. He dealt with this perceived problem by inventing entirely new notational systems and musical vocabulary. As his career progressed, however, he began to feel that the rigidity of his earlier methods perhaps didn't align with the emotive expressivity that he desired in his work. Richter's model of self-portrait offered Cassidy insight into ways that seemingly contradictory elements can live together within a single work. Additionally, in observing Richter's oeuvre Cassidy was fascinated by how different works such

⁶⁰ Ibid.

as *Self Portrait. 1991* (see figure 25) seem to have been made by entirely different artists, suggesting a possible versatility that Cassidy hadn't fully explored within his own oeuvre yet.

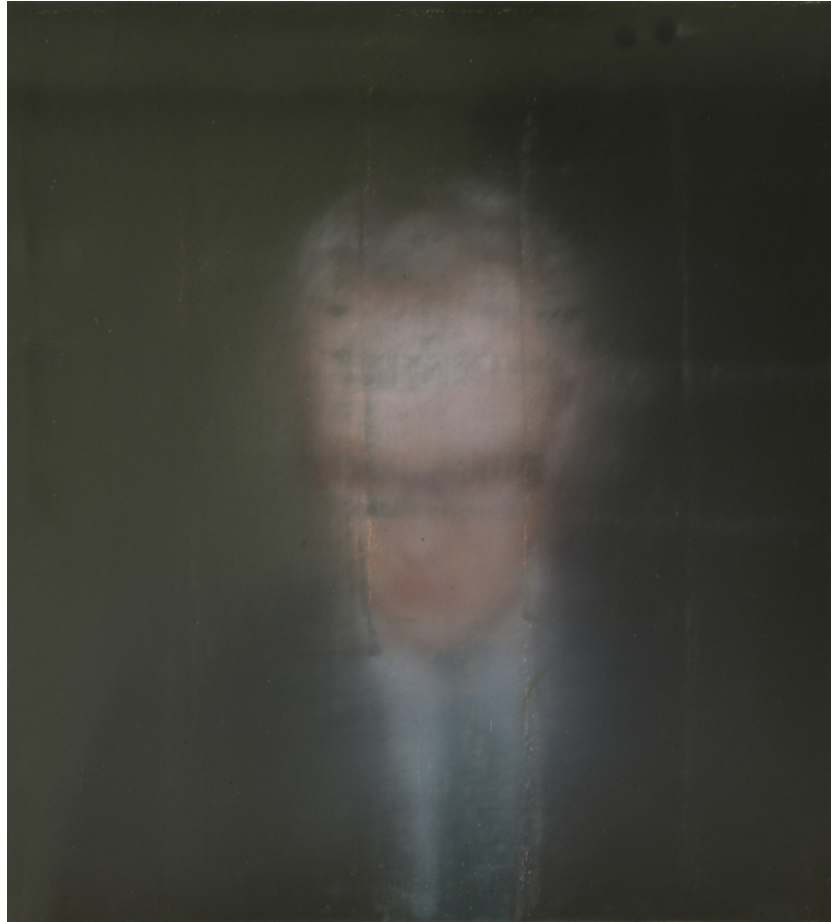


Figure 25: Richter, Gerhard. "Self Portrait." (1996)⁶¹

Cassidy decided to re-examine his own working methods in these two quartets by both integrating references to his personal influences and allowing the compositions to feature a more fluid

⁶¹ Richter, Gerhard. "Self Portrait." 1996. Oil on canvas.
<https://www.gerhard-richter.com/en/art/paintings/photo-paintings/portraits-people-20/self-portrait-8185/?p=6>.

evocation of his original compositional inventions (rather than rigid adherence to rules of invention that he set for himself). Cassidy explains:

Both of these two recent quartets explore similar issues and questions as those posed by the Richter self-portraits. So, they dance between the representational and the abstract, between obliteration as a kind of covering, and obliteration as a method to reveal the reality of instrumental and physical bodily materiality or corporeality. Between intimacy and separation, between vulnerability and otherness, between layering as a kind of stacking or extending, and layering as a kind of covering or concealing or hiding. The two pieces, the two quartets, were always conceived of as being mirrors of one another. In many ways [...] they sit in opposition to one another [...] The first quartet [...] is very much external. It's outward, it's explosive, most of its energies are about things that are expanding outward [...] The second quartet is very much inward, it's reflective, it's closed, it's internal, all of its energies are pulling in, but the idea all along was that both of those pieces were always based on the same reflections.⁶²

As Cassidy describes, *Self Portrait, Three Times, Standing*. (15.3.1991–20.3.1991) explores an extroverted, wild, and explosive musical personality informed by Cassidy's personal admiration of several influential jazz musicians including Thelonious Monk, McCoy Tyner, Cecil Taylor, and Elvin Jones. The soloistic passages given to each musician are formally simple, outward, and accompanied by the other players. Cassidy further explains that all the solo material within the quartet experiments with varying degrees of clarity versus splintering of musical and physical gesture. The accompaniment material is modeled after the behaviors within a jazz quartet (e.g., vamping, chordal repetition, looping of phrases, responding and/or inserting additional soloistic hype to the ensemble, etc.) and revolves around collective explorations of variations in tempo that interdependent between the instrumental parts of the ensemble. This multi-layered structural approach also relates to the multiple layers of Richter's self-portrait, in terms of how he covers the photographs with a red, painted layer, which smears and obscures the photographic layer, and the

⁶² Cassidy, Aaron. "A Way of Making Ghosts. A Lecture by Aaron Cassidy." Vimeo: Schloss Wiepersdorf, 2020. <https://vimeo.com/428788054>.

dialogue between foreground and background (two-dimensional versus three-dimensional) in Richter's work. Cassidy's version of exploring this tension between material layers is created through the instability of ensemble roles and musical splintering within each musician's individual part.

2.1 suddenly destabilised—breaking apart, independent energies

some that, compressed routines; reasonably isolated and separate

becoming these extended, arbitrary, non-linear, repeated

sax

3 2 3 2 2 4 5 6

tb
cup muf

6 6 3 5

8 wild, irregular, explosive; unpredictably heterogeneous

4 2 5 5 4 2 6 2

pf

serious ped

heavy, thick, punchy, powerful, clearly interlined and unified with piano—altogether

cb
pizz

4 5

grating, aggressive, noisy, heavy

Figure 26: Cassidy: *Self Portrait, Three Times, Standing*. (15.3.1991–20.3.1991) (2019), section 2.1 excerpt

For example, in section 2.1 (see figure 26) within each individual part there is a high degree of variability and fragmentation in each individual part. The solo line in the saxophone part dovetails

into increasingly explosive frenetic outburst in the piano part, while the bass line accompanies the quartet with unstable fragments of plucked bass lines reminiscent of a jazz bass line, while the trombone player independently provides background texture with extended muted tones. Within a matter of seconds, the bass part completely changes to the original action-determined vocabulary of Cassidy's music while the other parts begin to thin out in the ensemble. This excerpt exemplifies the frenetic ever-changing relational forces within the ensemble over the course of the piece, as well as the local fragmentation and splintering that occurs within each individual part. In the section that follows, I will discuss how I built upon my experience with the learning process of *The wreck of former boundaries* for solo contrabass to develop a learning strategy for developing a performance interpretation of *Self Portrait, Three Times, Standing. (15.3.1991–20.3.1991)* that not only involved instrumental reconception, but also reflected and integrated my understanding of Cassidy's compositional evolution.

The method of instrumental reconception

As discussed at length in my qualifying exam paper, I developed a learning strategy specific to Cassidy's recent notational system that deals with the challenges of the disassembly of my trained performance technique. In learning *Self Portrait, Three Times, Standing. (15.3.1991–20.3.1991)*, I first learned the independent notated movements separately, prioritizing the right hand (the striking/bowing/plucking hand) over the movements of the left hand. Second, I practiced small excerpts (or "chunks") of material integrating the two hands together. Third, I worked with Cassidy in person in rehearsals on refining the performance techniques to get the qualities of sound that he envisioned for the work. Fourth, I freely explored and improvised with the notated material and playing techniques to experiment with the range of colors and sounds that I could get out of the instrument with these methods. I did not apply the method of composing my own piece modeled

after Cassidy's in this project, however I did vividly remember my experience of doing so in 2018 and drew from the technical and sonic palette that I developed in that learning experience. Overall, the initial learning stages of approaching *Self Portrait, Three Times, Standing. (15.3.1991–20.3.1991)* were similar to *The wreck of former boundaries* except for the fact that the whole process was expedited by my fluency with the notational system and my muscle memory of Cassidy's musical vocabulary.

The striking difference between my learning process for *Self Portrait, Three Times, Standing. (15.3.1991–20.3.1991)* and *The wreck of former boundaries* came from the differing musical contexts and stylistic influences between the two pieces. Overall, I developed much more variety and versatility in how I performed the bass part of *Self Portrait, Three Times, Standing. (15.3.1991–20.3.1991)* because the material behaved in various ways both self-referentially within the bass part and in how it interacted with the other ensemble players. For example, the passages with the bass part that featured standard music notation and directly referenced the traditional playing of a bassist within a jazz quartet prompted me to evoke my own experience in performing and listening to musicians of the jazz tradition, an interpretive process that did not come up at all in *The wreck of former boundaries*. Further, when I would oscillate between performing external musical references and Cassidy's original vocabulary, I would emphasize the noisy, fragmented, and unstable nature of Cassidy's unique lexicon, as a point of contrast with the jazz inspired material. This process differed from how I interpreted *The wreck of former boundaries* in that because that work is entirely comprised of Cassidy's original vocabulary, I felt compelled to intuitively listen for and spontaneously create moments of pitch relationships or a sense of harmonic form within the work (not at all to insert my own compositional ideas, but rather to take

advantage of the freedom of the notation to explore my own musicality within the limits set by the score).

Another significant difference between learning *Self Portrait, Three Times, Standing. (15.3.1991–20.3.1991)* and *The wreck of former boundaries* was the difference in how the temporality of phrases were structured and therefore learned. In *The wreck of former boundaries*, the timing of performing the entire piece was entirely dependent on how I interpreted the movements defined in Cassidy's score. Although there were guidelines of aiming to execute each line of the score in approximately thirty seconds, there were no other rhythmic indications external to the gestures notated. As a result, I often performed the piece far too quickly, at a rate of an average of five seconds too fast per each line, making the piece five minutes in length when it was intended to be six minutes in length. As I continued to work on improving my performance, I started to practice with a stopwatch to slow down my interpretation of the gestures within the score. *Self Portrait, Three Times, Standing. (15.3.1991–20.3.1991)* differs from *The wreck of former boundaries* in that it features a flexible and interdependent meter system within the work that forces the musicians to create a common shared measurement of time (see figure 27). Given that the meter system was both fluid (subjective, not determined by numerical tempo values) and interdependent, I both annotated my score by highlighting the bar lines to visually connect my part with the with other parts in critical passages of the work and adjusted my sense of timing within rehearsal and performance in response to the interpretations of time performed by the other players. This greatly influenced my learning of the work and could only occur in the rehearsal and performance process alongside the other musicians. My annotations also show how I noted for myself when I was performing in a soloistic role and when I should prioritize coordinating with another player's part.

1.3

breaking apart; playful; dancing back and forth between foreground and background

sax

tb
cup mute

pf

cb

delicate, supporting, linear, looping

ped. ad lib.

also D+A?

clearly paired with trombone, but more forward, more energetic, increasingly more soloistic

also G+D?

solistic and quite weird; increasing in energy across the passage; left hand pitch flourishes should be fast and uncontrolled, sharp and away from fingerboard

W/TBN,
BUT
SOLOISTIC

SOLOISTIC
WEIRD

Figure 27: Cassidy: *Self Portrait, Three Times, Standing*. (15.3.1991–20.3.1991), section 1.3 excerpt with KS annotations

In reflecting on my learning process and performance of *Self Portrait, Three Times, Standing*. (15.3.1991–20.3.1991), I find the piece to evoke a depth of musicality both in compositional form

and in performance interpretation that reflects Cassidy's recent evolution as a composer. The variety of musical material and behaviors within the work maintain my engagement as a listener in a way that I don't experience with *The wreck of former boundaries* (which is not to diminish the latter work, but rather to emphasize my enthusiasm for Cassidy's continued evolution as a composer). Had I not had my prior experience with his scores, I would have had to approach learning this quartet with more steps and thus a longer learning process of instrumental reconception and interpretation refinement. Given that I was able to build on my learning strategies developed prior the creation of this work, I had the opportunity to push my learning strategies further by focusing my energy on engaging conceptually with the work as well as prioritizing my part's relationship with the ensemble dynamic. The footnote below features a YouTube link to an audio recording of the world premiere performance of Cassidy's *Self Portrait, Three Times, Standing, (15.3.1991-20.3.1991)*, performed by the ELISION Ensemble at the Center for 21st Century Music, at the University of Buffalo, on April 23, 2019.⁶³

Conclusion

With my practice-based research of learning and performing *Self Portrait, Three Times, Standing, (15.3.1991–20.3.1991)*, I discovered the value of not only strategizing learning methods with processes of instrumental reconception (through the re-synthesis of disassembled technique), but also the value of refining one's learning strategy to engage with the conceptual nuances of a work. Had I engaged with this score with exactly the same process that I had developed in learning *The wreck of former boundaries*, I would have missed out on the opportunity to refine my own performance of Cassidy's inventive musical vocabulary in parallel with his own recent artistic

⁶³ Cassidy's *Self Portrait, Three Times, Standing, (15.3.1991-20.3.1991)*, performed by the ELISION Ensemble at the Center for 21st Century Music, at the University of Buffalo, on April 23, 2019.
https://www.youtube.com/watch?v=E_CLih0_WoM

evolutions in creating these two new quartets. As a performer, I also had the opportunity to engage with the variances in musicality that emerge from self-reference within my own experience of performing Cassidy's music, experimentation with evoking external musical references within Cassidy's work, and the continued exploration of energetic expression that emerges from exploiting the disassembly of traditionally integrated physical techniques in musical performance.

Conclusion

In conclusion, I offer this paper as a collection of learning strategies that suggest the artistic and practical values of developing a personalized methodology in preparing performance interpretations of new works. The learning methods that I designed were entirely specific to the time and developmental place I was in when approaching each individual work. Had I learned Barrett's *splinter* prior to approaching Saunders' *Fury II*, I imagine I likely would have built a click track for learning the rhythmic material of *Fury II*. However, if I were to learn these pieces all over again ten years from now, I would expect to have an entirely different approach influenced by my lived experience between now and then. I believe that the value of this research isn't necessarily in the methods themselves, but in the process of experimentation and discovery that one goes through in fearlessly tackling unique challenges. I hope that this discussion could provide some insight into the greater significance and implications of a devoted study of contemporary music performance, to exemplify how one can learn to solve immense problems with creativity and rigor and share the fruits of that creative effort with a larger community.

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