

THE SOLO PIANO MUSIC OF DAVID LANG

Karl Larson

A Dissertation

Submitted to the Graduate College of Bowling Green
State University in partial fulfillment of
the requirements for the degree of

DOCTOR OF MUSICAL ARTS

December 2012

Committee:

Laura Melton, Advisor

Kenneth Thompson

Marcus Zagorski

Beatrice Guenther

© 2012

Karl Larson

All Rights Reserved

ABSTRACT

Laura Melton, Advisor

Since the inception of Bang On a Can in 1987, David Lang has become one of the most successful American composers of his generation. Along with fellow Bang On a Can founders Michael Gordon and Julia Wolfe, Lang has built a strong career composing minimalist influenced music in a postminimalist world. His resultant style features music that, like early minimalist works, is highly repetitive and limited in musical means. However, Lang's work lacks an emphasis on transparency in process and compositional method, an imperative quality in early minimalist music.

David Lang's compositional output has been substantial in many areas; he is particularly well known for his works for percussion, various chamber groups, and vocal works. While these compositions are often played and highly regarded, his piano works have not been given the same attention. Beginning with 1983's *While Nailing at Random* up until 2012's *Hard Hit*, Lang has published seven single movement piano works as well as *Memory Pieces*, a set of seven pieces completed in 1992.

David Lang's solo piano oeuvre is among the most substantial in the minimalist catalogue. This study was first to explore Lang's solo piano repertoire as a whole, both comparing it to other minimalist solo piano works as well as to one another in order to better understand Lang's development as a composer. This information was gathered through an analytical study of David Lang's solo piano music, an interview with the composer, and a study of the solo piano genre within the minimalist music movement as a whole.

Upon completing an interview with David Lang, an analysis of his works for solo piano, and an overview of minimalist solo piano music, it is clear that David Lang, while influenced by the music of earlier minimalists, has developed his own compositional voice. While Lang consistently uses process in his music, his application of process is meant to limit his access to musical material rather than place an emphasis on observable patterns. Unlike earlier minimalists who strove for transparency of process in their compositions, Lang keeps his processes hidden beneath the surface of the music.

ACKNOWLEDGMENTS

Karl Larson would like to thank Laura Melton, Kenneth Thompson, Marcus Zagorski, and Beatrice Guenther for their guidance throughout this degree process.

TABLE OF CONTENTS

	Page
CHAPTER I: THE KEYBOARD WORKS OF YOUNG, RILEY, GLASS, REICH, AND ADAMS.....	1
La Monte Young.....	4
Terry Riley.....	8
Philip Glass.....	12
John Adams.....	21
Steve Reich.....	24
Conclusion.....	27
CHAPTER II. DAVID LANG'S BIOGRAPHY AND STYLE.....	28
CHAPTER III. THE SOLO PIANO COMPOSITIONS.....	36
Memory Pieces.....	40
<i>Cage</i>	41
<i>Spartan Arcs</i>	45
<i>Wed</i>	58
<i>Grind</i>	64
<i>Diet Coke</i>	65
<i>Cello</i>	70
<i>Wiggle</i>	73
<i>Beach</i>	79
Post-Memory Pieces.....	83
<i>Broken Door</i>	84

<i>Boy</i>	88
<i>Cut</i>	93
<i>The Point</i>	97
<i>This Was Written By Hand</i>	99
<i>Hard Hit</i>	109
Outliers.....	112
<i>While Nailing at Random</i>	113
<i>Psalms Without Words</i>	120
CHAPTER IV. CONCLUSION.....	123
BIBLIOGRAPHY.....	128
APPENDIX. HSRB APPROVAL FORM.....	131

LIST OF FIGURES

Figures		Page
1	Thematic Chords in <i>The Well-Tuned Piano</i>	6
2	<i>Keyboard Study No. 1</i> - First Page and Instructions.....	9
3	<i>Keyboard Study No. 2</i> – Page 8.....	11
4	<i>Two Pages</i> - Cells 1-5.....	14
5	<i>Music in Fifths</i> - Cells 1-4.....	15
6	<i>Music in Contrary Motion</i> - Cells 1-2.....	16
7	<i>Mad Rush</i> (mm. 1-4).....	18
8	<i>Mad Rush</i> (mm. 5-8).....	18
9	<i>Mad Rush</i> (mm. 55-57).....	19
10	<i>Metamorphosis 1</i> (mm. 6-9).....	20
11	<i>Metamorphosis 2</i> (mm. 31-32).....	20
12	<i>Wichita Vortex Sutra</i> (mm. 71-73).....	20
13	Graphic Realization of "Gating" in <i>China Gates</i>	22
14	<i>Cage</i> (mm. 1-6).....	42
15	<i>Spartan Arcs</i> (mm. 1-6).....	45
16	<i>Wed</i> (mm. 1-8).....	59
17	<i>Grind</i> (mm. 1-10).....	65
18	<i>Diet Coke</i> (mm. 7-18).....	67
19	<i>Cello</i> (mm. 1-9).....	71
20	<i>Wiggle</i> (mm. 1-5).....	74
21	<i>Wiggle</i> (mm. 67-71).....	74

22	<i>Beach</i> (mm. 1-4) (middle voice).....	80
23	<i>Beach</i> (mm. 1-20).....	82
24	<i>Broken Door</i> (mm. 1-4).....	85
25	<i>Broken Door</i> (mm. 1-8).....	86
26	<i>Boy</i> (mm. 14-23).....	92
27	<i>Boy</i> (mm. 69-73).....	93
28	<i>The Point</i> (mm. 41-52).....	98
29	<i>This Was Written By Hand</i> (mm. 1-10).....	102
30	<i>Hard Hit</i> , sixteenth-note line (mm. 1-2).....	110
31	<i>Hard Hit</i> , sixteenth-note line (mm. 71-72).....	110
32	<i>Hard Hit</i> , sixteenth-note line (mm. 138-139).....	110
33	<i>Hard Hit</i> (mm. 1-5).....	111
34	<i>While Nailing at Random</i> , thematic motive 1/3 (m. 6).....	113
35	<i>While Nailing at Random</i> , thematic motive 2/3 (m. 7).....	114
36	<i>While Nailing at Random</i> , thematic motive 3/3 (m. 3).....	114
37	<i>While Nailing at Random</i> , thematic motive 3/3 (m. 20).....	115
38	<i>Klavierstück IX</i> , repeated chords motive (mm. 1-2).....	117
39	<i>Klavierstück IX</i> , soft sustained chord motive (m. 17).....	117
40	<i>Klavierstück IX</i> , flourish motive (mm. 121-122).....	118

LIST OF TABLES

Tables		Page
1	<i>Spartan Arcs</i> , pitch-change pattern (mm. 1-64).....	48
2	<i>Spartan Arcs</i> , pitch-change pattern (mm. 190-267).....	50
3	<i>Spartan Arcs</i> , pitch-change pattern (mm. 267-351).....	52
4	<i>Spartan Arcs</i> , pitch-change pattern (mm. 351-379).....	56
5	<i>Spartan Arcs</i> , sixteenth notes per bar (mm. 1-189).....	57
6	<i>Spartan Arcs</i> , sixteenth notes per bar (mm. 190-379)	57
7	<i>Wed</i> , tetrachords including disruptive pitches.....	61
8	<i>Wed</i> , tetrachords without disruptive pitches.....	63
9	<i>Diet Coke</i> , pitch-class organization with transposed middle voice.....	68
10	<i>Diet Coke</i> , pitch-class organization.....	68
11	<i>Cello</i> , numbered trichords.....	72
12	<i>Wiggle</i> , right-hand and left-hand septachords.....	76
13	<i>Broken Door</i> , meter pattern.....	85
14	<i>Broken Door</i> , section 1 (mm. 1-64).....	87
15	<i>Broken Door</i> , section 2 (mm. 65-130).....	87
16	<i>Broken Door</i> , section 3 (mm. 131-196).....	87
17	<i>Broken Door</i> , section 4 (mm. 197-262).....	87
18	<i>Boy</i> , organization of pitches (mm. 69-148).....	90
19	<i>Cut</i> , pitch collections for alto, tenor, and bass voices.....	95
20	<i>Cut</i> , pitch collections in the soprano voice.....	95
21	<i>Cut</i> , organization of pitches with interruptive pitches removed.....	96

22	<i>The Point</i> , three-bar groupings in five sections.....	98
23	<i>This Was Written By Hand</i> , durational pattern for pitch-class 4 (mm. 1-121).....	100
24	<i>This Was Written By Hand</i> , durational pattern for upper right-hand voices (mm. 1-121)	101
25	<i>This Was Written By Hand</i> , durational pattern for pitch-class 0 (mm. 122-282).....	103
26	<i>This Was Written By Hand</i> , durational process for upper right-hand voices (mm. 122-335).....	104
27	<i>This Was Written By Hand</i> , durational process for bass voices (mm. 262-378).....	105
28	<i>This Was Written By Hand</i> , durational process in upper right-hand voices (mm. 267-356).....	107

CHAPTER I: THE KEYBOARD WORKS OF YOUNG, RILEY, GLASS, REICH, AND ADAMS

Over the course of the past fifty years, minimalist music has been established as a permanent feature in the soundscape of American culture. Initially an underground genre comprised of a combination of jazz, pop, world music, and modern classical influences in a sparse, repetitive aesthetic, American minimalism has grown into a multifaceted entity complete with sub genres, reactionary genres, and immensely successful composers. Today, American minimalism is one of several dominating styles in the world of modern classical music. Many minimalist composers and performers enjoy bountiful commercial success and exposure in the eyes and ears of the general public. However, it is often viewed by critics as a gimmick-riddled and profit-driven genre, partially because of its success, but also because of its stripped down and processable aesthetic. One particularly negative summation of the genre can be found in Christopher Fulkerson's diatribe, *The Pornography of Boredom*, in which he writes: "Anyone who allows minimalism is a fraud. Its popularity is deplorable and the resultant exclusion of genuine modern Classical music from programs is worse than a loss for Civilization, it is proof we are living in a time of its abject failure."¹ While the repetitive qualities and the frequent use of tonality make American minimalism an easy target for this type of criticism, it is imperative to remember that minimalism was originally an avant-garde art form. Indeed, many minimalist works are aesthetically simple and easy to grasp; however, they were created in this manner with a purpose. The early works of La Monte Young, Terry Riley, Steve Reich, and Phillip Glass were composed to reintroduce musical elements rarely featured in the compositions of prominent modernist composers of the 1950s and 1960s.

The composers of early American minimalism were unsatisfied with the status quo of modern music during the 1950s and early 1960s. Still largely dominated by the modernist aesthetic fostered at

1 David Fulkerson, "The Pornography of Boredom" from <http://christopherfulkerson.com/writingsonmusic.html>.

Darmstadt in Europe and the music technology centers at Princeton and Columbia in the United States, the serialist driven post-war contemporary music scene was unappealing to the early minimalists. In an interview with Jonathan Cott, Steve Reich described the musical climate in which he studied, expressing his desire to reinstate a sense of pulse and tonality in modern music.

In the academic world that I studied in from 1957 to 1963, the prevailing works of that time, written by Stockhausen, Boulez, Berio and Cage, were nonpulsatile – there was no regular beat. There was a simultaneous move to have no sense of key, cadence, or resting point in the music. I had come from Bach, Stravinsky, and jazz (particularly John Coltrane), all of which shared a very clear, demarcated pulse. I realized that if I were going to do anything that had the least emotional resonance for myself, I had to reinstate the pulse, front and center.²

Reich further described his desire to separate from the European modernist tradition in an interview with Anne Teresa de Keersmaeker.

I just did what I really wanted to do musically knowing full well that most of the musical establishment would dismiss it and dislike it since they were totally absorbed in serial or aleatoric music that forbade repetition, periodic rhythm and tonality of any sort.... I cut ties with Vienna. I recognize the genius of Schoenberg, Webern, Berg, et al, but I would prefer not to listen to their music.³

Compositions by Boulez, Babbitt, and Stockhausen depended heavily on integral serialist processes, resulting in music that, although it was highly processed, sounded angular and random. Early minimalism reacted against this aesthetic. Minimalist works from the 1960s tended to be more rhythmically and tonally simple than their serialist counterparts. Pitch content was limited to small sets (often tonal or diatonic collections), and rhythms were simple and pulse-oriented. Like the serial techniques popularized by Boulez and Babbitt, the music of the early minimalists relied heavily on process; however, the minimalists valued transparency in process, a quality lacking in serial music of the period. Steve Reich's *Piano Phase*, and Philip Glass's *Two Pages* and *Music in Fifths* are all excellent examples of early minimalist works featuring limited pitch material, simple rhythms, and a strong emphasis on audible process.

² Steve Reich, "Interview with Steve Reich by Jonathan Cott," <http://steverreich.com/>.

³ Steve Reich, *Questions from Anne Teresa de Keersmaeker & Answers from Steve Reich*, <http://steverreich.com/>.

Most of the early minimalist compositions were written for unique ensembles. Steve Reich and Philip Glass both assembled ensembles to perform their works, and Terry Riley and La Monte Young were known for writing music for open instrumentations. The instrumentation of these new groups reflected the instrumentations used by 1960s jazz and rock groups, two musical cultures highly regarded by the minimalists. Because of this emphasis on jazz and rock inspired instrumentation, most of the early masterpieces of minimalism are chamber works; however, each of the early minimalists (with the notable exception of Steve Reich) have at least one historically important work for solo piano. While La Monte Young's *The Well-Tuned Piano* and Terry Riley's *Keyboard Studies No. 1 and No. 2* have not entered the standard pianistic repertoire, they have immense historical significance in the development of the minimalist aesthetic, particularly in regards to minimalist works for solo instruments. Philip Glass has composed a vast amount of solo piano music and enjoys numerous performances of these works each year. While not all of his works have entered into the standard repertory, specific works such as *Mad Rush* and *Metamorphosis* are often performed, and earlier compositions, such as *Two Pages* or *Music in Fifths*, while not specifically composed for solo piano, are some of the most important examples of early minimalism.

The composer of the most well known minimalist solo piano works does not squarely fit in with the original minimalists. John Adams, the composer of *China Gates* and *Phrygian Gates*, is slightly younger than Reich, Glass, Young, and Riley, and he composes in a markedly more traditional style. While he is often grouped with other minimalists, his compositions have never been avant-garde; instead, his music is informed both by minimalist aesthetics and process as well as traditional forms and instrumentation. This combination of new and old can be observed in *Phrygian Gates*, a cell-based work adhering to a form resembling a four-movement sonata with no breaks between movements. This formal arrangement is more reminiscent of the music of Franz Liszt than that of Steve Reich or Philip Glass.

Steve Reich, while one of the most noted composers in the history of minimalism, does not have any compositions specifically written for solo piano. However, thanks to the ingenuity of several arrangers and Reich's foray into compositions with live performer and pre-recorded playback, there are now several works which can be performed by a solo pianist. These works include arrangements of *Piano Phase* (1967) and *Music for Pieces of Wood* (1973) and two new works for piano and tape, "Finishing the Hat" (2011) (Reich's arrangement of a Stephen Sondheim song) and *Piano Counterpoint* (2011), an arrangement of *Six Pianos* (1973).

La Monte Young

La Monte Young (b. 1935) began composing formal works in a modernist aesthetic. He studied at UC Berkeley and UCLA during the late 1950s. As a student, Young experimented with various forms of serialism and atonality. He studied with Stockhausen at Darmstadt in 1959, and he also spent time in New York City studying electronic music with Richard Maxfield. However, while he invested much of his student life in modernist pursuits, Young also maintained a vigorous interest in jazz music. He was an established jazz saxophonist and performed with many notable musicians including Ornette Coleman. As he developed as a composer, he also became increasingly interested in the music and writings of John Cage. His fascination with improvisation and the American avant-garde soon led him to move away from serial composition in favor of a more conceptual style. Examples of Young's conceptual music, which resonate strongly with the Fluxus movement, exist in pieces such as *Compositions: No. 2, 3, 4, 5, 6, 7, 9, 10, 13, 15* (1960) and *Piano Pieces for David Tudor* (1960), in which he instructs the pianist to:

Bring a bale of hay and a bucket of water onto the stage for the piano to eat and drink. The performer may then feed the piano or leave it to eat by itself. If the former, the piece is over after the piano has been fed. If the latter, it is over after the piano eats or decides not to.⁴

These performance art pieces are widely discussed and documented, and will therefore most likely be

⁴ Mark Alburger, "La Monte Young to 1960," *21st Century Music* Vol. 10 No. 3 (March, 2003): 9.

the work for which La Monte Young is best remembered; however, from a pianistic standpoint, his most important work is less based on performance art, leaning heavily towards improvisation.

The Well-Tuned Piano (1964) is widely regarded as one of La Monte Young's most important works, and, amongst scholars of minimalism, it is considered one of the most important solo piano works of the genre. Referred to by Kyle Gann as “the most important American piano work since Charles Ives' *Concord Sonata* (1915) in size, in influence, and in revolutionary innovation,”⁵ this work is a large-scale composition comprised entirely of Young's improvisations over a series of pre-determined key areas. The most readily apparent and unique feature of the work is Young's tuning system, described here by Kyle Gann:

All octaves of the W.T.P. follow the same elegant, logical, twelve-pitch tuning in seven-limit just intonation ("seven-limit" meaning that no prime numbers larger than seven appear as factors). The tuning is based on Eb as 1/1, a choice that evolved from Young's saxophone improvisations. His favorite scale for improvising was G Dorian, in which he developed extended material on the subdominant seventh chord on C concert Eb and that material grew into the tuning of the W.T.P.⁶

Young's adaptation of just intonation gives the work a unique harmonic language and sonic soundscape. Young's meandering lines and chords sound remarkably “in tune” or “out of tune” depending on which intervals and pitches are played. The resulting sounds are reminiscent of Indonesian gamelan music and North Indian ragas. The unique tuning system causes some pitches to sound uncharacteristically bright, almost as though the strings were plucked instead of struck by a hammer.

The Well-Tuned Piano was initially composed in 1964. The first performance, a forty-five-minute improvisation, was given by La Monte Young in New York City during that same year. Young continued to perform the piece, constantly developing the tuning system and form. The seminal Gramavision recording of the work, on which Gann bases his analysis, was made in 1987 and lasts

⁵ Kyle Gann, “La Monte Young's *The Well-Tuned Piano*,” *Perspectives of New Music* Vol. 31, No. 1 (Winter, 1993): 134.

⁶ *Ibid.*, 135.

over six hours. It was the fifty-fifth performance of the work.

While *The Well-Tuned Piano* relies on the improvisations of La Monte Young, there is a clear and distinct structure to the work. This structure is largely based on the movement between eight separate harmonic areas. Young gave each of these harmonic areas a mystical and/or descriptive title, and the slow movement from one harmonic area to another dictates the form of the piece. These harmonic areas, or chords, as Young refers to them, are depicted in figure 1.

Figure 1: Thematic Chords in "The Well-Tuned Piano"⁷

Romantic Chord	Gamelan Chord	Tamiar Dream Chord	189/98 Lost Ancestral Lake Region
----------------	---------------	--------------------	-----------------------------------

<p>84 81 72 64 56 44 48</p>	<p>81 64 54 42</p>	<p>27 24 18 14</p>	<p>27 24 21 18 14 12</p>
---	--------------------------------	--------------------------------	--

EXAMPLE 11

The Brook	The Pool
-----------	----------

<p>21 18 16 14 12</p>	<p>224 192 147 144 128</p>
---------------------------------------	--

⁷ Ibid., 144.

La Monte Young uses these various chords as sets within which to improvise as he performs *The Well-Tuned Piano*, but also as building blocks for form. The movement between various chords occurs very slowly, causing the modulation from one chord to another to be a formally substantial event. An in depth analysis of form within Young's 1987 recording of the work can be found in Kyle Gann's 1993 article in *Perspectives of New Music*, entitled "La Monte Young's *The Well-Tuned Piano*."

No concrete score exists for the work, and aside from Young, only one other pianist (Michael Harrison) has been permitted to perform the piece in public. According to Gann, "like Indian musicians (Young has studied classical Indian raga singing with Pandit Pran Nath since 1970), Young believes in teaching the WT.P. directly to apprentices, and has no desire to publish the score in order for pianists to learn the piece from the printed page."⁸ Due to the eccentric tuning system, the lack of a traditionally notated score, and Young's requirement that performers learn the work by rote, *The Well-Tuned Piano*, while an immeasurably important work in the history of American minimalism, has not entered the more recent canon of standard contemporary solo piano repertoire.

While *The Well-Tuned Piano* is highly repetitive and based upon (mostly) consonant pitch-class sets, it does not fit seamlessly into current definitions of minimalist music. In his article, "Minimal Music, Maximal Impact," Kyle Gann provides a broad definition of minimalist music.

Minimalist music, at least originally, tended to restrict itself to a tiny repertoire of pitches and rhythmic values, like the F Dorian scale and steady 8th-notes of Philip Glass's *Music in Fifths*. The length of the works actually underlines the intense restriction of materials: you might write a four-minute piece using only seven pitches and no one would notice, but write a 30-minute piece, and the austere limitations become a major phenomenon of the composition. Moreover, minimalism borrowed its name from the eponymous art movement, and there are clear parallels between the quasi-geometric linearity and predictability of Philip Glass's and Steve Reich's notes with the clean geometric lines and simple optical illusions of a Frank Stella or Sol Lewitt.⁹

While the expansive duration of *The Well-Tuned Piano* fits with Gann's definition of minimalism, the composition is void of any standard pulse, consisting instead of long expanses of unmeasured space and

⁸ Ibid., 160.

⁹ Kyle Gann, "Minimal Music, Maximal Impact," *New Music Box*, May 1, 2011, accessed August 24, 2012, <http://www.newmusicbox.org/articles/minimal-music-maximal-impact/>, 2.

improvisatory flourishes comprised of rapid, recitative-like iterations of the various chords described in previous paragraphs. The harmonic areas established in the work are also less “minimal” than those described in Gann's definition. The structural chords in *The Well-Tuned Piano* are far more harmonically complex than the sets employed by other early minimalists; however, due to the extremely long nature of most performances, each harmonic area is present for a substantial amount of time. Within each area of the work, strict harmonic limitations are present. In the same article, Gann cites the transparency of process as an essential quality in minimalist music. Young's use of process in this work only applies to form. His arrangement of harmonic areas can be considered a process in itself, which is indeed audible to the listener. Aside from formal arrangement, *The Well-Tuned Piano* contains no processed material. While extreme duration of *The Well-Tuned Piano* is in line with a broad definition of minimalism, the overall musical statement of the piece is not.

Terry Riley

Like La Monte Young, Terry Riley (b. 1935) was educated at UC Berkeley, where he studied the common modern idioms of the late 1950s and early 1960s. Riley was also interested in jazz and world music, and he soon broke out of his academic modernist style, quickly becoming pioneer of American minimalist music. Riley is best known for *In C*, his 1964 composition for open instrumentation featuring a series of fifty-three cells in the key of C Major. In a typical performance of *In C*, the performers move through the cells at their own pace while maintaining a steady pulse throughout the ensemble. This method of performance results in various degrees of counterpoint between the cells and can be regarded (like Young's *The Well-Tuned Piano*) as a form of controlled improvisation.

Terry Riley's most important keyboard works, *Keyboard Studies No. 1 and No. 2* (1964-1966) are composed in a style similar to *In C*. Like *In C*, the *Keyboard Studies* consist of a series of cells intended to be performed in counterpoint with one another. The score for *Keyboard Study No. 1* features a series of numbered cells accompanied by a set of instructions. Figure 2 shows the first page

of the score as well as the instruction page.

Figure 2: Keyboard Study No. 1 - First Page and Instructions¹⁰

Keyboard
Study
#1

Fig. 1.

TERRY RILEY Publ

The image shows a handwritten musical score for 'Keyboard Study #1'. It consists of ten numbered staves of music, each starting with a bass clef and a common time signature. The notation includes various rhythmic values (quarter, eighth, and sixteenth notes), rests, and accidentals (sharps and flats). The score is written in a clear, legible hand. At the top left, the title 'Keyboard Study #1' is written. At the top right, 'Fig. 1.' is written. At the bottom, the name 'TERRY RILEY' and the publisher's name 'Publ' are written.

10 Terry Riley, *Keyboard Study #1* (New York: Associated Music Publishers Inc., 1965): 1-2.

Keyboard Study # 1.

∞ = A repeating figure.

∞∞ = A continuum figure.

The two kinds of figures interlock and are repeated in this fashion until one of the hands selects another figure.

THE TEMPO IS AS FAST AS CAN BE COMFORTABLY PLAYED

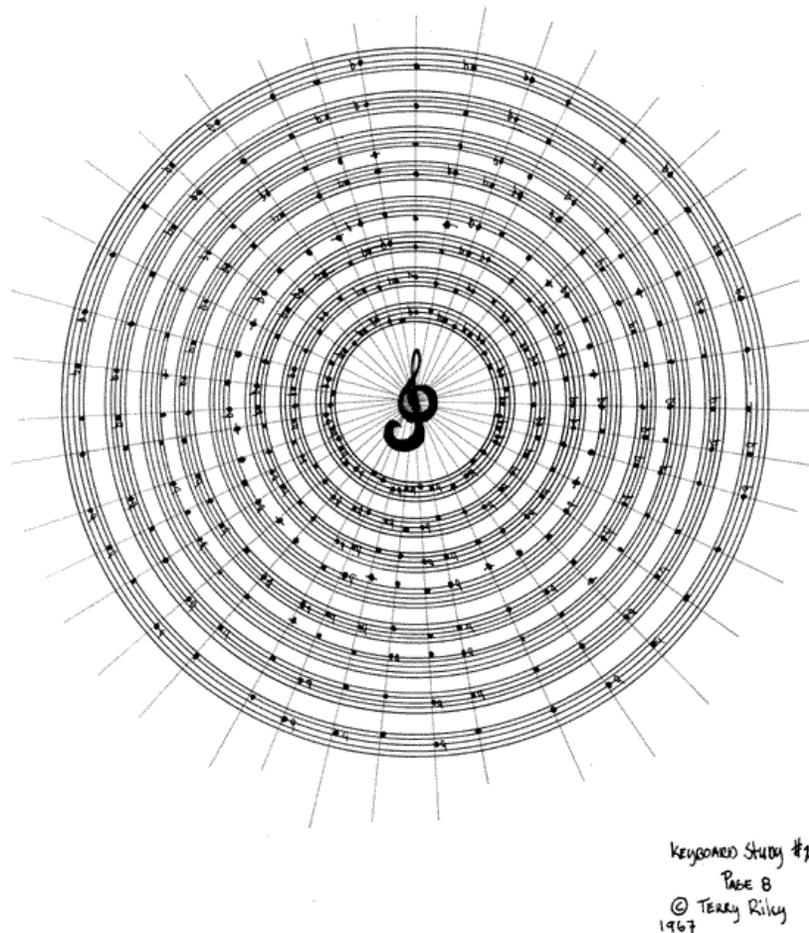
1. COMBINE ANY figure from lines 2-6 with continuum figure 1.
2. IF ANY figure from lines 2-6 is placed in the alignment of continuum figure 1 (beginning with ♩) it may be combined with other figures from lines 2-6.
3. COMBINE ANY figure from lines 8-10 with continuum figure 7.
4. IF ANY figure from lines 8-10 is placed in the alignment of continuum figure 7, (beginning with ♩) it may be combined with other figures from lines 8-10.
5. COMBINE ANY figure from lines 8-10 with continuum figure 1.
6. IF ANY figure from lines 2-6 is placed in the alignment of continuum figure 7, (beginning with ♩) it may be combined with other figures from lines 8-10.
7. COMBINE ANY figure from lines 12-16 with continuum figure 7.

The construction of *Keyboard Studies No. 1* is elegantly simple. The cells themselves are musically uncomplicated. However, as the performer cycles through the cells while adhering to the guidelines provided by Riley's instructions, an array of various polyphonic textures emerge. Due to the varying lengths of each cell, the rhythmic emphasis is passed around to various beats depending on which cells are sounding simultaneously. The consistent pulse and key area remain constant throughout.

In *Keyboard Study No. 2* Riley achieves a musical texture and process highly related to

Keyboard Study No. 1. However, in the second study, Riley places an even heavier emphasis on chance, improvisation, and the freedom of the performer in his notation. Like *Keyboard Study No. 1*, Riley includes a set of instructions; however, his score is no longer laid out in a linear fashion. Instead, Riley chose to notate the work in a series of circular scores. Figure 3 shows an excerpt from the score.

Figure 3: *Keyboard Study No. 2 - Page 8*¹¹



Despite the creative process and historical significance of Riley's *Keyboard Studies No. 1 and No. 2*, they have also failed to enter into the contemporary canon of standard solo piano repertoire. This is largely due to performance issues inherent in the pieces. Throughout both works, the pianist must play simultaneous lines in the same register. This causes the hands to overlap, making some combinations very difficult to fully realize in live performance. Some performers have found ways

¹¹ Terry Riley, *Keyboard Study #2* (New York: Associated Music Publishers Inc., 1967): 8.

around this difficulty by performing the work with two pianists on separate instruments. Other solutions have been reached in the recording studio by overdubbing the cells instead of performing them live, as was done by Steffen Schleiermacher in his 2002 recording on MD&G Records.

Many of Terry Riley's compositions, including *In C* and *Keyboard Studies No. 1 and No. 2*, are heavily influenced by improvisation. While his works are more strictly notated than Young's *The Well-Tuned Piano*, they still result in unique performances each time they are played. By composing series of cells and enabling performers to move through the score and combine cells at their own discretion, Riley arrived at a form of minimalism that, while controlled, resulted in an improvisatory aesthetic. Like *The Well-Tuned Piano*, Riley's *Keyboard Studies No. 1 and No. 2* exhibit an audible formal process; the movement between cells is apparent to the listener. Riley employs a strict and constant pulse, which adheres to Gann's guidelines for minimalism. His selection and arrangement of pitch content is also congruent with Gann's definition. In *Keyboard Study No. 1*, he uses a (8, T, 0, 2, 3) pitch-class set, establishing a tonal center of E-flat major. He also bases his cells on simple processes. The second cell in *Keyboard Study No. 1*, for example, consists of three measures, each containing three notes. Each measure features a different arrangement of the three notes. In the first measure, Riley writes (3, T, 3) (the first pitch-class 3 is one octave higher than the second). The second measure shifts the same pattern one beat to the left, resulting in a (T, 3, 3) pattern (the higher pitch-class 3 is now the third pitch). The third measure continues in the same fashion with a (3, 3, T) pattern (the first pitch-class 3 is the lower pitch). This process, like the movement from cell to cell, is audible to the listener. Because of his use of audible process, pulse-driven rhythms, and a limited collection of pitches, Riley's *Keyboard Studies No. 1 and No. 2* fit neatly into Gann's broad definition of minimalism.

Philip Glass

Philip Glass, while a contemporary of La Monte Young and Terry Riley, represents a different style of American minimalism. Glass was born on the east coast and received an elite musical

education. A student of Vincent Persichetti at Juilliard and Nadia Boulanger in Paris, Glass was well versed in the standard canon as well as the dominating modernist styles of the 1950s and 1960s. However, like Riley and Young, Glass also had interests in jazz and world music, particularly Indian music. These interests substantially influenced Glass, leading him to compose in a stripped down, pulse driven manner. Glass' early minimalist compositions were extraordinarily stripped down. Works such as *I+I* (1967) and *Two Pages* (1968) are prime examples of “minimal” music, featuring a highly restricted use of rhythmic and pitch elements manipulated by simple processes. After 1975, his music became more complex and more harmonically driven. Works such as *Einstein on the Beach*, *Glassworks*, and the string quartets are far from the avant-garde offerings of the 1960s. His works have become progressively more dependent on harmony and traditional forms and ensembles, and they have established him as a leading composer of his generation.

Philip Glass is the most prolific composer of minimalist keyboard music to date. A pianist himself, Glass's keyboard music is highly idiomatic, although rarely (if ever) technically demanding in a traditional sense. While Glass has many works composed strictly for solo piano, such as the *Wichita Sutra Vortex* (1988), *Metamorphosis* (1988), and the *Etudes for Piano: Volume I* (1994-1995), many of his works commonly performed by solo keyboard instruments are composed for piano *or* organ (most notably *Mad Rush* (1979)). Other important works are simply void of orchestration indications in the score. Among these open instrumentation works are *Two Pages*, *Music in Fifths*, and *Music in Contrary Motion* (all composed between November of 1968 and November of 1969). Along with *I + I* and *Music in Similar Motion*, these three compositions are considered to be Glass' first mature compositions in a minimalist style, as well as his most truly “minimalist” works. As noted by Keith Potter in his introductory note to the score of these works,

Each of these compositions is constructed from a basic unit, which may vary in length from work to work and is usually easily divisible into two or more sub-units, which in turn may evolve independently. The scores themselves then simply notate the expansions and contractions of the

basic unit that form the structure of each work, grouping these into figures of varying lengths without recourse to bar lines. Importantly, each of these figures is to be repeated an unspecified number of times before the next figure is reached.¹²

Each of these basic units is linear, and the evolution referred to by Potter is exclusively arrived at through the use of additive and subtractive processes. This process involves the addition or subtraction of beats, pitches, or both to an existing unit, methodically changing the contour of the line.¹³ Glass' use of additive and subtractive processes is the only mode of alteration used in these works; therefore, the audible process comprises the entirety of development in these early compositions (a slight exception exists in *Music in Similar Motion*, which features both additive and subtractive processes as well as the methodical addition of extra voices).

Aside from *I+I*, which is for solo performer and amplified table top, *Two Pages* is the most minimal offering of these early pieces. The work is comprised of a single line of constant eighth notes playing a (02357) pitch-class set. The line is broken up into 75 rhythmically uninterrupted cells, each altered by Glass' use of the additive or subtractive processes. An example of the arrangement of cells can be seen in figure 4.

Figure 4: *Two Pages* - Cells 1-5¹⁴



As previously mentioned, the instrumentation for *Two Pages* is unspecified in the score. The work is often performed by a variety of small chamber groups. It was frequently performed with three woodwinds and three electric organs by the Philip Glass Ensemble, and the work was initially recorded

¹² Keith Potter and Philip Glass, *Notes to First Classics: 1968-1969*, by Philip Glass (England: Chester Music, 2010): 5.

¹³ Dan Warburton, "A Working Terminology for Minimalist Music," *Intégral*, Vol. 2 (1988): 146.

¹⁴ Philip Glass, *First Classics: 1968-1969* (England: Chester Music, 2010): 12.

on an acoustic piano and electric organ. However, versions for solo keyboard are also performed, most notably by Steffen Schleiermacher in his 2001 recording of the work for solo electric organ.

Arranged similarly to *Two Pages*, *Music in Fifths* also deals with long strings of uninterrupted eighth notes playing five pitches; however, there are now two lines moving in unison, but displaced by a fifth. The lower voice plays a (578T0) pitch-class set, while the upper voice plays a (02345) pitch-class set. When combined these two sets create a (0234578T) pitch-class set, which can also be thought of as a C Aeolian scale. Although the pitch collection strongly hints at the C minor key area, the work itself is not functionally tonal, and is best thought of as a diatonic work.

Music in Fifths, like Glass' other compositions from this period, is performed by a wide variety of instrumentations. The Philip Glass Ensemble performed the piece with the same instrumentation as *Two Pages* (three woodwinds and three electric organs), and Glass' recording from 1973 uses two soprano saxophones and an electric organ. Schleiermacher's recording utilizes multi-tracked electric organ.¹⁵ While these seminal recordings do not feature a solo keyboard rendition of *Music in Fifths*, the piece lends itself to such a performance. Described by Michael Nyman as a “five-finger exercise,” the work is laid out so that neither line requires a change of position in either hand.¹⁶ An example of this arrangement can be seen in figure 5.

Figure 5: *Music in Fifths* - Cells 1-4¹⁷



Both lines consist of simple five-finger patterns, making the work easily realized by a solo keyboard

¹⁵ Potter, “Notes,” 15.

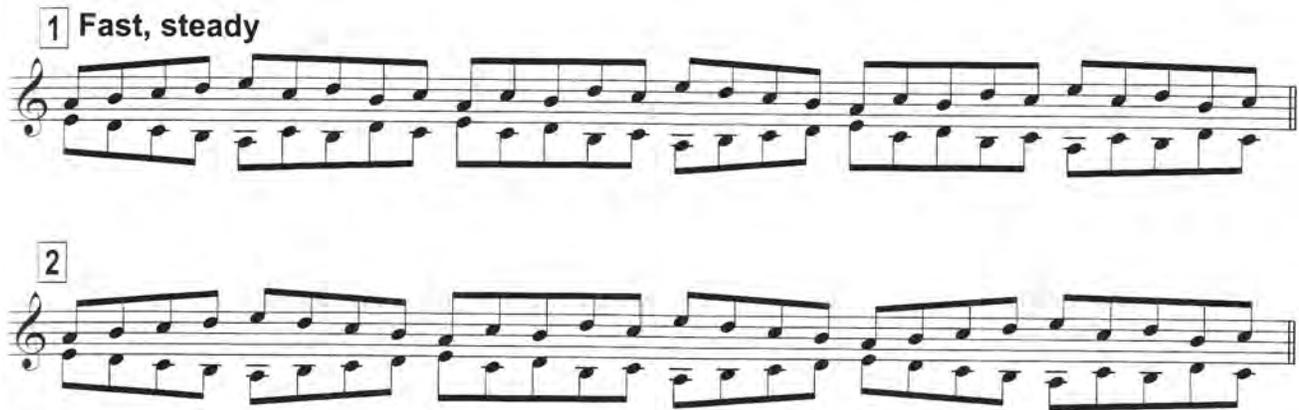
¹⁶ Michael Nyman, *Experimental Music: Cage and Beyond* (Cambridge: Cambridge University Press, 1999): 149.

¹⁷ Glass, “Score,” 16.

instrument. Additive and subtractive processes rhythmically alter these patterns, but the pitch content remains consistent throughout the work.

Music in Contrary Motion, like *Two Pages* and *Music in Fifths* consists of an unbroken chain of eighth notes and a limited set of pitches. *Music in Contrary Motion* is comprised of two lines, which, as the title suggests, move in contrary motion from one another, as shown in figure 6.

Figure 6: *Music in Contrary Motion* - Cells 1-2¹⁸



As in *Music in Fifths*, these lines consist of five-finger patterns; both lines play pitch-class set (9E024). Again, additive and subtractive processes rhythmically alter these lines, but the pitch content remains the same. Keith Potter speculates the contrary linear motion causes this piece to be more difficult than its counterparts, writing, “*Music in Contrary Motion* proved tricky as an ensemble work, and Glass’ 1975 recording is a solo version for electric organ played by the composer himself.... Schleiermacher’s 2001 recording [also] uses an electric organ.”¹⁹ In Potter’s opinion, the solo recordings of this piece are a result of the heightened contrapuntal difficulty in the work; however, the arrangement of the lines again strongly lends itself to a solo keyboard performance. While the contrary motion between lines adds an extra layer of collaborative difficulty compared to *Two Pages* or *Music in Fifths*, such challenges are much less significant on a keyboard instrument, as the arrangement of five-finger patterns in contrary motion results in the performer using parallel fingering in both hands. In this

¹⁸ Glass, “Score,” 16.

¹⁹ Potter, “Notes,” 22.

regard, *Music in Contrary Motion* is pianistically less challenging than *Music in Fifths*.

After the completion of *Two Pages*, *Music in Fifths*, and *Music in Contrary Motion*, Glass' compositional style began to change. While the works from the 1960s were highly polyphonic (or monophonic, in the case of *Two Pages*), his later works became progressively less focused on line and process. His solo keyboard works from 1975 onward are markedly homophonic and formulaic. Glass' most important solo keyboard works following the compositions of the late 1960s include *Modern Love Waltz* (1977), *Mad Rush* (1979), "Opening" from *Glassworks* (1981), *Metamorphosis 1-5* (1988), *Wichita Vortex Sutra* (1988), and *Etudes for Piano: Volume I* (1994-1995). Each of these works is comprised of similar accompaniment patterns and related pianistic memes.

Mad Rush (1979), composed for solo organ or piano, is one of Glass' most popular keyboard works. In this composition, Glass establishes many of the trends that pervade his keyboard music from the 1970s to the present. The work is homophonic and consonant. Mostly built on triads and seventh chords, the tertiary harmonies at work are not entirely tonally functional in the traditional sense (Glass tends to oscillate between a series of harmonies instead of building towards a traditional cadence). One of the most notable and commonly used techniques in Glass's later keyboard works occurs at the beginning of *Mad Rush*. The left-hand accompaniment features eighth notes rocking back and forth between two pitches and a held pedal note in the bass, as shown in figure 7. The combination of the eighth notes (typically playing the interval of a third) and the pedal bass note always establishes a simple triad or seventh chord. This accompaniment figure pervades much of Glass' solo keyboard music.

Figure 7: *Mad Rush* (mm. 1-4)²⁰

Flowing (♩ = 120)

(R.H.)

The introduction of the eighth-note triplet pattern in the right hand, shown in figure 8, is also a commonplace occurrence in Glass' solo keyboard compositions. Like the left-hand eighth-note line, this pattern also oscillates between two pitches, giving the aural impression of different rates of speed between hands.

Figure 8: *Mad Rush* (mm. 5-8)²¹

This texture continues (the right hand occasionally drops out) until m. 53, at which point the texture changes significantly. This new texture features sextuplet arpeggios in both hands. Reminiscent of *Music in Contrary Motion*, these sextuplet lines are nearly mirror images of one another; however, instead of writing two lines in pure contrary motion with one another, Glass continues to compose with triads and seventh-chords, causing the symmetrical nature of the contrary motion to be only

20 Philip Glass, *Solo Piano* (England: Chester Music, 1991): 30.

21 Ibid., 30.

approximate. These figures, shown in figure 9, are all arpeggiations of triads.

Figure 9: *Mad Rush* (mm. 55-57)²²

The image displays two systems of musical notation for measures 55 and 56 of Philip Glass's *Mad Rush*. Both systems are in 14/16 time. The first system (measure 55) shows a continuous, rhythmic pattern of eighth notes in both the treble and bass staves, with a dynamic marking of *ss* (sissississimo) in the treble. The second system (measure 56) shows a similar pattern, but with a change in the right-hand part, where some notes are grouped in a way that creates a stuttered effect. The time signature 14/16 is indicated at the beginning and end of each system.

Glass also alters the “basic units” during the sextuplet section by interjecting an extra two sixteenth notes into some of the measures during this section. This addition of beats is also reminiscent of the 1960s compositions; however, these additions to the basic units create more of a stuttered effect, unlike the smooth, process-based growth of the 1960s compositions. Instead of continuing to grow via additive process, these rhythmic additions retreat back to the original meter after one or two recitations.

The eighth note and eighth-note triplet counterpoint and sextuplets in contrary motion motives comprise all of the musical material in *Mad Rush*. In m. 82, Glass introduces a combination of the two textures, featuring left-hand eighth notes and right-hand sextuplet arpeggios simultaneously. The only slight deviation from these two textures exists in the coda, during which the left hand repeats its pattern from the beginning of the piece while the right hand plays a slow moving octave melody.

The patterns established in *Mad Rush* typify the later keyboard works of Philip Glass. He consistently reuses these gestural themes with slight modifications. For example, the left-hand pattern

²² Ibid., 35.

at the beginning of *Mad Rush* can also be found in *Metamorphosis 1, 2, and 5*, as shown in figure 10.

Figure 10: *Metamorphosis 1* (mm. 6-9)²³

6 (♩ = 120) (R.H.)

mp *rit.*

The repeated sextuplets are also common, as shown in figure 11, taken from *Metamorphosis 2*.

Figure 11: *Metamorphosis 2* (mm. 31-32)²⁴

31

mf

Similar figures spelled in sixteenth notes can also be found in *Metamorphosis 4*, as well as *Wichita Vortex Sutra*, as shown in figure 12

Figure 12: *Wichita Vortex Sutra* (mm. 71-73)²⁵

71 Faster (♩ = 152-160)

ff

These later works for solo keyboard stray from the common definitions of minimalism in

23 Ibid., 4.

24 Ibid., 9.

25 Ibid., 54.

several ways. While they use limited pitch and rhythmic material, the pitches themselves are dictated by a series of triads. There is no longer an emphasis on process, which substantially changes the focus of the compositions. Also, these works change textures multiple times and return to various sections throughout the course of the piece. This creates an identifiable and traditional sense of form. This emphasis on traditional, self-referential structure is far from the original minimalist aesthetic.

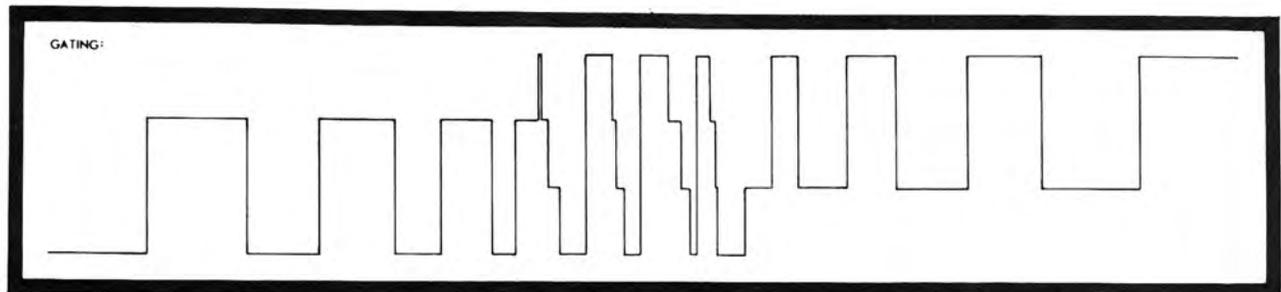
John Adams

John Adams (b. 1947) is slightly younger than the original minimalists and is often considered to be a composer who, although he has minimalist roots and influences, defies definition. Adams, like Glass and Reich, received an elite musical education, studying with Roger Sessions and David Del Tredici at Harvard. After completing his MA degree in 1972, Adams accepted a teaching position at the San Francisco Conservatory. While Adams is only one decade younger than Young, Riley, Reich, and Glass, his experience as a minimalist composer at the end of his education was remarkably different than the experiences of the initial minimalists. While Young, Riley, Reich, and Glass left school to find a world not yet ready to accept their music, Adams was able to take advantage of the recent successes of the minimalist culture. Instead of paving his way in the avant-garde underground, Adams was able to make a smooth transition from attending Harvard to teaching composition at an elite conservatory.

During the 1970s and 1980s, Adams composed in a style strongly tied to minimalism. *China Gates* (1977) and *Phrygian Gates* (1977) utilize multiple minimalist techniques, and *Nixon in China* (1987) remains one of the most important minimalist operas in the repertory. However, later compositions, such as the Pulitzer Prize winning *On the Transmigration of Souls* (2002), *Son of Chamber Symphony* (2007), or his third solo piano work, *American Berserk* (2001), while still embodying a shadow of minimalism, tend to lean more closely to neo-classicism or neo-tonality than process music.

China Gates and *Phrygian Gates* are companion pieces and were both composed in 1977. Both works have entered the standard contemporary pianistic repertory, and while *China Gates* is relatively easy, *Phrygian Gates* marks the first significant minimalist solo piano work demanding traditional virtuosity from the pianist. The “gates” referred to in both titles are not gates in the traditional sense, but instead refer to “gating” in electronic music, the process of switching back and forth between different modes or sounds. Both works are comprised of a series of cells based on different modes, which Adams then alters through a series of minimalist techniques. In *China Gates*, there are three main sections. Although the texture of repeated eighth notes remains constant throughout the piece, it is possible to analyze the work formally through the arrangement of modes. In the first section of the work, Adams moves back and forth between A-flat Mixolydian and G-sharp Aeolian, while the third section features movement between F Locrian and F Lydian. The middle section includes all four modes. Adams method of arrangement in *China Gates* is shown graphically at the beginning of the score. This graphic indication of the form is shown in figure 13.

Figure 13: Graphic Realization of "Gating" in *China Gates*²⁶



As shown in figure 13, the form of the work is highly symmetrical. Adams' attention to form in this regard exhibits the distance between Adams' music and the initial minimalist aesthetic. Original minimalist works often featured a collection of pitches and rhythms subjected to a process or series of processes. The form of a composition was secondary, a by-product of the process. Adams clearly

²⁶ John Adams, *China Gates* (New York: Associated Music Publishers, 1983): 2.

wished to create a work that used a minimalist aesthetic (repeated rhythms, limited pitch material, the use of cells, etc.) that implemented an elegant and intentional form. While the use of additive and subtractive process, as well as the manipulation of small, related cells is congruent with earlier minimalist music, Adams' deliberate manipulation of form places less importance on process as a restrictive technique. The resulting compositions are, therefore, only reliant on process in the construction and development of small musical elements, and can be considered one of the earliest prominent examples of a composer taking minimalist aesthetics and techniques and merging them with his own extra-minimalist sensibilities.

The form of *Phrygian Gates*, a much larger and more difficult work, is also tied to Adams' manipulation of modes and key areas. As Catherine Pelligrino observes in her article, *Aspects of Closure in the Music of John Adams*:

The opening section, measures 1-113, is based on the Lydian mode on A. The following section, measures 114-36, consists of the Phrygian mode on A. This section is followed by the Lydian mode on E (measures 137-235) and the Phrygian mode on E (measures 236-65), and so on, until the final section, measures 977-1092, which alternates between the Lydian and Phrygian modes on E; 150 and D#. Throughout the work, pitch materials are drawn almost exclusively from the diatonic scales indicated by the modes.²⁷

In other words, Adams cycles through the entire circle of fifths over the course of *Phrygian Gates*, bringing the work to a close once he has arrived at the key area of D-sharp. While modulation from one key area to another is not an element commonly found in earlier minimalist works, this process resonates with early minimalist sensibilities. In a sense, Adams' desire to move methodically through every Lydian and Phrygian key area is representative of his process. Once the process has completed itself, or, once every key area has been visited, the work ends.

Along with his methodical movement through all pitch areas, Adams also arranges *Phrygian Gates* in four movements played attacca, each indicated by a tempo change. While there is no pause

²⁷ Catherine Pelligrino, "Aspects of Closure in the Music of John Adams," *Perspectives of New Music* Vol. 40 No. 1 (Winter, 2002): 149-150.

between movements, there are substantial changes in texture. The first movement lasts until m. 402, the second spans from mm. 402-640, the third lasts from mm. 640-809, and the final movement lasts from m. 809 to the conclusion of the piece. The material from movement to movement is related. It is all cell based and typically features a steady eighth-note or sixteenth-note pulse. A notable exception occurs in the third movement, which features a long expanse of soft, thick chords.

Adams' use of a four-movement form marks his most pointed deviation from the early minimalist aesthetic. By writing *Phrygian Gates* in four movements, Adams automatically references historical forms, placing his composition in the lineage of the standard pianistic canon. While crucial elements of sonata form are missing from *Phrygian Gates*, Adams' use of a four-movement form disguised in a large, non-stop work strongly hints at a late-romantic period approach to traditional form, particularly Liszt's famously ambiguous *Sonata in B Minor* (1853).

Steve Reich

Steve Reich (b. 1936) was born on the East Coast, but spent his childhood moving back and forth between New York City and California. Like Philip Glass, Reich received a prestigious education before delving into his minimalist aesthetic. Reich holds degrees from Cornell University, Juilliard, and Mills College and studied with notable teachers including Vincent Persichetti, Luciano Berio, and Darius Milhaud. He also worked at the San Francisco Tape Music Center in the mid-1960s and was present for much of the early West-Coast minimalist events, including the first performances of Riley's *In C*.

Reich's first minimalist compositions of note are *It's Gonna Rain* (1965) and *Come Out* (1966), two works for tape in which he introduced the concept of phasing. In these works, Reich plays two loops of a fragment of spoken text in unison with one another. In both pieces, one of the two voices slowly becomes out of phase with the other voice, creating a two-part counterpoint between identical voices. Shortly thereafter, Reich transferred this process to acoustic instruments, creating *Piano Phase*

(1967) and *Violin Phase* (1967). In these works, the musicians (two pianists and four violinists, respectively) apply the same phasing technique to their identical patterns. After the early phasing pieces, Reich went on to compose an oeuvre of wildly successful works including *Drumming* (1970-1971), *Music For Eighteen Musicians* (1974-1976), and *Double Sextet* (2007), for which he was awarded the 2009 Pulitzer Prize.

While Reich's compositional output is wide and varied, he has never composed a work for solo piano; however, there are several arrangements of pre-existing works. *Piano Phase* (1967), *Music for Pieces of Wood* (1973), and Reich's arrangement of Stephen Sondheim's "Finishing the Hat" from *Sunday in the Park with George* (2012) have all been performed by solo pianists. Reich's *Six Pianos* (1973) has also been arranged for soloist and tape and renamed *Piano Counterpoint*, but it has yet to be performed.

Both *Piano Phase* and *Music for Pieces of Wood*, when performed by a solo pianist, are great feats of concentration and dexterity. The solo version of *Piano Phase* consists of one performer playing two pianos simultaneously. The use of two instruments is a necessity, as the two lines feature identical pitches in the same range. The pianist is required to play the same pattern in both hands, slowly speeding up one hand while the other hand maintains a consistent tempo. *Music for Pieces of Wood* was originally composed for five pairs of tuned claves, each with a different pitch. The solo piano version was recorded by Pierre-Laurent Aimard in 2003 and released on an album entitled *African Rhythms*, which featured selections from György Ligeti's *Études pour piano* and several tracks of traditional Pygmy percussive patterns. This version of the work is an exact realization of the rhythms and pitches of the original composition, bringing out the percussive qualities of the piano. It presents significant challenges for the pianist, as he or she must seamlessly fade separate voices in and out of the texture while maintaining a steady pulse and adhering to the complex polyrhythms.

The closest Reich has come to a solo composition was in April of 2012, when he created an

arrangement of a Stephen Sondheim song for pianist Anthony de Mare. De Mare commissioned a series of new works inspired by the show tunes of Stephen Sondheim in a project called *LIAISONS: Re-Imagining Sondheim from the Piano*. For this project, Steve Reich, along with seventeen other composers, created an arrangement of a Sondheim song in his own compositional voice. Reich's contribution was an arrangement of "Finishing the Hat" from *Sunday in the Park with George* for two pianos or one piano with tape accompaniment. Unlike *Piano Phase* or *Music for Pieces of Wood*, "Finishing the Hat" was composed with the idea of a solo performance in mind. The concept of a soloist accompanied by pre-recorded accompaniment of the same instrument is not new to Reich's music. He has composed a series of "counterpoint" pieces, which operate in a similar way. *Vermont Counterpoint* (1982) for flute and tape, *New York Counterpoint* (1985) for clarinet and tape, *Electric Counterpoint* (1987) for electric guitar and tape, and *Cello Counterpoint* (2003) for cello and tape are all works for solo performers accompanied by a tape of similar contrapuntal lines performed on the same instrument. Reich uses a similar technique in "Finishing the Hat," although the musical material does not feature a multitude of polyphonic lines, as do the counterpoint compositions. Instead, this arrangement is similar to Reich's piano writing from recent chamber pieces, most notably *Double Sextet* (2007) and *2x5* (2008). Both of these works include two piano parts, featuring stacked chords in a series of hocketing rhythms, as does "Finishing the Hat."

A similar arrangement of *Six Pianos* for one performer and tape was recently completed by pianist Vincent Corver. Renamed *Piano Counterpoint*, this piece is meant to be performed in an identical fashion as the earlier counterpoint pieces; the solo pianist will play one voice, while the other five voices are pre-recorded and played back through speakers. Corver recorded the work in 2011 on EMI Records, but has never performed it live. Vicky Chow will give the world premiere performance in January of 2013.

Conclusion

It has been nearly fifty years since the first American minimalist works for solo piano were composed. The early compositions of La Monte Young, Terry Riley, Philip Glass, Steve Reich, and even John Adams are now removed from the present by several generations. These early composers of minimalist solo keyboard music, while different from one another in their own right, each share a degree of emphasis on process and reduced musical means. There are many younger composers operating today who share elements of the early minimalist's aesthetic principles. David Lang (b. 1957) has composed a substantial amount of solo piano music, all of which includes process as an important creative tool. Michael Gordon's (b. 1956) *Sonatra* (2004) also shares these principles. It has developed a reputation for being the most difficult minimalist work for piano to date, having only been performed in full by Lisa Moore and Vicky Chow. Other composers such as Nico Muhly and Timo Andres are currently developing their voices as composers of a new breed of piano music informed by minimalist aesthetics and ideas. Also sharing similar aesthetic principles as the original minimalists (particularly in their flirtation with tonality), these young composers embrace modern technology as well as the traditional pianistic repertoire, experimenting with the blend of new and old in many of their works.

Indeed, the genre of minimalist solo piano music has grown at an impressive rate since the early works of La Monte Young, Terry Riley, Philip Glass, and John Adams. Minimalism is currently peppered with sub genres and continues to change as fresh young composers re-interpret and re-invent the basic philosophies that inspired works like *Two Pages*, *The Well-Tuned Piano*, *Keyboard Studies #1 and #2*, and *Phrygian Gates*. While some of these works have gained more repute amongst pianists than others, all of these early works for solo piano were crucial in the development of minimalism, and are therefore an essential step in the history of American piano music as a whole.

CHAPTER II: DAVID LANG'S BIOGRAPHY AND STYLE

Over the course of the past thirty years, David Lang has developed into one of the most successful American composers of his generation. A student of European serialists and the American avant-garde, Lang developed his own compositional voice, combining elements from American minimalism, experimental music, and rock and pop idioms. During his illustrious career, Lang has garnered numerous awards, founded Bang On a Can, and helped to shape the sound of a generation of composers, both in New York City and around the world.

David Lang was born in Los Angeles on January 8, 1957. Most of his family, including his mother, aunts, and all of his grandparents, were immigrants of Lithuanian, Polish, Austrian, and/or German descent.²⁸ Lang's family was, as he describes them, “completely unmusical.”²⁹ His mother was a librarian, and his father was a doctor; David was expected to, like his father, pursue a career in the sciences. While there was little music in his home, David Lang's childhood was culturally rich. His mother had an art history degree, and the concept of culture became important to Lang at a young age. During an interview in April of 2012, Lang said:

My parents were interested in culture, just not musical culture. When the idea of being a musician came to me, it was really attractive because I knew something about international culture, and I knew that you should be respectful of things that someone makes for someone else artistically, but by choosing music, I would be choosing something that nobody in my family knew about, which I found very relaxing.³⁰

Instead of discovering classical music through his family, he found it in school.

In an interview with violinist Hilary Hahn, Lang remembered the first experience that motivated him to compose.

One day when I was nine and in elementary school, it was raining, so we couldn't go play

28 David Lang, “A Pitch For New Music,” *The New York Times: Opinionator*, May 11, 2011, accessed August 24, 2012, <http://opinionator.blogs.nytimes.com/2011/05/11/a-pitch-for-new-music/>.

29 David Lang, “Hilary Hahn and David Lang,” *Sequenza 21*, January 3, 2010, accessed August 24, 2012, <http://www.youtube.com/watch?v=XsgNL8UYkTA>.

30 David Lang, “Interview by Karl Larson,” recorded on iMovie, April 3, 2012.

outside. They took us into the auditorium, and they showed us a movie of a Leonard Bernstein Young Person's Concert. In that movie, Bernstein conducted Shostakovich's first symphony, and he turned to the children in the audience and said, 'now children, Shostakovich wrote this piece when he was nineteen years old and became world famous overnight,' and I remember thinking: 'I have ten years.'³¹

After Lang's exposure to Bernstein and Shostakovich, he immediately began composing, despite his complete lack of musical training. His initial attempts at composition involved visual approximations of contour, which he would perform along with recordings of pre-existing works. He began borrowing instruments from friends and joined his elementary school band as a trombonist. While he never developed a strong fluency on any instrument, Lang quickly developed into a musically literate adolescent composer; his graphic realizations gave way to fully composed pieces.³²

While Lang's music shows clear influences from Steve Reich and Philip Glass, as well as a host of rock and pop artists, his education was strongly rooted in European modernism. He studied with professors of academic and progressive temperaments from American and European backgrounds. Martin Bresnick, one of Lang's major influences, was quite experimental; however, teachers like Jacob Druckman (whom Lang refers to as his “principle teacher”) or Hans Werner Henze were steeped in the European modernist tradition.³³ Lang holds an undergraduate degree from Stanford University, a master's degree from the University of Iowa, and a doctorate from Yale University, which he completed in 1989. His most notable teachers include Henri Lazarof, Lou Harrison, Donald Jenni, Richard Hervig, Jacob Druckman, Hans Werner Henze, and Martin Bresnick. Aside from his teachers, Lang cites a host of other composers and artists who had a direct impact on his compositional trajectory. In an interview with Collin Rae, Lang lists a wide variety of musicians who influenced him, including Bach, Berlioz, Reich, Glass, Andriessen, Stockhausen, Shostakovich, Xenakis, Glenn Branca, the Velvet Underground, and Bob Dylan.³⁴

31 Lang, “Hilary Hahn Interview.”

32 Ibid.

33 Marc Alburger, “Bang on an Ear: An Interview with David Lang,” *21st Century Music* Volume 7, Number 9 (September 2000): 6.

34 Collin Rae, “Sonically Sound and Pounding... A Discussion with David Lang,” *Naxos Blog*, March 31, 2009,

Lang moved to New York City in 1982 while still a doctoral student at Yale. In 1987, Lang, along with fellow composers and Yale colleagues Michael Gordon and Julia Wolfe, formed Bang On a Can. Initially a small organization based around an annual “marathon” concert, Bang On a Can was formed in order to improve on what the founders considered to be flaws in the New York new music scene. According to Lang:

Basically, Bang On A Can started because we were three young composers. We got out of school. We came to New York. We looked around, and there were 5 million things that just off the top of our heads we thought we could change. Most of them are really obvious things.... We would get together every day and we would talk all day about how, you know, the world wasn't set up to do a lot of the things that we wanted to do. Basically, a lot of what we were doing was. . . we got out of school, we'd sit around, we'd meet every day for breakfast or coffee or whatever, we'd show each other our music and we'd complain about how the world sucked, basically. And then you go, well, it's easy to identify lots of things that need to get changed in order to make sure that, you know, interesting music always gets played, and the right audience knows about it, that music actually can mean something large in society, that young composers get treated well....³⁵

One of the main goals in Bang On a Can was to deconstruct the barriers between “uptown music” and “downtown music.” These terms refer to the popular art music aesthetic in the uptown and downtown areas of Manhattan. “Uptown music” tends to be academic with European influence, while “downtown music” leans towards a post-modernist philosophy embracing a variety of genres including minimalism, performance art, rock, jazz, and pop music. As Kyle Gann describes it:

The Uptowners, such as Milton Babbitt and Jacob Druckman, wrote complicated music in European genres, heavily dominated by Arnold Schoenberg's twelve-tone thinking and its derivatives. Downtown music was simpler and less pretentious, drawing on the nature- and accident-accepting philosophy of John Cage. Conceptualism and minimalism were the two primary Downtown movements [in the early stages]; artrock and free improvisation would soon join them.³⁶

The distinction between “uptown” and “downtown” music had been in existence since the early 1960s.

According to Gann:

Downtown music had begun in 1960 when Yoko Ono, a pianist soon associated with the Fluxus movement, opened her loft for a concert series organized by La Monte Young and

<http://blog.naxos.com/2009/03/31/sonically-sound-and-pounding-a-discussion-with-david-lang/>.

³⁵ Gann, “Minimal Music, Maximal Impact,” 1-2.

³⁶ Kyle Gann, *Music Downtown* (Berkeley: University of California Press, 2006), xiii.

Richard Maxfield.... In the years before 1960, all New York music performances took place uptown, around the area where Lincoln Center would soon be situated.... The Ono/Young/Maxfield concert series was the first to draw adventurous music lovers downtown, and it offered wild new avenues of endeavor that the uptown classical concert-givers wouldn't have considered music, or at least not "serious music."³⁷

By the time Bang On a Can was founded in 1987, the segregation between "uptown music" and "downtown music" was not as severe as the initial separation in the 1960s. By the mid-1970s, Philip Glass and Steve Reich had broken onto the international stage and were enjoying performances in some of the world's most prestigious concert venues. Gann cites Steve Reich's 1974 three-disc release on Deutsche Grammophon and Glass's 1976 opera, *Einstein on the Beach* (premiered at the Metropolitan Opera), as essential steps in the immersion of the "uptown" and "downtown" mindsets.³⁸

The first Bang On a Can Marathon concert was held on Mother's Day in 1987 in a Soho art gallery. It was a grass-roots operation in which the three composers set out to attract members of the visual art, theater, and dance communities as well as the new music crowd. There were twenty-three pieces on the program, and the concert successfully attracted a large audience. According to Michael Gordon:

It was packed. There were over 400 people there, which was unheard of in 1987 for this type of concert, and none out of them were composers or new music specialists. It was really an audience of people who were attracted by the 12-hour concert and were going to go check this out. So they did not know if they liked Milton Babbitt, they were not supposed to like Steve Reich. And they did not know that if they liked Steve Reich, they were not supposed to like Milton Babbitt.³⁹

While the first marathon concert did little to change the minds of the new music community concerning "uptown" versus "downtown" music (Reich and Babbitt reportedly refused to listen to one another's pieces), Bang On a Can did succeed in creating a successful event, bringing a new audience to the New York new music scene, one that was unaware of, or at least less invested in, the musical segregation between the "uptown" and "downtown" philosophies.⁴⁰

³⁷ Ibid.

³⁸ Ibid., xiv.

³⁹ Gann, "Minimal Music, Maximal Impact," 5.

⁴⁰ Ibid.

Since Lang, Gordon, and Wolfe founded Bang On a Can in 1987, the organization has continued to grow in scope and popularity. Bang On a Can has now grown into an internationally renowned, multi-faceted entity complete with a publishing company (Red Poppy Publishing), a record label (Cantaloupe Records), a touring ensemble (The Bang On a Can Allstars), a summer festival (The Bang On a Can Summer Institute), and a new program called OneBeat, which is “a new international cultural exchange by the U.S. Department of State that celebrates the transformative power of the arts through the creation of original, inventive music, and people-to-people diplomacy,” according to the OneBeat website.⁴¹

Since the formation of Bang On a Can, David Lang's compositional career has continued to grow. He has been the recipient of the Rome Prize and the BMW Music Theater Prize, as well as grants from the Guggenheim Foundation, the Foundation for Contemporary Performance Arts, the National Endowment for the Arts, the New York Foundation for the Arts, and the American Academy of Arts and Letters.⁴² He was also the recipient of the 2008 Pulitzer Prize, which was awarded for his composition for four voices and percussion, *The Little Match Girl Passion*. He has garnered prestigious teaching positions at the Oberlin Conservatory of Music and Yale University and has also released records on multiple labels including Sony Classical, Harmonia Mundi, Teldec, BMG, Point, Chandos, Argo/Decca, and Cantaloupe Records.⁴³

Stylistically, David Lang's compositions are typically catalogued in the realm of minimalism; however, Lang is strongly opposed to any sort of genre classification in music, and much of his work is composed with the intention of blurring lines between classifications. Many of his colleagues and mentors share this philosophy. The term “minimalism” itself has been, according to Kyle Gann, “impatiently disavowed” by Reich and Glass.⁴⁴ Lang has a similar distaste for the term “minimalism,”

41 “About OneBeat,” accessed August 24, 2012, <http://www.1beat.org/about/>.

42 “David Lang Bio,” accessed August 24, 2012, <http://davidlangmusic.com/bio.php>.

43 Ibid

44 Kyle Gann, *American Music of the Twentieth Century* (New York: Schirmer Books, 1997), 186.

as well as “postminimalism” and “totalism.” In his opinion, these terms are only useful on a commercial level. He said:

I think it made sense at a time when we had record stores, and you had to figure out how not to waste your time in the wrong part of the store. We don't really have record stores anymore, so I don't know what the value is in designing a world that says, “let's carve it up as small as possible.” I don't think most people wake up in the morning and say, “how can I fit squarely in a box today.”⁴⁵

While these genre classifications are still commercially relevant on platforms such as Amazon.com and iTunes, Lang still feels that they detract from the art and the individual efforts of each composer, stating, “I don't like the idea that people categorize music in order to make it easier not to listen carefully.”⁴⁶

Because of his efforts to dodge genre classification, there is some debate as to what David Lang's music should be called. *The New Yorker* has referred to him as a “postminimalist *enfant terrible*,” and he describes himself as being “between experimental classical and experimental pop music.”⁴⁷ ⁴⁸ Others, Kyle Gann in particular, choose to define Lang as a totalist. In his book, *American Music in the Twentieth Century*, Gann defines totalism as:

[a sub-genre in which the] music appeals to audiences on a sensuous and visceral level, and yet which still contains enough complexity and intricate musical devices to attract the more sophisticated aficionado. [The term] also implies using all of the musical resources available, so that Indian raga-like melodies may fit together with jazz harmonies within classical structuring devices.... Totalist music can generally be characterized as having a steady, articulated beat, often flavored by rock or world music.”⁴⁹

However, this definition only partially describes Lang's style. While this terminology tends to depict a portion of Lang's output reasonably well, particularly ensemble works such as *Are You Experienced?* (1987), *Cheating, Lying, Stealing* (1993), and *Grind to a Halt* (1996), there is a substantial amount of repertoire in his catalogue that significantly differs from Gann's summation. *Orpheus Over and Under*

45 Lang, “Larson Interview.”

46 Ibid.

47 “David Lang Bio.”

48 Rae, “Sonically Sound and Pounding.”

49 Gann, *American Music of the Twentieth Century*, 355.

(1989), for example, is a work for two pianos consisting only of repeated notes and tremolos in unison rhythms, which, by definition, lacks any polyrhythmic complexity. Even *The Little Match Girl Passion* (2007), for which Lang was awarded the Pulitzer Prize, is far from the polyrhythmic density cited by Gann as a requirement for totalist music. While polyrhythms are present between voices in *The Little Match Girl Passion*, the rhythms used are far from the complexity found in works by other totalists.

Gann himself hesitates to fully christen Lang as a totalist. In *American Music of the Twentieth Century*, Gann includes Lang in the totalist chapter almost as an afterthought. Gann writes: “Lang's music is less systematic and rhythmically complex than that of his totalist colleagues; he opts instead for a sense of theatrical gesture. Perhaps more than anyone else he straddles the uptown and downtown worlds of New York music.”⁵⁰ In other words, Lang's music is less aggressive and less based upon complex polyrhythms than the music of Michael Gordon, Lois Vierk, or John Luther Adams. Lang's music, as opposed to much of the totalist repertoire, emphasizes linearity. While his music is not typically tonal and therefore does not feature any identifiable harmonic progression, his works consistently include a sense of movement (or the restriction of movement) from one point to another.

The sense of linear motion in David Lang's music, while it differs from the aesthetic of other totalist composers, is often a product of process. Therefore, I must disagree with Gann when he states that Lang is “less systematic... than his totalist colleagues.”⁵¹ This statement would be more accurate were Gann to call Lang's music less *transparently* systematic. While Lang's music tends to be process driven, the processes at work are not always audible. While other totalist composers systematically derive complex polyrhythms, a trait apparent to the listener, Lang's processes manipulate pitch and rhythm in a more subtle and hidden manner. As Lang expressed in our 2012 interview, the process in his music is there to structure the work and limit his possibilities.

[The process in my music] deals with the things you don't want people to listen to. It's the stuff in the background. It's the architecture, the nuts and bolts. Many of my teachers

50 Ibid., 378.

51 Ibid.

were serialists, and I really got too much of the 'count your notes, that's where the action is' mentality. It always seemed like that was the wrong way of looking at it.⁵²

In other words, Lang uses process a constructive tool for his compositions, but the transparency of process is not something he desires; the process should not be the topic of the piece. In the same interview, he said, “What's important is not to have a pattern which makes the piece better or worse, the important thing is to put myself in the position where I can accomplish something very direct and very simple.”⁵³ The process is simply a method of realizing his specific aesthetic goals.

Over the course of his career, Lang has applied these methods to a vast array of works. His compositional output spans many genres and instrumentations. To date, he has composed twelve published works for orchestra, fifteen published works for large ensemble, twenty-six published works for chamber ensemble, twenty-nine published solos and duos, six published works for wind ensemble, seven published operas and musical theater works, two published works for dance productions, three film scores, fourteen published works for chorus, and two published arrangements.⁵⁴ He has collaborated with a host of notable ensembles and soloists, including the New York Philharmonic, the San Francisco Symphony, the American Composers Orchestra, the Boston Symphony Orchestra, the Cleveland Symphony Orchestra, So Percussion, the Bang On a Can All Stars, the Kronos Quartet, the London Sinfonietta, the Santa Fe Opera, Icebreaker, Steve Schick, Evan Ziporyn, Yvar Mikhashoff, and Evelyn Glennie.⁵⁵

Lang's compositional methods and career trajectory have significantly changed the face of American new music culture. Along with his colleagues at Bang On a Can, Lang has helped to deconstruct the barriers between “uptown” and “downtown” music, creating a more immersive environment and fostering a dialogue between musicians of various backgrounds in New York City and throughout the United States.

⁵² Lang, “Larson Interview.”

⁵³ Ibid.

⁵⁴ “David Lang: Music,” accessed August 24, 2012, <http://davidlangmusic.com/music.php>.

⁵⁵ Ibid.

CHAPTER III: THE SOLO PIANO COMPOSITIONS

David Lang's compositional output of works for solo piano outnumbers all prominent American minimalists, with the exception of Philip Glass. Between 1982 and 2012, Lang has composed sixteen works for solo piano of varying degrees of difficulty and length. Lang's first composition for solo piano occurred in 1982 with *While Nailing at Random*. After a brief lull, he returned to the genre with a set of eight short works entitled *Memory Pieces*. These works were composed between 1992 and 1997 and represent Lang's most performed works for solo piano. After the *Memory Pieces*, Lang continued to write short, single movement works for solo piano. During the following six years, he composed *Broken Door* (1998), *Boy* (2001), *Cut* (2002), *The Point* (2003), and *This Was Written By Hand* (2003). During this period, Lang also composed his most ambitious work for solo piano, *Psalms Without Words* (2001). This work is over an hour long, but is unfortunately unavailable to the public. From 2003 to 2012, Lang moved away from the solo piano genre; however, he has recently returned to solo piano repertoire, completing *Hard Hit* in September of 2012, a work which has yet to be premiered.

It is possible to observe a list of commonalities between the majority of these pieces. With the exception of *While Nailing at Random* and *Psalms Without Words*, Lang's solo piano works are compositionally quite similar. While there are several outliers, the majority of Lang's output for solo piano consists of short, process-driven pieces during which a single pattern or series of patterns manipulate the majority of the pitch and rhythmic material. As a result, these works tend to lack any audible formal variance, relying instead on the drama of a blossoming process within an otherwise unchanging texture. Notable exceptions include *Broken Door* and *This Was Written By Hand*, which both exhibit an audible form by adding and subtracting voices while maintaining the use of various processes throughout both respective works.

Lang's use of dynamic and phrase markings are also uniform throughout these works. In all of

his solo piano compositions (again with the exception of *While Nailing at Random* and *Psalms Without Words*), Lang's expressive markings are extraordinarily sparse. Throughout the entirety of the *Memory Pieces*, he uses only nine dynamic markings. He marks a specific dynamic at the beginning of each work, which continues throughout the piece. In *Beach*, the final piece of the *Memory Pieces*, he includes two markings at the onset of the work: one for the outer voices and one for the inner voice. The *Memory Pieces* are completely void of phrase markings and only include one articulation marking (again for the outer voices in *Beach*). Expressive markings in Lang's later works for solo piano are equally scarce. While *Broken Door* includes the use of staccato markings, diminuendos, and accents, and *This Was Written By Hand* employs phrase markings in the left hand and slight dynamic changes, all six post-*Memory Pieces* remain significantly under-marked.

David Lang's spartan use of expressive markings is both a reflection of his political leanings as well as his desire to avoid overly expressive performances of his works. In a 2012 interview, he said, “I actually don't think that [my music is] under-marked. Knowing that everyone's tendency is to try to warm things up, I want to remind them not to warm it up too much.”⁵⁶ A tasteful amount of expression is desirable for a performance of Lang's music; however, an overly romantic interpretation detracts from the simplicity of the texture and the interplay between voices and parts. Lang also avoids overly specific expressive markings because he wishes to allow the performer the freedom to make their own expressive decisions. He considers an overuse of expressive markings to be a fascist act. In the same interview, he said:

I also don't want to specifically tell people where to warm things up. Being a composer is a lot like being a fascist. You're really aware at all times that you can make people do things. At those moments where I'm telling you what to do, on the one hand you're doing exactly what I tell you to do, but at the same time I lose respect for you. When I see these really complex scores by Bryan Ferneyhough or scores with serialized dynamics where they tell you exactly what to do at every moment... I really think that they're fascistic and I really think that they're completely undemocratic. They don't believe in the equality between the composer and the performer, they don't even tip their hats to the performer.

⁵⁶ David Lang, “Interview by Karl Larson,” recorded on iMovie, April 3, 2012.

They say the job of the composer is to boss you around, to give exact orders in order to fully fulfill themselves. I don't want to live in that world. In a way, I'm politically against telling people how to shape pieces too much. Your version of shaping my music will mean something to you, because you put some real thought into it.⁵⁷

Because of his belief in the democratic relationship between composer and performer and his desire to foster unique and thoughtful performances of his music, Lang purposefully leaves much of the expressive interpretation of his works up to the performer.

The rhythmic aspects of David Lang's compositions for solo piano are more difficult to generalize. Rhythmically, Lang's solo piano works are always dependent on pulse. However, the pulse is often disguised or manipulated. Works such as *Wed*, *Cello*, and *Beach* (nos. 3, 6, and 8 from the *Memory Pieces*) employ processes that explicitly manipulate the sense of pulse by moving back and forth between eighth notes, triplets, and sixteenth notes. Other works, such as *Spartan Arcs* and *The Point* feature frequently changing meters, which also disguises the pulse. Other techniques used to hide the pulse include the use of multiple perceived tempi at once, as occurs in *Beach* and *Cut*, as well as the use of polyrhythms in *Grind* and perceptively challenging rhythmic counterpoint in *This Was Written By Hand*.

Harmonically, Lang's solo piano music is consistently restricted; however, his harmonic language is substantially more adventurous than that of Reich or Glass. While the early minimalists typically used diatonic pitch-class sets, Lang is more daring with his sets, often utilizing sets of ten or more pitch classes. While Lang is willing to use pitch-class sets of varying degrees of chromaticism, all of his solo piano pieces include process-driven restrictions related to pitch collections. In works involving more than two voices, each voice tends to be limited to a subset of pitches. While the entire work may utilize twelve pitch classes, each voice may play as few as two or three pitches during the duration of the work. This method of harmonic restriction occurs in *Spartan Arcs*, *Wed*, *Grind*, *Diet Coke*, *Cello*, *Beach*, *Broken Door*, *Cut*, and *This Was Written By Hand*. Compositions featuring a single

⁵⁷ Ibid.

line or the counterpoint between two lines, such as *Cage*, *Wiggle*, and *The Point* are limited to specific pitch-class sets, which are emphasized in a linear fashion.

The *Memory Pieces*, *Broken Door*, *Cut*, *Boy*, *The Point*, *Hard Hit* and even *This Was Written By Hand* can all be considered laboratory works for David Lang. Their brief nature, monochromatic textures, and strict adherence to process suggest that each work is an experiment. He considers this a necessary and useful technique, comparing it to a visual artist's sketchbook. "Artists use drawings on paper as a way to plan giant idioms. There are things that you're going to have to spend months and months to do, and you're going to want to check things out before you do them. The piano can be like a laboratory to test ideas."⁵⁸ Instead of setting out to compose a truly pianistic work, Lang views himself within a tradition of composers who use the instrument as a workshop in which to develop their ideas.

He says:

There is a tradition of speculative keyboard music that includes works like J.S. Bach's *Well-Tempered Clavier* or Boulez's *Structures*. [In these works] the sound of it, the piano or harpsichord part of it, is sort of secondary. The sound is a bi-product of the thoughtfulness of what you're making.⁵⁹

For Lang, these small works for solo piano allow him to test his creative processes in order to figure out what ideas work well together. As Lang describes it:

[My piano pieces are] little machines, and I set them up to go somewhere straight forward. In the [larger] pieces that I've built from them, I'm not obligated to be process based. These [piano] pieces are very process based because they're really just sections. When I have to make a larger piece out of it, I may not follow that pattern or rule.⁶⁰

Lang's experimentation through his solo piano works has proven fruitful, as several of them have developed in to larger works for multiple instruments. In an interview with Mark Alburger, he said that he'd like to apply all of the *Memory Pieces* to larger works:

Cage doesn't have a larger manifestation. That's not to say it wouldn't be interesting. *Spartan Arcs* I've stolen from myself many times, in terms of rhythmic games and note-changing games. *Wed* became a string quartet for the Kronos Quartet. *Diet Coke* I haven't

58 Ibid.

59 Ibid.

60 Ibid.

stolen yet. *Cello* became a string trio. *Grind* became an orchestral piece. *Wiggle* I haven't figured out what to do with yet, mostly because it is the most impossible piece; it's very, very difficult. *Beach* has a beautiful melody, which I've stolen many times.⁶¹

While the exact content of each solo piano composition is not always used in an entire piece, it is clear from this conversation that many of the processes used in the piano works are recycled in larger compositions.

Memory Pieces

Composed between 1992 and 1997, *Memory Pieces* is a set of eight short compositions for solo piano. While Lang has solo piano compositions that pre-date and post-date these works, the *Memory Pieces*, when considered as a set, are his most ambitious published undertaking within the genre, as well as the most indicative of his overall style and compositional process. Each of the *Memory Pieces* is dedicated to one of Lang's friends who passed away. The dedicatees include noted figures in contemporary music, including John Cage, Jacob Druckman, and Yvar Mikhashoff, as well as other individuals with whom Lang was closely associated. These memorials are not intended to be grand remembrances of the legacies of the deceased. Instead, these works are snapshots, attempts by Lang to preserve a small yet meaningful memory of his friends. In an interview with Mark Alburger, Lang said, "The *Memory Pieces* are things that I have done so that I can remember a funny conversation that I had with each of these people, or an incident, or something that's powerful about them which I hope I never forget."⁶² Indeed, the *Memory Pieces* do not possess the grandeur of a requiem. Instead, each piece is an introspective crystallization of the arbitrary, the day-to-day moments that stand out in the memories of friends.

Each of the individual works that comprise the *Memory Pieces* is limited in thematic material. Instead of featuring the introduction and development of multiple themes, Lang consistently uses one texture per piece, which he manipulates through a process or series of processes until the work comes

61 Alburger, "Bang on an Ear: An Interview with David Lang," *21st Century Music* Volume 7, Number 9 (September 2000): 6.

62 Ibid.

to an end. In the program notes for the work, Lang writes:

There are a few ways to approach these pieces. In one respect they are inventions, each an intellectual and philosophical exploration of one distinct, mechanical way to make music. They are also little etudes, as each one highlights a different technical concern, such as overlapping arpeggios (*spartan arcs*), polyrhythmic counterpoint (*wed*) or strange cross-hands (*cello*). The way I choose to look at them is as laboratories for larger works. If I can incorporate the music or the ideas or the techniques of these little pieces into other works then I am in some way keeping something of my friendship alive.⁶³

Lang equates these works to piano etudes, an interesting take on the limited aesthetic variety within each piece. Indeed, piano etudes as a historical genre have tended to be limited to a focus on one technique and lack of stylistic and thematic change throughout the work (notable exceptions include the Liszt *Transcendental Etudes* and a portion of György Ligeti's *Études pour piano*). The lack of stylistic and thematic development in the individual *Memory Pieces* is a direct result of Lang's process-driven compositional method; however, his willingness to equate the result of his process with the historical genre of the piano etude reflects a mentality in which Lang places himself within the historical lineage of pianistic composition.

Cage

Cage is the first composition in the *Memory Pieces*, and was composed in remembrance of John Cage directly after the composer's death in August of 1992. In his program notes for *Memory Pieces*, Lang remembers he was originally “writing Yvar Mikhashoff a piece when John Cage died. I put that piece aside and wrote *Cage*, which Yvar then played several times. Yvar was already ill then, and it was his idea that I write a series of memorial pieces [in honor of my friends who have passed].”⁶⁴ The rest of the *Memory Pieces*, while they were composed over the course of the next couple of years, were directly related to the request of Yvar Mikhashoff and his subsequent death in 1993. When asked about the specific relation between the material in *Cage* and Lang's relationship with John Cage, he said:

I took a little form that I abstracted from a misunderstanding of a piece of his and I applied it to a scale. He was an unbelievably great and humane person. I remember

⁶³ David Lang, *Memory Pieces*, (New York: Red Poppy Music, 2007): 1.

⁶⁴ *Ibid.*

consist of different numbers of pitches and therefore restart at different points within the piece. For example, the original pattern established in the right hand consists of a (3, 2, 0, 2, 3, 2, 0, 2, 3... etc.) pattern, while the original pattern established in the left hand consists of a (0, T, 8, 7, 8, T, 0, T, 8, 7, 8, T, 0... etc.) pattern. There is a clear relationship between these lines; both of these patterns consist of an oscillation between two outer pitches; the right hand moves back and forth between pitch-class 3 and pitch-class 0, while the left hand moves between pitch-class 0 and pitch-class 7. The important difference to note is the 3:4 relationship between the two lines; while the initial right-hand pattern consists of 3 pitches, the initial left-hand passage consists of 4 pitches. Because the patterns change at an identical rate, this 3:4 relationship causes the patterns to restart at different points throughout the piece.

As additional pitches are added to both the right and left-hand patterns, it becomes apparent that Lang is using a linear additive process for both lines. For the right-hand line, the initial pattern is stated twice before changing in m. 20 to a (5, 3, 2, 0) pattern, which is also repeated twice. Strangely, Lang chooses to design the first major pattern shift in this voice in a differing fashion from the rest of the piece; this pattern is the only example in the piece of a line that does not have a symmetric contour. However, beginning in m. 36, the right-hand line once again conforms to the linear additive process and remains concurrent with the pattern until the completion of the piece.

In m. 36, Lang returns to the pattern of one line oscillating between two points. The right-hand pattern now consists of 4 pitches, and upon every repetition, another pitch is added at the top of the pitch-class set. The first statement of the pattern, beginning in m. 36 is (5, 3, 2, 0, 2, 3, 5), but as the extra pitches are added, the pattern becomes (6, 5, 3, 2, 0, 2, 3, 5, 6) beginning in m. 50, then (8, 6, 5, 3, 2, 0, 2, 3, 5, 6, 8) beginning in m. 68, and finally (9, 8, 6, 5, 3, 2, 0, 2, 3, 5, 6, 8, 9) beginning in m. 90. Each of these variations of the pattern is repeated only once, and the final variation represents the longest variation in the right hand, as well as a complete statement of all pitches employed in the right

hand throughout the entire piece. Beginning in m. 115, the pattern begins to lose pitches. Instead of simply reversing the previous process and subtracting the recently added notes at the top of the pitch-class set, Lang reduces the size of the pattern by subtracting pitches from the bottom of the set until he reaches another three-note pattern. This three-note pattern is intervallically identical to his original right-hand pattern, (3, 2, 0). Again, each variation is repeated only once. The process begins with (9, 8, 6, 5, 3, 2, 3, 5, 6, 8, 9) in m. 115, then (9, 8, 6, 5, 3, 5, 6, 8, 9) in m. 134, then (9, 8, 6, 5, 6, 8, 9) in m. 150, and finally (9, 8, 6, 8, 9) in m. 162. The (9, 8, 6, 8, 9) pattern continues until the end of the piece.

While the left-hand pattern follows similar principles and is put through similar processes as the right-hand pattern, the material differs in several ways. As previously stated, the left-hand line begins with a (0, T, 8, 7, 8, T, 0) pattern. However, unlike the right hand, the left hand is not interrupted by an asymmetrical pattern before the linear additive process begins. In m. 25, the initial pattern begins to grow at both ends of the set. The pattern beginning in m. 25, (0, T, 8, 7, 5, 7, 8, T, 0), is followed immediately by the left hand's longest pattern, (1, 0, T, 8, 7, 5, 7, 8, T, 0, 1), which begins in m. 43. This pattern occurs significantly earlier than the longest right-hand pattern, which occurs in m. 90. Also unlike the right-hand pattern, this longest variation of the original pattern does not include the entire range of left-hand pitches used over the course of the piece. This particular variation of the pattern remains the same until m. 123, where Lang begins to methodically shorten the process, resulting in patterns consisting of (1, 0, T, 8, 7, 8, T, 0, 1) in m. 123, (1, 0, T, 8, T, 0, 1), in m. 139, and (1, 0, T, 0, 1) in mm. 151 and 159. For the final variant of the pattern, Lang simultaneously drops pitch-class T and adds pitch-class 3, creating a (3, 1, 0, 1, 3) pattern, which begins in m. 167 and completes the mutations of the left-hand pattern.

In many ways, *Cage* sets the tone for the *Memory Pieces*. While it was composed several years earlier than most of the pieces in the set, the process-based restrictions are consistent with the rest of Lang's *Memory Pieces*. His use of the linear additive process in *Cage* strongly indicates his ties with

the early minimalists; however, the fact that his process is specifically designed to result in dissonances causes the aesthetic to be significantly more progressive within the minimalist field.

Spartan Arcs

Spartan Arcs (1992) is the second work in David Lang's *Memory Pieces*, and is dedicated to the memory of Yvar Mikhashoff, one of the most noted interpreters of contemporary piano repertoire of his time. This is the only composition of the *Memory Pieces* that was composed preceding the death of the dedicatee. *Spartan Arcs* was intended to be a work for Mikhashoff to perform, but he succumbed to cancer in 1993 before he was able to learn the piece. Lang subsequently dedicated the piece to his memory.

At its most basic level, *Spartan Arcs* is a collection of two descending trichords coming in and out of phase with one another. When analyzing the pitch content of the piece, it is beneficial to view these pairs of trichords as larger groups of six pitches. Rhythmically, the piece makes the most sense if considered as a series of trichords. The phasing that occurs is caused by constantly changing meter.

While the trichords remain rhythmically consistent, the changes in meter cause them to overlap.

Spartan Arcs begins in 6/16 meter with the first right-hand trichord filling the first three sixteenth-note beats and the first left-hand trichord filling the last three sixteenth-note beats of the measure. In m. 3, the meter is changed to 5/16 for only one bar, which causes the subsequent downbeat of m. 4 to include both the beginning of the right-hand trichord as well as the last pitch of the previous left-hand trichord.

These measures are featured in figure 15.

Figure 15: *Spartan Arcs* (mm. 1-6)⁶⁷



It is important to differentiate this type of phasing from the analog phasing featured in early

⁶⁷ Lang, *Memory Pieces*, 8.

works by Steve Reich, such as *Piano Phase* or *Come Out*. The phasing in these works is caused by a gradual and miniscule shift in tempo in one part, causing the two voices to shift in and out of alignment with one another. The phasing found in “Spartan Arcs” is more akin to the “block additive process,” which Reich describes as replacing rests with beats.⁶⁸ While Lang's process is not identical to the process used by Reich in monumental works such as *Drumming* or *Music for 18 Musicians*, his manipulation of meter and the subsequent rhythmic counterpoint fits comfortably within the definition of “block additive process.”

Lang's manipulation of pitch in “Spartan Arcs” is an excellent example of his meticulous and thorough use of process in his music. The pitch material in the piece is based on a series of six descending pitches. There is a clear emphasis on major and minor triads, although it would be a mistake to attempt a tonal analysis. While a Schenkerian analysis would emphasize the movement from the opening C minor triad to the final G minor triad, a movement which strongly hints at the Aeolian mode, it is most useful to analyze *Spartan Arcs* as a process piece, exploring the meticulous treatment of pitches that eventually leads to the final G minor chord.

Spartan Arcs can be split into six sections. Each section is marked by the arrival of a major or minor triad, each of which is a direct result of Lang's process. The first section begins in m. 1 and is completed in m. 64. The second section lasts from mm. 64-127, the third section from mm. 127-190, the fourth from mm. 190-267, the fifth from mm. 267-351, and the sixth from mm. 351-379. These sections consist solely of the movement from one triad to another. Each triad is either a whole or half step higher or lower than the previous triad.

The first section consists of the motion from a C minor triad to a B-flat major triad. The first triad is spelled (from top to bottom): C, G, E-flat, C, G, C. However, from this point I will refrain from spelling chords with pitch names in favor of a slightly altered form of spelling pitch-class sets. Each set

68 Warburton, “A Working Terminology,” 148.

will be spelled from the highest sounding pitch to the lowest sounding pitch in order to better fit with the arrangement of notes on the page, which descend from highest to lowest. This method would describe the same arrangement of pitches as (073070). This inversion of the chord remains constant for each of the pivotal triads. Therefore the B-flat major chord that concludes the first section would be spelled (T52T5T). Lang's process of moving between these two chords is elegantly simple. After stating the initial chord in m. 1, he sets the process in motion. In mm. 2-7, one (073070) pitch per measure dips down to its (T52T5T) equivalent, returning to the original pitch in the following bar. This process is repeated until each pitch has moved once. The pitches move in an orderly fashion; the highest pitch moves in m. 2, the second highest in m. 3, the third highest in m. 4, etc. As the process continues, Lang begins to change two pitches per bar. Once all combinations of two-note changes have been realized, he moves on to three-note changes per bar, followed by four-note changes per bar, followed by five-note changes per bar, finally settling on the (T52T5T) B-flat major chord in m. 64. Table 1 provides a visual representation of the process employed during the first section. Each column represents one of the six pitches of the initial set (the highest pitches on the left and the lowest pitches on the right). Each row represents one repetition of the six pitches. Every time a number appears in a column, it represents a deviation from the initial (073070) C minor chord. In lines one through six, one can clearly identify the process at work, as the changing pitches create a diagonal line moving down to the left. Lines seven through twenty-one feature the chords with two moving voices per repetition. Here too, Lang is methodical, first cycling through every two-note option involving the lowest sounding pitch, then every option involving the second lowest sounding pitch, then third lowest sounding pitch, etc. The process continues in the same way throughout the first section until all possible combinations have been realized, at which point the process is complete, landing on the (T52T5T) B-flat major chord.

Table 1: Spartan Arcs, pitch-change pattern (mm. 1-64)

(0)	(7)	(3)	(0)	(7)	(0)
T	5	2	T	5	
					<u>T</u>
<u>T</u>	5	2	T		T
					T
-	-	-	<u>T</u>	<u>5</u>	<u>T</u>
				5	
<u>T</u>	5	2		5	
<u>T</u>	-	-	<u>T</u>	<u>5</u>	-
	5		T		
-	<u>5</u>	<u>2</u>	<u>T</u>	-	-
<u>T</u>	-	<u>2</u>	-	-	-
<u>T</u>	<u>5</u>	<u>2</u>	-	-	-
T	5	2	T		
T	5			5	
<u>T</u>	<u>5</u>	<u>2</u>	-	-	<u>T</u>
T		2		5	
T		2	<u>T</u>	<u>5</u>	-
T		2	T		T
<u>T</u>	-	<u>2</u>	<u>T</u>	5	<u>T</u>
T			T		T
<u>T</u>	5	-	-	5	T
	5		T		T
	5	2		5	
	5	2	T		
	5	2	T	5	
	5	2	T	5	
		2	T	5	
		2	T		T
		2	T	5	T
T			T	5	T
T			T	5	T
T	5			5	T
T	5	2	T		T

T	5	2			T
T	5	2		5	
T	5	2	T		
T	5		T	5	
T		2	T	5	
T		2	T		T
	5	2	T		T
	5	2	T	5	
	5	2		5	T
	5		T	5	T
		2	T	5	T
	5	2	T	5	T
T		2	T	5	T
T	5		T	5	T
T	5	2		5	T
T	5	2	T		T
T	5	2	T	5	T
T	5	2	T	5	

The second section of *Spartan Arcs*, which spans from the (T52T5T) B-flat major chord in m. 64 to the (073070) C minor chord in m. 127, employs a nearly identical process to the first section. The only difference is that the pitches now move up rather than down; the method of picking which pitch should move and in what order is exactly the same. The third section, which spans from the (073070) C minor chord in m. 127 to the (T52T5T) B-flat major chord in m. 190, is an exact repetition of the first section; therefore, it also uses an identical process.

The fourth section of *Spartan Arcs* lasts from mm. 190-267, spanning from a (T52T5T) B-flat major chord to a (830838) A-flat major chord. As shown in table 2, the process in this section is not as rigid or clearcut as the process used in the first three sections of *Spartan Arcs*. The most immediately striking difference between this process and the process of the first three sections is the lack of movement in the second and fifth voices of the hexachord. Both of these voices play pitch-class 5, and they do not change pitches until m. 255 (the upper voice) and m. 259 (the lower voice), at which point they both move to pitch-class 3. One will also note that each voice initially sounding pitch-class 10 (the first, fourth, and sixth) utilizes two pitch-class sets (8 and 7) as the section moves towards the (830838)

A-flat major chord. This quality, while it differs from the initial process of the work, is still process oriented. Beginning in m. 254, Lang begins to methodically insert pitch-classes 7 and 3 into the texture. The highest voice changes to pitch-class 7 first, returning to pitch class 8 in the following hexachord. The next hexachord features a pitch-class 3 in the second voice. The next hexachord features nothing out of the ordinary. In the next hexachord, the fourth voice plays a pitch-class 7, followed by a hexachord with pitch-class 3 in the fifth voice. The last hexachord in the pattern plays a pitch-class 7 in the final voice. When observed in table 2, this pattern makes a clear descending diagonal line, spelling out a (730737) hexachord, a clear reference to the initial hexachord of the piece. In this particular portion of the process, the final voice stays on pitch-class 7, while the other voices repeat the exact same pitch material once more (beginning in m. 260). When the pattern reaches the sixth voice in this second repetition, the pitch-class 7 shifts up to pitch-class 8, where it remains until the process settles on the (830838) hexachord.

Table 2: *Spartan Arcs*, pitch-change pattern (mm. 190-267)

(T)	(5)	(2)	(T)	(5)	(T)
8					
		0			
			8		
					8
8					8
		0			8
			8		8
					8
		0			8
8			8		
8					
		0			
		0			
8					
8		0			

8		0	8		7
8		0	7		7
8		0	8	3	7
8		0	7	3	8
8		0	8	3	8
8	3	0	8	3	8

Other deviations from the initial process in this section are manifested in Lang's willingness to include blemishes within his own processes. As shown in the beginning of the previous table, Lang inserts several false starts into the pattern, shown by the lines that are completely blank. These lines, which occur during bars 192, 195, and 204, represent a return to the (T52T5T) hexachord, a which does not occur in the first three sections. The process in section four is also less rigid in that various combinations of pitches recur. In the first three sections, Lang cycles through every possible combination of pitches without repetition. In this section, he dwells on combinations, often returning to them multiple times.

The fifth section of "Spartan Arcs," which spans from a (830838) A-flat major chord in m. 267 to a (72T727) G minor chord in m. 351, is also more relaxed in its rigidity of process than the first three sections. As shown in table 3, Lang abandons the strict process of the first three sections in a style similar to the fourth section.

Table 3: Spartan Arcs, pitch-change pattern (mm. 267-351)

(8)	(3)	(0)	(8)	(3)	(8)
7	5				
7	5		7	5	
			7	5	
	5		7	5	
				5	
7	5			5	
7				5	
7				5	
7			7	5	
7				5	7
7	5			5	7
7	5				

7	5		7	5	
7	5		7		
7	5		7	5	7
7	5				7
				5	7
					7
			7	5	
			7		
	5		7		
	5		7	5	7
	5				7
	5		7		7
7	5		7		7
7	5				7
7			7	5	7
7				5	7
7			7	5	
7			7		
7	5		7		
7	5		7	5	7
			7	5	7
			7		
	5		7		7
			7		7
7	5		7		7
7			7		7
7			7	5	7
7			7		
7			7		7
7			7		7
7	2		7		7
7		T	7		7
7			7		7
7			7	2	7
7			7		7
7	2		7		7
7		T	7		7
7			7		7
7			7	2	7
7			7	2	7

7		T	7	2	7
7	2		7	2	7
7			7	2	7
7	2		7		7
7		T	7		7
7	2	T	7		7
7		T	7		7
7	2		7		7
7	2	T	7		7
7	2		7		7
7	2		7	2	7
7	2		7		7
7		T	7		7
7		T	7	2	7
7		T	7		7
7			7	2	7
7			7		7
7			7	2	7
7	2		7	2	7
7	2		7		7
7	2	T	7		7
7	2	T	7	2	7

Similar to the fourth section, the fifth section does not treat the movement between the two major hexachords with the same patterned organization as the first three sections. In the initial sections of *Spartan Arcs*, Lang uses a process to move between hexachords in which he changes pitches in a highly ordered fashion. In this process, the amount of pitches that change grow chronologically; early in these sections, only one or two pitches change per hexachord, while the hexachords occurring later in the sections feature more changed notes. In other words, the hexachords early in the section are more closely related to the initial hexachord, while the hexachords later in the section are more closely related to the second hexachord. This does not occur in the fifth section. Instead, Lang includes a peppering of different varieties of hexachords. Some include no changes at all, while others include up to five changed pitches; the number of altered pitches does not affect the order of these hexachords.

The fifth section of “Spartan Arcs” shares some structural and process-oriented features with the fourth section. In the fifth section, the second and fifth voices, while initially playing pitch-class 3, first

begin to change to pitch-class 5. However, in m. 318, they begin to switch to pitch-class 2. A notable similarity occurs between these two sections in regards to the pattern created by the second and fifth voices late in their respective sections. As shown in table 3, the appearance of pitch-class 2 in the second and fifth voices sets a diagonal pattern in motion, one quite similar to the diagonal pattern discussed in the fourth section. While in the fourth section, the beginning and end of these diagonal patterns was shown by an altered pitch class in the outer voices, this pattern in the fifth section is signaled by the occurrences of pitch-class 2 in the second and fifth voices, as well as the introduction of pitch-class 10 in the third voice, which had remained unaltered until this point. While the fourth section only features two of these diagonal patterns (both left to right), the fifth section includes four repetitions of the diagonal patterns, three of which move from left to right, while the other moves from right to left. This section also features several diagonal lines that are nearly complete, only missing one pitch per line.

The final section of “Spartan Arcs” spans from m. 351 to the final measure of the piece. Lang reaches the final (72T727) G minor chord in m. 351. At this point, the voices with pitch-class 7 remain unchanged until the end of the piece. However, as shown table 4, Lang continues to alter the second, third, and fifth voices. The altered pitch in the second and fifth voices is pitch-class 3, and the altered pitch in the third voice is pitch-class 0. Although all three of these voices are never altered in the same hexachord during the final section, a composite of the three altered voices with the unaltered first, third, and sixth voices creates a (730737) C minor chord, a respelling of the (073070) C minor chord, the first chord of the piece.

Table 4: *Spartan Arcs*, pitch-change pattern (mm. 351-379)

(7)	(2)	(T)	(7)	(2)	(7)
		0		3	
	3				
	3			3	
	3				
	3	0			
	3	0			
	3				
		0			
		0		3	
				3	
				3	
		0			
	3				
	3			3	
				3	
		0			
	3				
	3				
		0			
				3	

Lang is hinting at the relationship between the first and final hexachords of the work, treating the section almost like a coda or extended cadence. It is certainly no coincidence that he chooses to oscillate (or imply an oscillation) back and forth between a G minor and C minor chord. The piece ends in g minor, and the relationship between G minor and C minor triads can be interpreted as a half cadence or a plagal cadence.

Rhythmically, *Spartan Arcs* consists of descending patterns of sixteenth notes. These descending patterns overlap due to frequently changing meter. The meter in *Spartan Arcs* varies between 6/16, 5/16, 4/16, and 3/16. Again, the organization of these meters is based on a process. The first three sections (mm. 1-189) feature an identical progression of meter changes. The pattern for the

first three sections is shown in table 5. Each number represents the quantity of sixteenth notes per bar.

Table 5: Spartan Arcs, sixteenth notes per bar (mm. 1-189)

mm. 1- 63 (Section 1)	665665556556665665556556665665554554445445554554445445556556665
mm. 64-126 (Section 2)	665665556556665665556556665665554554445445554554445445556556665
mm. 127-189 (Section 3)	665665556556665665556556665665554554445445554554445445556556665

These identical strings of meter changes can be further broken down into a more easily identifiable pattern. With the exception of the first two 6/16 measures, each meter change occurs at a predictable point. Beginning in the third measure, Lang writes one bar in one meter, followed by two bars in a new meter, followed by three bars in the first meter. After writing three bars in a single meter, he returns to the beginning of the pattern. If one considers the 4/16 bars and 6/16 bars to be one group (group a) and the 5/16 and 3/16 bars (the 3/16 bars appear in the third through sixth sections) to be another group (group b), this process results in the following pattern: abbaaa baabbb. This pattern continuously turns itself around throughout the work. The only exceptions occur during the transitions between the first three sections, at which point Lang writes one bar in one meter, followed by two bars in another meter, followed by one bar in another meter (aabaab... or bbabba...).

In the fourth through sixth sections of *Spartan Arcs* (mm. 190-379), Lang processes his meter with a nearly identical pattern, as shown in the table 6.

Table 6: Spartan Arcs, sixteenth notes per bar (mm. 190-379)

mm. 190-266 (Section 4)	665554554445445554554445445554554445445554554445445554554445445554554443 44333433444344333
mm. 267-350 (Section 5)	4334443443334334443443334334443443334334443443334334445445554554445445554554445445 55455444544555
mm. 351-379 (Section 6)	455444544555655666566555655666

As shown in table 6, Lang remains consistent with his process of arrangement (abbaaa baabbb) in the

final three sections of *Spartan Arcs*. Unlike the first three sections, however, these final sections do not include blemishes in the pattern between sections. The fourth, fifth, and sixth sections fit together seamlessly in regards to the patterned meter changes.

Wed

Wed (1995) is the third composition in *Memory Pieces*, and the most frequently played of any of David Lang's works for solo piano. The work is dedicated to the memory of Kate Ericson, a noted installation artist. In an interview with John Schaefer, Lang described Ericson and the specific moment that inspired *Wed*:

She was a very talented conceptual artist who did her work in conjunction with her boyfriend, Mel Ziegler, and they got married on her deathbed in the hospital. I thought it was so beautiful that there was this moment of hopefulness and moment of tragedy that were linked. I wrote a piece that has these weird major and minor formulas, playing on the equilibrium of happiness and misery.⁶⁹

Wed is an extremely introspective work that demands a pianissimo dynamic throughout the piece, requiring the pianist to maintain a soft and delicate touch.

Wed is written in the fashion of a four-part chorale, although analysis will show the soprano line is independent from the alto, tenor, and bass lines, which are closely related in rhythm and harmonic motion. Before delving into the arrangement of pitches in *Wed*, it is necessary to discuss the rhythmic layout of the work. For the entirety of the piece, Lang limits himself to only three rhythmic patterns, each a four-note repetition of a specific rhythmic value; he constructs the rhythmic structure out of four repeated quarter notes, four repeated dotted quarter notes, and four half notes. These three rhythmic patterns are arranged in a particular order for each voice. The soprano line repeats the following rhythm throughout the piece: four quarter notes, four dotted quarter notes, and four half notes. The alto, tenor, and bass lines repeat the retrograde of the soprano pattern: four half notes, four dotted quarter notes, and four quarter notes. This rhythmic pattern can be observed in figure 16.

⁶⁹ Lang, "Schaefer Interview."

Figure 16: *Wed* (mm. 1-8)⁷⁰

While the rhythmic patterns for the alto, tenor, and bass voices are identical, it is important to note that when the work begins, each voice enters at a different point in the pattern. As a result, these three voices always appear to be moving at a different rate. Lang only strays from this pattern to insert a dotted half note or string of six repeated quarter-note triplets. These disruptions of the rhythmic pattern are directly related to the pitch material, and they occur in all four voices.

David Lang also significantly limits his use of pitch material in *Wed*. While he uses nearly the entire chromatic set (he uses all pitch classes except for 0 and 5), he restricts his voices to a small subset of the overall pitch-class set (12346789TE). The soprano line uses six pitches throughout the work (24679E). The lower three voices are much more limited, each only using three pitches; the alto uses (19E), the tenor uses (87T), and the bass uses (234). In this composition, there are two processes at work that alter the outcome of the pitch material. It is important to differentiate between pitches that are part of the initial process and pitches that are part of the disruptive process. The soprano line consists of a ten-note phrase, which is repeated four times over the course of the work. The line is: (E4277E4992). This line represents the initial process for the soprano line. The initial process for the alto, tenor, and bass lines are much shorter than the soprano, each only consisting of two pitches. The alto plays (E9),

⁷⁰ Lang, *Memory Pieces*, 15.

the tenor plays (87), and the bass plays (42). Each initial process line, however, is interrupted by at least one pitch per voice; these interjections occur at different points during the initial lines. In the soprano line, pitch-classes 1, 6, and T serve as disruptive pitches (pitch-class T is only a disruptive pitch when sounded below the alto line in the form of a dotted half note). The disruptive pitch classes in the alto, tenor, and bass are 1, T, and 3. Not only do these interjections disrupt the initial pitch pattern, they also disrupt the rhythmic formula. Each of these disruptive pitches enters as a dotted half note (only in the soprano) or a series of quarter-note triplets (in all four voices).

Upon closer inspection, the disruptive pitches serve as another form of displacement of the original pattern (the first being the different rhythmic patterns, which cause each voice to move at a different rate). By inserting these interruptions, Lang prolongs the sense of tension within the piece, delaying the repetition of chords significantly longer than if he had simply maintained the movement the initial pattern. The disruptive pitches are also patterned, occurring at predictable points within the piece in a regulated order. These interruptions occur in groups of four vertical tetrachords (there is one disruptive pitch per tetrachord), and always happen in the following order: alto, bass, tenor, and soprano. The tetrachords with alto, bass, and tenor disruptive pitches always occur one after another; the tetrachords with a soprano disruptive pitch occurs directly after the tenor in every other group of tetrachords with disruptive pitches. On the instances where the soprano disruptive pitch does not directly follow the tenor disruptive pitch, there is one tetrachord with no disruptive pitches separating the tetrachords with disruptive tenor and soprano pitches (The only exception to this rule occurs during the fifth and sixth series of tetrachords with disruptive pitches. These two series both include the tenor disruptive pitch and the soprano disruptive pitch back to back without an uninterrupted tetrachord in between the two.). This pattern repeats itself seven times, each time with a pair of undisrupted tetrachords separating the patterns including disrupted tetrachords.

Table 7: *Wed, tetrachords including disruptive pitches*

Sop	Alto	Tenor	Bas s	Tetrachord #
E	E	8	4	1
4	9	7	2	2
2	E	8	4	3
7	9	7	2	4
7	1	8	4	5
E	E	7	3	6
4	9	T	2	7
1	E	8	4	8
9	9	7	2	9
9	E	8	4	10
2	1	7	2	11
E	9	8	3	12
4	E	T	4	13
2	9	7	2	14
E	E	8	4	1
7	9	7	2	4
7	E	8	4	15
E	1	7	2	16
4	9	8	3	17
9	E	T	4	18
6	9	7	2	19
9	E	8	4	10
2	9	7	2	14
E	1	8	4	20
4	E	7	3	21
2	9	T	2	22
7	E	8	4	15
E	9	7	2	23
7	E	8	4	15
E	9	7	2	23
4	1	8	4	24
9	E	7	3	25
9	9	T	2	26
6	E	8	4	27
2	9	7	2	28
E	E	8	4	1
4	1	7	2	29
2	9	8	3	30
7	E	T	4	31
E	9	7	2	23
7	E	8	4	15
E	9	7	2	23

4	1	8	4	24
9	E	7	3	25
9	9	T	2	26
2	E	8	4	3
6	9	7	2	19

Table 7 displays this pattern. Each horizontal row represents a tetrachord (listed chronologically) from *Wed*. The numbers in bold type represent the disruptive pitches. The table shows not only the regularity of Lang's pattern of organized disruption, but also the variety of tetrachords at use in the work. The numbers at the far right of the table represent the chronological number of the tetrachord. When a tetrachord is repeated, this number indicates the return. As shown in the table, throughout the course of *Wed* Lang uses no less than thirty-one tetrachords, most of which are never repeated. No tetrachord is repeated more than four times. This method of analysis shows the diversity of harmonic material in *Wed* and explains its sense of longing, a constant suspension in search of resolution; however, an understanding of the structure and process of the piece requires an analysis of pitches without the disruptive interjections.

The analysis in Table 7 shows a calculated pattern for the insertion of disruptive pitches into the overall fabric of *Wed*, but it does not shed much light on Lang's initial process. Throughout the course of the piece, each voice has seven interruptions. By temporarily removing those disruptive pitches from the table of tetrachords, one is able to see the initial pattern of *Wed*. As shown in Table 8, an analysis of the tetrachords of *Wed* without the disruptive pitches reveals a highly ordered pattern of events. Now, instead of thirty-one tetrachords, there are only ten. Also, once each of the ten tetrachords are stated, the pattern starts over again. The initial process is simply a series of ten tetrachords repeated four times. Furthermore, were one to remove the soprano line, and simply analyze the remaining voices as trichords, there would only be two existing pitch-class sets: (E84) and (972), which move back and forth regularly throughout the work.

Table 8: *Wed*, tetrachords without disruptive pitches

Sop	Alto	Tenor	Bass	Tetrachord #
E	E	8	4	1
4	9	7	2	2
2	E	8	4	3
7	9	7	2	4
7	E	8	4	5
E	9	7	2	6
4	E	8	4	7
9	9	7	2	8
9	E	8	4	9
2	9	7	2	10
E	E	8	4	1
4	9	7	2	2
2	E	8	4	3
7	9	7	2	4
7	E	8	4	5
E	9	7	2	6
4	E	8	4	7
9	9	7	2	8
9	E	8	4	9
2	9	7	2	10
E	E	8	4	1
4	9	7	2	2
2	E	8	4	3
7	9	7	2	4
7	E	8	4	5
E	9	7	2	6
4	E	8	4	7
9	9	7	2	8
9	E	8	4	9
2	9	7	2	10
E	E	8	4	1
4	9	7	2	2
2	E	8	4	3
7	9	7	2	4
7	E	8	4	5
E	9	7	2	6
4	E	8	4	7
9	9	7	2	8
9	E	8	4	9
2	9	7	2	10

Wed is a process piece in which one process masks the other. While the analysis in table 8

clearly shows a controlled and relatively simple pattern, the addition of a separate pattern of disruptive pitches disguises this initial pattern, prolonging the sense of delayed resolution. These disruptive pitches, hiding the initial process from the listener, displace the initial pattern in each voice. The disruptive pitches, along with the varying degrees of implied tempi caused by the rhythmic pattern, transform *Wed* from a simple oscillation between two chords to a highly contrapuntal work with a distinct sense of steady, yet subtle, harmonic unrest.

Grind

Like *Wed*, *Grind* (1996) is also composed in four voices and relies heavily on process. The work is dedicated to the memory of Jacob Druckman, one of Lang's teachers at Yale, who died in 1996. Serving as the foundation for *Grind to a Halt* (1996), Lang's similarly processed and textured work for orchestra, *Grind* is a relentlessly loud and dissonant composition featuring a constant four-against-five polyrhythm with slow chromatic movement between lines.

Grind is composed in four voices; however, it is best to approach an analysis of the pitches by treating the material in two separate groups. The first group consists of the lower two voices. These voices move exclusively in rhythmic unison at the rate of four quarter notes per bar. Both voices deal with limited pitch material; the bass voice only plays within the pitch-class set (1, 2, 3), and the tenor voice only uses pitches within the pitch-class set (4, 5, 6, 7). In these two voices, one pitch moves by one chromatic step every other measure. This chromatic movement causes a slow shift from major to minor thirds, and vice versa. Together, the two voices range from a (1, 4) interval to a (4, 7) interval.

The upper voices of *Grind* are also in complete rhythmic unison, sounding in quarter-note quintuplets throughout the piece. Also, these two voices are nearly always sounding at unison pitch separated by an octave. This octave unison is only abandoned briefly in mm. 33 and 34, where the soprano and tenor are separated by a minor seventh. The featured polyrhythms and an example of the pitch motion can be seen in Figure 17.

Figure 17: *Grind* (mm. 1-10)⁷¹

The musical score for the first ten measures of 'Grind' is presented in two systems. The first system shows measures 1 through 5, and the second system shows measures 6 through 10. The right-hand part consists of five groups of quarter-note quintuplets, each indicated by a bracket with the number '5' above it. The left-hand part provides a harmonic accompaniment with quarter notes. The dynamic marking *fff* is placed below the first measure of the first system. The key signature is one sharp (F#).

Perhaps the most unique aspect of *Grind* is the potentially endless quality of the piece. The introductory chord is identical to the chord at the conclusion of the piece, but even more significant is the numerical pattern established within the right-hand line. Each pitch in the right-hand material is repeated ten (or a multiple of ten) times, with the exception of the first chord, which is repeated six times, and the last chord, which is repeated twenty-nine times. Were one to consider the final written measure to actually be the beginning of a repetition of the piece, the work could potentially continue infinitely. This idea is supported by the fact that the sum of repetitions of the pitch-class 9 played in quarter-note quintuplets at the beginning and end of the piece equals thirty-five; however, were the first and final measures considered to be the same measure, the sum would actually be thirty repetitions, fitting into the overall pattern of the work.

Diet Coke

Diet Coke (1997), the fifth work in the *Memory Pieces* collection, is dedicated to Bette Snapp, who worked at *Novello*, Lang's first publishing company. Again, this work is meant to remember a singular aspect of the dedicatee's character. In an interview with Mark Alburger, Lang said:

Of all the people on this list of pieces, Betty Snapp was my best friend. She promoted the

⁷¹ Ibid., 18.

catalogue of my original publisher, Novello. That's how I met her. Then she became the public relations director. For a time, I talked to her virtually every day of my life. There is one way in which it is important to write a serious piece, which really represents the tragedy. I wrote a piece last year in memory of her called *The Passing Measures* for the City of Birmingham Orchestra, scored for bass clarinet and women's chorus, all-amplified orchestra -- forty-five minutes long, and it is much darker than this piano piece. But in the little piece I want to remember the light side that I liked about her. Everyone who went in to visit her in the hospital always commented on the fact that she would be on her death bed with all these tubes in her, and next to her there was this giant container of Diet Coke. And everyone would always joke with her, "What if these tubes are connected to that?!" She never went anywhere without a Diet Coke. She would show up with ice cubes in her purse and a thermos of Diet Coke.⁷²

Like the previously discussed *Spartan Arcs*, this work is another example of Lang's use of a singular process throughout an entire piece. Again, Lang deals with a significantly limited array of rhythms and thematic material.

Like *Cage* and *Grind*, *Diet Coke* is composed within a rigid and unchanging rhythmic structure; the entire piece is in 2/4 meter. The work is written in three linear voices, each in counterpoint with one another. Each of these voices cycle through a series of motives lasting six bars per repetition. These motives are all variants of first motive. This motive consists of six four-sixteenth-note groups in each voice. Each sixteenth-note group is separated by one quarter rest. The entrances of the motive occur on different beats in each voice. The upper voice begins its statement of the subject on beat one, the lower voice on beat two, and the middle voice on the end of beat two. This pattern remains consistent throughout the piece, with the exception of the first and last six measures, during which only one voice is heard. In the first six bars, the subject is stated in the upper voice alone. The lower and middle voices enter in m. 6. All three voices are heard throughout the work until m. 115, which features the middle voice alone. Figure 18 depicts the three voices in counterpoint with one another.

72 Alburger, "Bang on an Ear," 2.

Figure 18: *Diet Coke* (mm. 7-18)⁷³

Diet Coke is another example of David Lang's emphasis on process. Throughout the work, the initial motive is sent through a steadily regulated pattern. Once the process has been completed, the piece is over. In this particular case, Lang begins with a motive comprised of a (0, 4, 5, 7) pitch-class set, and, through the use of his process, settles upon a (T, 3, 6, 8) pitch-class set at the end of the work. This process can be observed in both the upper and lower voices, as they are comprised of the same pitch material displaced by one quarter-rest. The middle voice is also based off of the same material; however, it is transposed down a fifth from the original subject. The middle voice is processed in the same manner as the outer two voices, but the process is delayed by one repetition of the six bar motive. In other words, while the upper and lower voices are going through the second phase of the process, the middle voice is only going through the first. Table 9 displays the process, as well as the relationship between the middle voice and the upper and lower voices. Each line in the table represents one statement of the motive. The middle column displays the middle voice as written, while the third column displays the middle voice transposed up a fifth. This column displays the clear relationship between the three voices. The middle voice pitch-class set is always identical to the upper and lower

⁷³ Lang, *Memory Pieces*, 20.

voice pitch-class set occurring one line earlier.

Table 9: Diet Coke, pitch-class organization with transposed middle voice

Upper and Lower Voices	Middle Voice	Middle Voice T7
(0, 4, 5, 7)	Rest	Rest
(0, 4, 5, 7)	(5, 9, T, 0)	(0, 4, 5, 7)
(0, 4, 5, 7)	(5, 9, T, 0)	(0, 4, 5, 7)
(0, 4, 5, 8)	(5, 9, T, 0)	(0, 4, 5, 7)
(0, 4, 6, 7)	(5, 9, T, 1)	(0, 4, 5, 8)
(0, 3, 5, 7)	(5, 9, E, 0)	(0, 4, 6, 7)
(T, 4, 5, 7)	(5, 8, T, 0)	(0, 3, 5, 7)
(T, 4, 5, 8)	(3, 9, T, 0)	(T, 4, 5, 7)
(T, 4, 6, 7)	(3, 9, T, 1)	(T, 4, 5, 8)
(T, 3, 5, 7)	(3, 9, E, 0)	(T, 4, 6, 7)
(0, 3, 6, 7)	(3, 8, T, 0)	(T, 3, 5, 7)
(0, 3, 5, 8)	(5, 8, E, 0)	(0, 3, 6, 7)
(0, 4, 6, 8)	(5, 8, T, 1)	(0, 3, 5, 8)
(0, 3, 6, 8)	(5, 9, E, 1)	(0, 4, 6, 8)
(T, 2, 4, 6, 8)	(5, 8, E, 1)	(0, 3, 6, 8)
(T, 3, 5, 8)	(3, 7, 9, E, 1)	(T, 2, 4, 6, 8)
(T, 3, 6, 7)	(3, 8, T, 1)	(T, 3, 5, 8)
(T, 3, 6, 8)	(3, 8, E, 0)	(T, 3, 6, 7)
(T, 3, 6, 8)	(3, 8, E, 1)	(T, 3, 6, 8)
Rest	(3, 8, E, 1)	(T, 3, 6, 8)

As shown in Table 9, Lang's process does not result in any repeated pitch-class sets (except for the initial (0, 4, 5, 7) set and the final (T, 3, 6, 8) set). Table 10 shows the sets arranged next to one another vertically, giving a visual representation of Lang's method of process in regards to changing pitches. The bracketed pitch classes represent the changed pitch in each vertical hexachord. Sets one through four and five through eight are considered variants of the initial (0, 4, 5, 7) pitch-class set, while sets nine through twelve and thirteen through sixteen are considered variants of the final (T, 3, 6, 8) pitch-class set.

Table 10: Diet Coke, pitch-class organization

Sets 1-4	Sets 5-8	Sets 9-12	Sets 13-16
0 0 0 0	[T] [T] [T] [T]	[0] [0] [0] [0]	T T T T
4 4 4 [3]	4 4 4 [3]	3 3 [4] 3	[2/4] 3 3 3
5 5 [6] 5	5 5 [6] 5	6 [5] 6 6	6 [5] 6 6
7 [8] 7 7	7 [8] 7 7	[7] 8 8 8	8 8 [7] 8

Table 10 shows Lang's methodical approach to his process of changing pitches in *Diet Coke*. Similar to the process of *Spartan Arcs*, Lang shifts individual pitches in order to gradually move from the initial (0, 4, 5, 7) tetrachord to the final (T, 3, 6, 8) tetrachord. Sets one through four display the least amount of deviation from the initial tetrachord, while sets 13 through sixteen show the least amount of deviation from the final tetrachord. The bracketed pitch classes in table 10 show a distinct order in the moving pitches. Sets one through four and thirteen through sixteen display symmetrical movement; in sets one through four, the highest sounding pitch changes in the second tetrachord, followed by the second highest in the third, and the third highest in the fourth. The lowest sounding pitch then changes in the fifth tetrachord. In sets thirteen through sixteen, the third highest pitch moves first, followed by the second highest pitch, which is then followed by the highest pitch in set 15 before finally settling on the final (T, 3, 6, 8) tetrachord in the 16th set. Sets five through eight and nine through twelve, while they are not symmetrical, are highly related. Except for sets five and twelve, each of these sets has two pitch classes deviating from their root tetrachords. This is caused by the lowest sounding voice consistently going against the root tetrachord for all sets between set five and set twelve. The higher sounding voices move in a pattern similar to that seen in sets one through four. The highest sounding voice changes in set six, following by the second highest in set seven, followed by the second lowest in set eight. In sets nine through twelve, the majority of the pitches are now belonging to the final tetrachord. However, the shifting pitches continue to move in an identical fashion. The highest sounding pitch moves in set nine, followed by the second highest in set ten, followed by the third highest in set eleven. In set twelve, the only pitch differing from the final tetrachord is the lowest sounding pitch.

It can be argued that *Diet Coke* is the most purely process oriented work in *Memory Pieces*. In other words, this is the only piece that consists of a single process. Unlike other works in the set, which utilize several processes or strategically placed anomalies, *Diet Coke* is a simple statement of the same

pattern in three voices. Once the process is complete, the piece ends. Despite the purity of the process, Lang still separates himself from the early minimalists in “Diet Coke” by utilizing a audibly imperceptible process that results in highly chromatic passages.

Cello

Cello (1996), the sixth installment of *Memory Pieces*, was composed in memory of Anna Cholakian, the original cellist of the Cassatt String Quartet. This work is one of the more introspective of the *Memory Pieces*, moving dreamily between different implied harmonies. Like *Wed*, *Cello* features lines in counterpoint with one another in a strictly organized rhythmic pattern. As these lines move, vertical harmonies are implied, but rarely do they resolve. Instead, the piece progresses with an ebb and flow of consonant harmonic tension. As is true with all of the *Memory Pieces*, the musical events in *Cello* are dictated by Lang's process, not functional harmony.

The most apparent aspect of Lang's process in *Cello* exists within the rhythmic pattern. In this work, Lang uses three voices; however, the two lowest voices move in constant rhythmic unison with one another and can therefore be best thought of as a single moving part. Figure 19 depicts the patterned polyrhythm.

Figure 19: *Cello* (mm. 1-9)⁷⁴

Throughout the entire piece, these parts move in groups of four. Within each group of four, the pitch does not change, nor does the rhythm. Lang limits himself to three related rhythmic patterns; the first pattern is a group of four quarter notes, the second a group of four dotted quarter notes, and the third a group of four half notes. Furthermore, these groups are always arranged in the same order: quarter notes, dotted quarter notes, half notes, dotted quarter notes. Lang creates rhythmic polyphony by beginning the right and left hands in different places within the order of rhythmic groups (he uses the same method in *Wed*). In m. 1, the left-hand pitches begin with dotted quarter notes, while the right-hand figure begins with quarter notes. This causes the left and right hands to move at different rates of speed throughout the work. However, due to the constant uniformity of the rhythmic pattern, both parts restart their cycles simultaneously every seven bars.

In terms of pitch collections, Lang limits himself to eight pitches: (034679TE). Also, he limits himself in the amount of pitches used per voice, writing only three pitches for each voice throughout the piece. The upper voice only uses pitch-classes 4, 6, and 7, the middle voice only uses pitch-classes 9, T, and E, and the lower voice only uses pitch-classes 0, 3, and 4. As previously mentioned, while *Cello* is written in three voices, the rhythmic unison of the two lower voices, as well as the occasional

⁷⁴ Ibid., 24.

vertical linearity of all three voices, often creates an implied functional harmony. While functional harmony does not play an important role in the construction of this piece, these trichords are essential to Lang's process concerning the pitch content of *Cello*.

While the varied durations between voices in the rhythmic pattern causes the right-hand and left-hand lines to line up infrequently, both hands feature the same number of total pitches; therefore, as in *Wed*, the removal of the polyrhythmic element allows one to analyze the pitch material as a series of vertical chords. Throughout the course of *Cello*, David Lang uses twelve vertical trichords. For the sake of analysis, it is useful to assign each trichord a number. Table 11 shows each trichord in accordance with its assigned number. The numbers are simply assigned in order of the trichord's appearance in the work.

Table 11: Cello, numbered trichords

1	2	3	4	5	6	7	8	9	10	11	12
47E	46T	37E	36T	37T	46E	449	07E	049	079	06T	349

These trichords are used in a particular fashion, establishing a pattern that dictates the pitch content of *Cello*. By going through the piece and identifying the trichord in use during each rhythmic group, it is possible to identify this pattern. From mm. 1-21, Lang uses trichords one through seven in the following order: 1 2 3 3 2 4 5 4 3 2 2 3 1 6 1. An identical pattern is used from mm. 21-43. The remainder of the piece (mm. 43-83) delves into some extended pitch material. The trichord pattern for these measures is as follows: 7 8 8 7 9 T 9 11 12 12 11 4 12 4 3 2 2 3 1 6 1 1 1 11. If these two patterns are placed back to back, a pattern begins to appear, as indicated by the brackets:

1 [2332] 4 5 4 [3223] 1 6 1 [7 8 8 7] 9 T 9 [11 12 12 11] 4 12 4 [3 2 2 3] 1 6 1 [1 1 1 1]

The pattern consists groups of three and four trichords, with each group oscillating back and forth between two pitches arranged in a symmetrical fashion. With the exception of the initial and last four trichords, the entire piece is based around these groups of three and four. In the groups of four, Lang consistently moves back and forth between two neighboring chords. The most typical four-trichord

groups consist of trichord two and trichord three, while two four-trichord groups during the middle of the piece consist of trichords seven and eight and trichords eleven and twelve. The groups of three trichords are slightly less regular in their pitch collections. Like the four trichord groups, the three trichord groups are uniform in their movement; however, the numbers involved are less regular. The most typical three trichord group consists of trichords one and six, although groups consisting of trichords nine and ten and trichords four and twelve are also present.

Lang's use of patterned harmonies in *Cello* is reminiscent of the process used in *Wed*. Both works feature a highly organized pattern of stacked harmonies, which are, in both cases, disguised by a rhythmic process causing counterpoint between the voices. *Cello* differs from *Wed* in that it does not feature any disruptive pitches, and is therefore more straightforward in its process.

Wiggle

Wiggle (1996) was composed in memory of Frank Wigglesworth, a prominent composer in New York during the 1950s, who died in 1996. Lang remembers Wigglesworth as a witty, friendly neighbor.

He was a great American composer, very funny and human person, a real wonderful spirit in the New York music scene, instrumental in all sorts of generous projects. He was on the Virgil Thomson board, on the CRI board; he was involved in all sorts of "money give-aways." He was a really good guy who lived around the corner from me in the West Village.⁷⁵

An aggressive work comprised of seven-note linear patterns in sixteenth-note septuplets, *Wiggle* is based entirely on pitch-class set (023579T). Again, *Wiggle* is a composition that relies heavily on process. Each sixteenth-note septuplet represents one permutation of the pattern; after the first bar, none of the septuplet patterns are repeated in an individual voice until the entire pattern repeats itself. While recurrences of the same septachords do arise, Lang changes the octave of some of the pitches in order to maintain a unique contour. Each sixteenth-note septuplet group begins on either pitch-class 0 or pitch-class 9; therefore, one could interpret the use of the (023579T) pitch-class set as an alternation

⁷⁵ Alburger, "Bang on an Ear," 1.

between the C Dorian and A Locrian modes.

Lang's use of two long, constantly changing lines is an effective way of manipulating the form of *Wiggle*. The first long line, which Lang instructs the pianist to play “with the right hand (mostly),” begins in mm.1 and lasts until m. 131.⁷⁶ The pattern begins with a simple statement of the (023579T) pitch-class set, directly followed by a series of permutations on the initial set, as shown in figure 20.

Figure 20: *Wiggle* (mm. 1-5)⁷⁷

This line continues without a repetition of any single seven-note contour until m. 65, which features two ascending repetitions of the initial (023579T) pitch-class set. In m. 66, Lang adds a second voice, which plays its own seven-note pattern, as shown in figure 21.

Figure 21: *Wiggle* (mm. 66-71)⁷⁸

This lower voice is based on a (9T02357) pitch-class set and also features a series of permutations, which remain unrepeated (in contour, not pitch content) until the process comes to an end. Also in m.

⁷⁶ Lang, *Memory Pieces*, 27.

⁷⁷ *Ibid.*

⁷⁸ *Ibid.*, 30.

66, the right-hand pattern begins an exact repetition of the long line of permutations that originally began in m. 2. Both lines continue to play together until m. 131. The right-hand line is completed in m. 131 and rests for the remainder of the work. In m. 132, the left-hand pattern begins a repetition of the material established in m. 66. This pattern continues until the end of the work.

The right-hand and left-hand lines in *Wiggle* are highly related. As previously stated, both lines are comprised of the exact same pitch collection; however, the two different lines emphasize different spellings of the (023579T) pitch-class set. The right-hand material is based on of the (023579T) spelling of this pitch-class set, while the left-hand material is based on the (9T02357) spelling. Both lines begin with an annunciation of their respective pitch-class sets in ascending order. After this initial statement, both lines are subjected to the exact same method of manipulation. In a similar style to the process of pitch manipulation in *Spartan Arcs*, Lang methodically diverges from the original pitch-class set. However, unlike *Spartan Arcs*, the purpose of changing the pitches in *Wiggle* is not in the interest of moving from one pitch-class set to another. Instead, the pitches change in order to maintain a continuously evolving pattern. While it is unclear why specific pitches move at specific times, analysis shows Lang intentionally changes pitches in the same positions of the left-hand and right-hand lines. In each septachord (regardless of whether it occurs in the right hand or left hand), each sixteenth-note septuplet beat is assigned two pitches. One pitch represents the initial pitch for a specific hand, while the secondary pitch represents the deviation from the initial pitch. The first sixteenth-note septuplet in right-hand line, for example, has an initial pitch-class 0; its secondary pitch is pitch-class 9. Conversely, the initial pitch for the first sixteenth-note septuplet in the left hand is pitch-class 9, while its secondary pitch is pitch-class 0. The initial pitches for the right hand are (023579T), and the secondary pitches for the right hand are (9T02357). The initial pitches for the left hand are (9T02357), and the secondary pitches for the left hand are (023579T). By relating the two hands in this fashion, Lang ensures that he will be able to deviate from the initial order of pitches in a highly processed

manner without adding extraneous pitch classes. Table 12 shows Lang's manipulation of the left-hand and right-hand pitch-class sets. The numbers in bold signify the deviations from the initial pattern.

Table 12: Wiggle, right-hand and left-hand septachords

RH	LH
023579T	9T02357
9T3579T	0202357
9T3579T	0202357
9T0579T	0232357
9T3279T	0205357
9T3539T	0202757
9T3575T	0202397
0T35797	920235T
9235797	0T0235T
9T35797	020235T
9205797	0T3235T
9232797	0T0535T
923539T	0T02757
9235757	0T0239T
023535T	9T02797
0T3279T	9205357
0T0575T	9232397
0T3575T	9202397
9T3575T	0202397
9T3539T	0202757
9T3279T	0205357
9T3579T	0202357
9T3579T	0202357
9T0579T	0232357
9T3579T	0202357
9T3539T	0202757
9T0579T	0232357
9T3239T	0205757
9T0279T	0235357
9T3579T	0202357
9T3579T	0202357
9T3539T	0202757
9T3575T	0202397
9T35797	020235T
9235797	0T0235T
9232797	0T0535T
923539T	0T02757
9235757	0T0239T
923535T	0T02797
9T3279T	0205357
9T3575T	0202397

9T3239T	0205757
9T3579T	0202357
9T3279T	0205357
9T0579T	0232357
9T0579T	0232357
9T0575T	0232397
0T05797	923235T
9T35797	020235T
9T3539T	0202757
9T35757	020239T
0T3535T	9202797
0T3579T	9202357
0T3539T	9202757
9T0279T	0235357
9T0279T	0235357
0T02797	923535T
920579T	0T32357
9205757	0T3239T
020575T	9T32397
0T3239T	9205757
0T3239T	9205757
9232797	0T0535T
023535T	9T02797
023239T	9T05757
020575T	9T32397
0T3535T	9202797
923535T	0T02797
9232797	0T0535T
9235757	0T0239T
9T35757	020239T
0T05757	923239T
0T35797	920235T *
0202797	9T3535T *
020279T	9T35357
9T3539T	0202757
923239T	0T05757
923579T	0T02357
9T3539T	0202757
9T0579T	0232357
9T05797	023235T
9232797	0T0535T
9T35797	020235T
9T35797	020235T
9T3575T	0202397 *
9T3579T	0202357
9T3279T	0205357
0T0579T	9232357

the left-hand column; in these cases, the manipulation of the right and left-hand pitches do not match. These three anomalies can be explained either by error or Lang's willingness to temporarily stray from the process. Aside from these anomalies, each right-hand septachord is manipulated in the same way as the complimentary left-hand septachord.

Beach

Beach (1996), the final composition in *Memory Pieces*, was written in memory of David Huntley, a representative at Boosey and Hawkes Publishing. In an interview with Mark Alburger, Lang remembers Huntley as a genuine, enthusiastic lover of new music.

He was the promotion person for Boosey & Hawkes for many years. He was the same person to whom John Adams dedicated his Violin Concerto. He was an unbelievably sweet and knowledgeable person -- very smart, very interested in all sorts of music. He would call me and tell me about music that he thought we should program at Bang on a Can that had nothing to do with Boosey & Hawkes. He would hear something that he liked and he'd say, "There's this piece, it's published by Universal! And you should get it!" He was a tremendously interesting person who had dedicated his life to new music. He was really one of the old-guard new-music people who knew everything.⁷⁹

Beach was composed specifically as a nod to the conversations Lang had with Huntley during his illness. In an interview from April 2012, Lang told me:

Basically, *Beach* was written in memory of David Huntley. While he was dying he went blind. A bunch of us would go over and talk to him, just to keep him company. He had been listening to all of these Beach Boys records, and he was talking about how revolutionary the editing was in those. We would spend a lot of time talking about what an editing genius Brian Wilson was.

In this case, the specific memory behind the work not only serves as an homage to one of Lang's friends, it also motivates the design of Lang's process. *Beach* consists of a quiet, meandering line in the middle of the keyboard, interrupted by occasional staccato sixteenth-note entrances at the low and high extremes of the piano. While the rhythmic aspects of *Beach* can be understood through analysis, the pitch organization of the majority of the work, while process driven, can not be unravelled, as it is edited together from an unknown string of melodies, a nod to Huntley's admiration of Brian Wilson.

⁷⁹ Alburger, "Bang on an Ear," 1.

Like each of the *Memory Pieces*, this work is composed using a series of specific processes.

Rhythmically, the middle line is similar to the processes used in *Wed* and *Cello*. The piece consists of a series of four-bar rhythmic phrases in 2/4 meter. Each of these phrases consist of a bar of straight sixteenth notes, followed by a bar of straight eighth-note triplets, followed by a bar of straight eighth notes, followed by another bar of straight eighth-note triplets, as shown in figure 22.

Figure 22: *Beach* (mm. 1-4) (middle voice)⁸⁰



As in *Cello*, this pattern continues throughout the piece; however, similarly to *Wed*, Lang adds an additional rhythmic element that both interrupts the initial rhythmic pattern and informs the larger form of the work in *Beach*. Beginning in m. 5 (directly after the initial statement of the four-bar rhythmic pattern), Lang begins to methodically remove one beat per measure (the bars with sixteenth notes lose one sixteenth note, the bars with eighth notes lose one eighth note, etc.). Lang simply goes from left to right, removing one beat per four-bar phrase. In the rhythmic pattern from mm. 5-8, he removes the first sixteenth note in m. 5; in the next four bars (mm. 9-12), he removes the second sixteenth note of m. 9. This pattern continues until m. 97, at which point each individual beat of the four-bar rhythmic phrase has been removed exactly once. Instead of restarting the pattern or moving on to an unrelated pattern, the four-bar rhythmic phrases beginning in m. 97 feature a retrograde version of the previous pattern. While the specific rhythms of the four-bar phrase remain unchanged, Lang continues to replace beats with rests, this time from right to left. It is important to note that Lang does not complete the initial subtraction process by re-stating the four-bar rhythmic phrase without interruption in m. 97. Instead, he opts to treat the final four-bar rhythmic phrase of the initial process (mm. 93-96) as a trigger for the retrograded pattern, which begins in m. 97. A similar situation occurs in m. 189. Again, the

⁸⁰ Lang, *Memory Pieces*, 36.

subtraction process was completed in the previous four-bar rhythmic phrase (mm. 185-188). In m. 189, Lang sets the subtraction process in motion from left to right once again.

One particularly interesting aspect about the rhythmic process of *Beach* is the imperfections and inconsistencies within the piece. Each of these inconsistencies interrupts the subtraction process, either by simply neglecting to remove a pitch from a four-bar phrase, or removing a pitch out of order. The first occurrence of a glitch in the process occurs in the four-bar phrase in mm. 9-12. According to the pattern of subtraction established by Lang throughout the rest of the piece, a rest should replace the second sixteenth note in m. 9; however, the score shows the third sixteenth note replaced by a rest, a clear deviation from the pattern. A similar situation occurs in m. 54, in which one expects to find the sixth eighth-note triplet replaced by a rest. Instead, the beat is sounded, causing the four-bar phrase from mm. 53-56 to be one of only two statements of the four-bar rhythmic phrase without a rest (the other statement exists in mm. 1-4).

Another process driven element in "*Beach*" occurs in the two outer voices. While these voices are played at both extremes of the keyboard, analysis shows they are linearly related and should therefore be considered as one entity. While the voice in the middle register plays a constant stream of pitches, the voice at both extremes of the keyboard enters comparatively infrequently, offering periodic staccato sixteenth-note interjections, as shown in figure 23.

Figure 23: *Beach* (mm. 1-20)⁸¹

The musical score consists of four systems, each with a treble and bass clef. The first system begins with a treble clef and a dynamic marking of *ppp*. The second system has a dynamic marking of *mp*. The third system has a dynamic marking of *ppp* and a handwritten annotation *(Bv)*. The fourth system has a dynamic marking of *sim.* and a handwritten annotation *(h)*. The score includes various rhythmic patterns, including triplets and sixteenth notes.

Like the other rhythmic elements of *Beach*, these interjections are carefully and logically planned. Each entrance occurs in the highest octave of the keyboard on one of four pitch-classes: 8, 9, E, or 0. Each of these entrances triggers two more instances of the same pitch-class set, creating three-note patterns consisting of one pitch spread out over the entire register of the piano. The second occurrence of a pitch in the pattern appears one octave below the initial pitch and 5 measures after the initial pitch. The third

⁸¹ Ibid.

occurrence of a pitch appears in the lowest octave of the piano, exactly 5.5 measures after the second occurrence of the pitch. Each of these entrances occurs on either the second sixteenth note or last sixteenth note of a measure.

The sequence of pitch material in *Beach* is also controlled by a process, but, according to Lang, it is a process that no one will ever be able to derive through analysis. In an interview from April of 2012 he told me:

You'll never figure it out because of how I designed the process. I made the entire piece of music out of editing. I made one long melody that was in sixteenth notes, and I laid it against itself in triplets, and I laid it against itself in eighth notes, and I laid it against itself in triplets again, but pushed back a measure. There are four different tracks of this melody. I went to the place where all the melodies were playing, and I edited.⁸²

In other words, unless one already knew the initial melody in its original form, it is impossible to accurately analyze the organization of pitches in the middle voice of *Beach*. The use of process in this particular voice is perhaps the strongest example of hidden process in David Lang's solo piano compositions. While the process remains essential to the construction of the music, Lang has no desire to make it transparent. Unlike early minimalist works such as Glass's *Two Pages* or Reich's *Piano Phase*, in which process dictated musical elements and dominated the subject matter as an audible entity, the process in *Beach* represents a more current approach to process music in which notes and rhythms are still based on patterns, but the patterns are hidden beneath the surface.

Post-Memory Pieces

After completing the *Memory Pieces* in 1996, David Lang continued to compose solo piano music in a similar style and breadth. Between 1997 and 2012, Lang published six works for solo piano: *Broken Door* (1998), *Boy* (2001), *Cut* (2002), *The Point* (2003), *This Was Written By Hand* (2003), and *Hard Hit* (2012). Like the *Memory Pieces*, these works are short, process based, and almost exclusively lacking in formal development. While none of these works are memorials for the deceased, each work

⁸² Lang, "Larson Interview."

for solo piano proceeding the *Memory Pieces* includes a personal dedication to one of Lang's friends, teachers, or colleagues.

Broken Door

Broken Door was composed in 1997 for Carlo Boccadoro, an Italian composer and conductor of Sentieri Selvaggi, a modern chamber ensemble with strong ties to Bang On a Can. This work is Lang's first published composition for solo piano after the completion of the *Memory Pieces*, and it is the first in a series of works that, while they are not included in the *Memory Pieces* set, can be considered in a similar style.

Broken Door is a process piece consisting of four sections (mm. 1-64, mm. 65-130, mm. 131-196, and mm. 197-262). Each section is comprised of a single line oscillating between two shifting pitches. In the first three sections, this line consists of repeating sixteenth notes, which are then punctuated by longer valued pitches at the end of each section. The fourth section, however, does away with the repeated pitches, utilizing longer rhythmic values throughout.

In *Broken Door*, Lang uses constant meter changes in each bar to manipulate the length of pitches. These meter changes are patterned, and Lang repeats the same chain of meter changes four times throughout the piece. Each large section consists of one repetition of the metric pattern. It is possible to categorize each meter used in *Broken Door* within one of two categories: measures divisible by five and measures indivisible by five. For example, the first four bars consist of a $5/8$ measure, a $15/16$ measure, a $5/4$ measure, and a $15/8$ measure, each of which would fit into the category of measures divisible by five. The following meter in m. 5, however, is $2/4$, which would fit into the second category. An example of this pattern can be seen in figure 24.

Figure 24: *Broken Door* (mm. 1-4)⁸³

An analysis of meter throughout the entire work reveals the following pattern, as shown in Table 13.

The letter “A” marks each measure with a meter divisible by five, while the letter “B” marks each measure that is not divisible by five.

Table 13: *Broken Door*, meter pattern

mm. 1-64	AAAABAAAABAAAABAAAABBAABABABAABBABBABABABBAABBABB ABBABBABBBBBBBB
mm. 65-130	AAAABAAAABAAAABAAAABBAABABABAABBABBABABABBAABBABB ABBABBABBBBBBBB
mm. 131-196	AAAABAAAABAAAABAAAABBAABABABAABBABBABABABBAABBABB ABBABBABBBBBBBB
mm. 197-262	AAAABAAAABAAAABAAAABBAABABABAABBABBABABABBAABBABB ABBABBABBBBBBBB

As table 13 shows, each section features an identical metric pattern, the only difference being in the second and third sections, which both include two extra bars.

These rapid metric shifts allow Lang to imply changes in tempo while maintaining a steady pulse. For the majority of the work, Lang uses a continuous line of sixteenth notes, which allows a sense of security within the smallest element of the pulse. However, due to changing meter, the duration of each pitch changes, causing one's sense of the larger pulse to vary from measure to measure. This element of the work also depends on process. Each measure of the piece (with the exception of several measures in the second and fourth sections) consists of two pitches. In each measure, the two pitches oscillate back and forth. The major variable in this process is how many times each pitch is repeated. For the entirety of the work, Lang sticks with the same process in this area,

⁸³ David Lang, *Broken Door* (New York: Red Poppy Music, 1998): 2.

which can be shown in the first seven measures, as shown in figure 25.

Figure 25: *Broken Door* (mm. 1-8)⁸⁴

The image shows a musical score for the first eight measures of 'Broken Door' by David Lang. The score is written on two staves. The top staff is marked 'lyrical and hard as fast as possible' and 'not too loud'. The bottom staff is marked 'sim.'. The music consists of a series of repeated notes in a specific rhythmic pattern. The notes are repeated in a way that creates a growing and shrinking large beat pattern. The first measure has two repeated notes, the second has three, the third has four, and the fourth has six. The pattern then returns back on itself. The fifth measure repeats each pitch four times, the sixth measure repeats each pitch three times, and the seventh measure repeats each pitch twice. The eighth measure repeats each pitch once. The notes are repeated in a way that creates a growing and shrinking large beat pattern. The first measure has two repeated notes, the second has three, the third has four, and the fourth has six. The pattern then returns back on itself. The fifth measure repeats each pitch four times, the sixth measure repeats each pitch three times, and the seventh measure repeats each pitch twice. The eighth measure repeats each pitch once.

In the first measure, each pitch is repeated twice before moving. The second measure repeats each pitch three times, the third measure repeats each pitch four times, and the fourth measure repeats each pitch six times. The pattern then returns back on itself. The fifth measure repeats each pitch four times, the sixth measure repeats each pitch three times, and the seventh measure repeats each pitch twice. This pattern of growing and shrinking large beats continues throughout the work. At the end of each section (and throughout the fourth section), each pitch is no longer repeated with sixteenth notes; however, the pattern remains the same, as Lang simply substitutes two sixteenth notes for one eighth note, three sixteenth notes for one dotted eighth note, etc. There is one exception to this rule, which occurs during the transition from the first section to the second section in mm. 64-65. In this case, Lang brings the durational pattern to its longest variant (two dotted quarter notes in m. 64); however, instead of methodically shrinking the large beat, he reverts directly back to the smallest variant of the durational pattern in m. 65.

Up until this point, the linear pattern has been analyzed as just that; a singular line. However, in the case of a pitch-based analysis, it is best to consider the line as a combination of two voices. By approaching the pitches in this manner, one is able to expose two distinct patterns. The entire work uses

⁸⁴ Ibid.

a (02459E) pitch-class set. However, neither voice plays all of these pitches. The lower voice only utilizes a (2459E) pitch-class set, while the upper voice uses a (0245E) pitch-class set. The lower voice changes pitch for each measure, always reciting a repeated three-pitch pattern. The upper voice changes at a slower pace, often repeating the same pitches for multiple measures at a time. However, it also has a pattern during each section. The following tables show the pitches used by both voices in each section of *Broken Door*. Each pitch class represents one measure, and the spaces are inserted to more easily delineate the pattern.

Table 14: Broken Door, section 1 (mm. 1-64)

Upper Voice	4422EEE0022 44222EE00022 444222EEE000222 444222EEEE000222 44422222EE
Lower Voice	25E 2

Table 15: Broken Door, section 2 (mm. 65-130)

Upper Voice	4422EEE0022 44222EE00022 444222EEE000222 444222EEEE000222 44422222EEEE
Lower Voice	25E

Table 16: Broken Door, section 3 (mm. 131-196)

Upper Voice	554422222 4422000 5554422 555444222000EE 5554442222 55544422200000EEEE
Lower Voice	592 25E 25E

Table 17: Broken Door, section 4 (mm. 197-262)

Upper Voice	4422EE0022 4422EE022 44EEEE022 422E0
Lower Voice	25E 25E 25E 25E 25E 25E 20E 252 24E 45E 2EE 5E2 5E2 522 5E4 5E2 2EE 5E2 EE0 502 0E2

As shown in the previous tables, the first and second sections are identical to one another in pitch content, meter, and rhythm. The lower voice repeats a (25E) pattern, while the upper voice plays a (42E02) pattern with a varying degree of repetitions per pitch. The only differences between the first

and second sections are the two extra measures at the end of the second section and an accented third voice in the second section, which occasionally appears below the lower of the two initial voices. This voice repeats a (524) pattern three times over the course of the section. The third section differs in pitch material from the first two sections; however, the pitches are organized in a similar way. The lower voice repeats a (592) pattern until the last six measures, in which Lang reverts back to the initial (25E) pattern. The upper voice repeats portions of a (5420E) pattern, which is only fully realized twice throughout the section.

During the final section, Lang's pattern begins to become clouded, particularly regarding patterns within the pitch content. While the metric pattern remains identical with the earlier sections, Lang no longer adheres to his previously strict pattern of using at least two pitches per measure (one pitch per voice). In the fourth section, there are multiple instances of measures using only one pitch, which makes it difficult to determine which pitches belong to the respective voices. The previous pitch analysis of the fourth section considers each occurrence of a measure with one pitch as a part of the lower voice. This analysis fits with the rest of the piece, as the upper voice continues to repeat the (42E02) pattern with varying degrees of repetition for each pitch, while the lower voice repeats the (25E) pattern until it slowly devolves towards the end of the piece.

Boy

Boy was composed in 2001 in celebration of the 75th birthday of Hans Werner Henze. This piece, like much of Lang's solo piano music following the completion of the *Memory Pieces*, is a short work based off of one main theme. In this case, Lang bases the work off of the arpeggiated material in the right hand established during the first bars of the work. While varied in contour and pitch content, this material remains rhythmically consistent throughout the piece. Marked in 3/4 meter, Lang writes groups of eight consecutive eighth notes separated by one quarter-rest for the entirety of the work. This motive is slightly altered by eighth-note rests during the second half of the piece; however, the basic

rhythmic structure remains the same. While this material is later joined by extra voices and is harmonically altered, it remains the crux of the composition throughout.

Boy consists of two major sections, each of which feature highly related material and textures based upon the initial right-hand figure established at the opening of the work. The first section spans from mm. 1-68, and the second section spans from m. 69 to the end of the work. The second section can be further compartmentalized based upon a major modulation, which occurs in m. 112. The pitch collections and arrangement of pitches differ in these two major sections. In mm. 1-27, the right-hand arpeggiated pattern switches between (0357) and (0257) pitch-class sets in every repetition of the pattern. The same figure from mm. 28-69 uses pitch collections that, while using the same pitch classes, do not emphasize the oscillation between pitch-class 3 and pitch-class 2 as strongly as the opening passage. During these measures, Lang continues to use an overall (02357) pitch-class set while slowly introducing pitch-class 6, a foreshadowing of the distinct change in pitch-class selection during the second section of the work. From m. 69 to the end of the work, Lang employs two transpositionally related pitch-class sets: (9E0234) and (023567). Instead of shifting back and forth between these two sets, Lang uses pitch-class set (9E0234) from mm. 69 – 111 and pitch-class set (023567) from m. 112 to the end of the work.

The rhythmic organization of the arpeggiated right-hand pattern in the second section of *Boy* is also altered. While this pattern was initially an unchanging series of eighth notes separated by one quarter rest in the first section, the second section features similar material with a moving eighth-rest. Beginning in m. 69, the right-hand arpeggiated pattern is interrupted by an eighth rest. This rest moves in a methodical process; the first pattern includes an eighth rest on beat one, the second pattern includes an eighth rest on the end of beat one, the third pattern includes an eighth rest on beat two, etc. Once the eighth note has been placed on every beat, Lang includes one complete right-hand arpeggiation pattern. This methodical placement of the eighth-rest creates a larger structure, as this process repeats itself

once per every nine repetitions of the arpeggiated right-hand pattern.

The organization of pitches in the right-hand arpeggiated figure in the second large section of *Boy* also differs from the earlier material. Like the material in the first section, the organization of pitches in the second section can be viewed in groups of eight pitches; however, because of Lang's introduction of the moving eighth-note rest, the analysis is slightly complicated. In order to identify the pattern at work, one must ignore the eighth-note rests and simply count the notes. Because of the eighth-note rests, the beginning of a collection of pitches no longer consistently coincides with the beginning of the right-hand arpeggiated figure. This method of analysis shows a pattern in pitch organization. The first pitch in each eight-beat collection, for example, consistently oscillates between pitch-classes 9 and E from mm. 69-110 and between pitch-classes 0 and 2 from m. 111 to the end of the work. Similar patterns occur in the second, fourth, fifth, and seventh beats of each collection. It is important to note that, although the pitch-class set utilized from mm. 69-110 and m. 111 to the end of the work is different, the organization of specific pitches remains the same. Table 18 shows the organization of pitches in both halves of the second half of *Boy*.

Table 18: Boy, organization of pitches (mm. 69-148)

Organization of Pitches: mm. 69-110	Organization of Pitches: m. 111- end of work
94304323	07637655
E2324343	25657676
9430432E	07637555
E2E24E4E	25657676
94E0402E	07537555
E2E24E4E	25657675
9400402E	07537555
E2E24E40	25657575
9400402E	07537555
E2E24040	25657575
9400402E	07537556
E2024040	25657575
9400402E	07537656
E2E24E4E	25357575
94E04322	07637656
E2224242	25657576
94304322	07637656

E2224443	
93304322	
E2224343	
94304322	
E2324343	

Table 18 shows the oscillation between pitches in specific beats of each eight-note phrase. In both sections, the first, second, fourth, and seventh pitches all consistently move back and forth between two pitches. The fifth pitch in every phrase remains the same throughout each section. In these beats with a specific pattern, the pitches used from mm. 69-110 share a T3 relationship with those used from m. 111 to the end of the work. The pitches used in beats three, six, and eight, however, do not feature a transpositional relationship between the two sections.

Boy is composed in what appears to be four voices. Indeed, throughout most of the work, there are four lines played at once; however, it is often difficult to determine which of the lower pitches belong to specific voices. This analytical discrepancy is caused by a closeness of range between the bass, tenor, and alto voices. While the soprano voice is consistently distinct, the lower voices are in close proximity with one another and are often difficult to differentiate. However, a closer analysis shows that the lower three voices do not behave in a typical polyphonic fashion. Instead, these three lower voices act as anticipatory or reactionary parts to the pitches in the soprano voice.

In the first section of *Boy*, these extra voices are reactionary. The right-hand pattern is established from mm. 1-13. This material is initially stated on its own with the lower voices joining in m. 14. The right-hand material from mm. 14-27 is identical to the right-hand material from mm. 1-13. As the left hand joins the right hand, a pattern emerges. Lang generates the left-hand material by allowing pitches from the soprano voice to trigger material in the left hand. From mm. 14-69, this left-hand material echoes each pitch for the duration of three repeated eighth-note beats one octave below the soprano pitch. Figure 26 shows this technique at work.

Figure 26: *Boy* (mm. 14-23)⁸⁵

This example shows Lang's method of arrangement in the left hand. The first soprano note in m. 14 is a pitch-class 0 on beat one. In the left hand, Lang writes three pitch-class 0 eighth notes one octave below the stated soprano pitch. The second soprano pitch (on the end of beat one) is a pitch-class 7. Again, Lang writes the same pitch an octave lower in the right hand, repeating it for three consecutive eighth-note beats. This pattern continues, as the left-hand pattern mimics the right-hand material, consistently elongating the right-hand arpeggiated pattern through repetition and the subsequent layering of pitches.

In the material from m. 69-148, the left-hand pitches are anticipatory. The left-hand material is a reflection of the right-hand pitches, and each iteration consists of three repeated eighth notes; however, these repeated notes now precede the right-hand pitches with a separation of two octaves instead of one. Figure 27 shows these changes in the pattern.

⁸⁵ David Lang, *Boy* (New York: Red Poppy Music, 2001): 1.

Figure 27: *Boy* (mm. 69-73)⁸⁶

The image shows a musical score for the piece 'Boy' from measures 69 to 73. It consists of three staves. The top staff is in treble clef, the middle in bass clef, and the bottom in bass clef. The music features a complex rhythmic pattern with eighth notes and rests. The word 'boy' is written below the bottom staff, and the number '3' is at the end of the score.

The left-hand pitches now precede the right-hand pitches by two eighth notes. It is also clear that the repetition of the left-hand pitches is no longer as reliable as the material in the first section of the work. The use of pitch-class 3 in the left hand in mm. 70-73, for example, is not consistent in its repetition, nor is the use of pitch-class 2 in mm. 70-71. This pattern (along with discrepancies) continues until m. 143, at which point the left-hand accompaniment drops out for two bars. The material in mm. 144-145 reverts back to a six-note variant of the initial right-hand arpeggiated pattern, which is directly followed by the first complete recitation of the left-hand pattern in the second section of the piece. The left-hand material in mm. 146-148 represents a full realization of the left-hand pattern in the anticipatory style employed in the second half of *Boy*, which had previously not yet occurred.

Cut

Cut (2002) was commissioned by the Venice Biennale for Carlo Boccadoro. A slow piece highlighting a dichotomy between soft triads and accented octaves, this work is markedly vertical and spacious. Lang's earlier music for solo piano consistently features counterpoint between voices with relatively small rhythmic durations. Even slower works with longer durations in individual voices feature the aural impression of shorter rhythmic duration, as the counterpoint between voices results in a relatively regular eighth-note pulse. Unlike these earlier works in which Lang consistently employs regular rhythmic values of short durations, *Cut* features a slow moving progression of trichords in the

⁸⁶ Ibid., 3.

middle register of the piano. Each of these trichords sounds for at least four complete quarter-note beats, sometimes lasting as long as sixteen quarter-note beats. The trichords, which are played at a *piano* dynamic throughout the work, are interrupted by accented octaves occurring every nine eighth-note beats. While the individual voices of these trichords are independently manipulated by process, the lack of polyrhythm between voices creates the sense of vertical homophony. The accented octaves create sympathetic vibrations from the held triad pitches, resulting in a quiet, shimmering effect.

Cut is structured in six twenty-bar sections with an extra thirteen-bar section at the end of the work. By analyzing and comparing the organization of pitches in each twenty-bar section, it is possible to identify Lang's process. While the juxtaposition of the triadic and octave material implies two distinct parts, it is beneficial to analyze the work in four linear voices. Each of the four voices in *Cut* use three pitches; however, in a style similar to *Wed*, one pitch-class per voice represents an interruptive pitch. In other words, each voice is focused around two pitches which are methodically interrupted by a third pitch. The soprano voice, which comprises the accented octaves, uses pitch-classes 4 and 5 as its main pitches, with pitch-class 7 acting as an interruptive pitch. The alto voice also uses pitch-classes 4 and 5 as main pitches and pitch-class 7 as an interruptive pitch. The main pitches for the tenor voice are 1 and 2 with an interruptive pitch 4, and the main pitches for the bass voice are E and 9 with an interruptive pitch T. In each voice, the two main pitches alternate back and forth. The interruptive pitches appear in either one, two, three, or four consecutive measures once per twenty-bar section in each voice (with the notable exception of the third and fourth sections in the tenor voice). In the bottom three voices, the interruptive pitches tend to appear at an interval of eighteen bars; however, there are exceptions. These exceptions occur in twenty-bar sections in which the interruptive pitch is sounded once (as opposed to two, three or four times). This occurs during the first section in the alto voice and the fourth section in the bass voice. In these cases, it appears that Lang has opted to omit the first interruptive pitch in favor of one of the main pitches. Were the single interruptive pitches preceded by

another interruptive pitch rather than one of the initial pitches, the pattern would be consistent in both cases. These interruptive pitches initially occur towards the end of each twenty-bar section and progressively move closer to the beginning of each section. Table 19 shows a chart of the pitch collections for the alto, tenor, and bass voices. Each number represents one measure, and each line represents one twenty-bar section.

Table 19: Cut, pitch collections for alto, tenor, and bass voices

Alto	Tenor	Bass
45554445554447555555	22221112211112221144	EEEE99EEE9999ETT9999
45554444557744555544	22221111221111224411	EEEE9EEEE99TTEE9999
44554444775544455544	1122111121111122211	99EE9EEEE9TT999E9999
44544477755544555544	22221111111122112211	EEE999EEETEE99EE9999
45557744445544555544	2222111222441111211	EEEE9ETTETEE99EEEE999
44775444455544555544	22221111444111112211	EEEETT99EEE999EE9999
7744445545554	2222224412221	EETTTT9EEEE9

As shown in table 19, the interruptive pitches in the alto, tenor, and bass voices move in a uniform fashion throughout the piece. During each twenty-bar section, the interruptive voices move progressively closer to the beginning of the twenty-bar phrase. While the third and fourth twenty-bar sections are missing interruptive voices in the tenor line, the interruptive voices return in the fifth line at the exact point where the established pattern mandates they should occur; in other words, imperfections in the process are a result of Lang's willingness to omit interruptive pitches, rather than a change to the form of the pattern.

The pattern of interruptive pitches in the soprano voice is identical to the pattern employed in the alto, tenor, and bass voices. Table 20 shows a chart of the pitch collections in the soprano voice.

Table 20: Cut, pitch collections in the soprano voice

Soprano
55544455444455577445
55544455444457755445
55544455444774555445
55544455477444555445
55544457754444555445
555447745544445554

Again, the interruptive pitches occur at a predictable pace in each twenty-pitch phrase. The interruptive pitches occur in pairs of two after every eighteen pitches. The notable difference between the soprano line and the rest of the pitches is affected by the different rate of speed at which the soprano pitches move. The soprano voice consists of accented octaves, which occur every nine eighth notes. This pattern results in one empty measure during each group of nine measures. The pattern is only applicable when the pitches are placed in groups of twenty; therefore, the interruptive pattern in the soprano voice takes place at a slightly slower pace than the pattern in the alto, tenor, and bass voices.

The soprano voice also differs from the lowest three voices in that it is substantially more regular in the organization of interruptive pitches as well as initial pitches. Unlike the lower three voices, which each feature at least one alteration to the process, the pattern of interruptive pitch entrances in the soprano voice occurs without any irregularities. The organization of the initial two pitches in the soprano voice is also more regular than the lower three voices. Table 21 shows the arrangement of the initial two pitches of each voice with the interruptive pitches removed (only the interruptive pitches occurring at the point dictated by the interruptive pitch pattern were removed). Extraneous interruptive pitches are still present. Initial pitches substituted for interruptive pitches have also been removed). A space is inserted between the ninth and tenth pitches to highlight the relationship between the first and second half of each line.

Table 21: Cut, organization of pitches with interruptive pitches removed

Soprano	Alto	Tenor	Bass
555444554 444555445	455544455 544555555	222211122 111122211	EEEE99EEE 9999E9999
555444554 444555445	455544445 544555544	222211112 211112211	EEEE9EEEE E99EE9999
555444554 444555445	445544445 544455544	112211112 111112211	99EE9EEEE 9999E9999
555444554 444555445	445444755 544555544	222211111 111112211	EEE999EEE E99EE9999
555444554 444555445	455544445 544555544	222211122 211112111	EEEE9EEEE E99EEE999
555444554 4445554	445444455 544555544	222211114 111112211	EEEE99EEE 999EE9999
	444455455 54	222222122 21	EETT9EEEE E9

The organization of the initial pitches in the soprano voice is organized and regular. All six lines are identical, and the second half of each line is an exact inversion of the first half. The organization of

initial pitches in the lower three voices, however, is not as consistent. The lower three voices do not use a predictable organization of initial pitches from one line to the next, nor do they consistently reflect Lang's use of inversions.

The Point

The Point is a short work composed in 2003. It was commissioned by the Kaufman Center in celebration of its fiftieth anniversary and dedicated to Charlotte Bush. Like many of Lang's earlier works for solo piano, *The Point* features the use of limited musical means to create its whole. In this particular case, Lang restricts himself to two ascending lines per measure. These ascending patterns (one in the left hand, one in the right hand) play identical pitches in the same register. The left-hand entrance is always delayed by one quarter-beat, creating an immediate echo effect for each gesture. This specific gesture and effect is strongly reminiscent of portions of Lang's *This Was Written By Hand*, another solo piano work composed in 2003.

The Point is comprised of three patterns, each pertaining to a specific element of the music. The organization of pitches, meter, and duration of each gesture are all derived from different processes. Lang uses a (0124579T) pitch-class set throughout the work. There is a particularly strong emphasis on subsets (0245), (1245), and (2457). These hexachords are repeated throughout the work in this order. Pitch-classes 7, 9, and 10 are introduced as Lang elongates each individual line. Lines with five notes use tetrachords (02457), (12457), and (24579), while lines with six notes use hexachords (024579), (124579), and (24579T).

While the organization of pitches in *The Point* is straightforward, Lang's manipulation of meter and the duration of each individual line create a heightened complexity. In this work, Lang uses two meters: 3/4 and 5/8. The 5/8 bars interrupt longer chains of 3/4 bars, usually occurring every six measures. There are, however, two instances (mm. 47-55 and mm. 92-100) where the 3/4 meter goes uninterrupted for nine bars. The work is further complicated by Lang's use of additive and subtractive

processes. The work features four, five, and six-note phrases. While the four note phrases do not overlap, the five and six-note phrases do, creating a brief counterpoint between the two hands, as shown in figure 28.

Figure 28: *The Point* (mm. 41-52)⁸⁷



Lang moves between four, five, and six-note phrases in a methodical fashion best understood by dividing the work into three-bar groups. In total there are forty three-bar groups in the work; however, they can be further grouped into five sections. These sections are mm. 1-24, mm. 25-48, mm. 49-69, mm. 70-93, and mm. 94-114. Table 22 shows the progression of four, five, and six-note phrases in each section.

Table 22: *The Point*, three-bar groupings in five sections

mm. 1-24	mm. 25-48	mm. 49-69	mm. 70-93	mm. 94-114
444	444	655	444	655
544	544	565	544	565
454	454	556	454	556
445	445	656	445	656
545	545	565	545	665
554	554	566	554	566
455	455	566	455	566
555	555		555	

As shown in table 22, each of the five sections is highly related. The first, second, and fourth sections are identical (as is the pitch arrangement for each of these sections). The third and fifth sections are nearly identical, save for some small discrepancies (the same goes for the pitch arrangement). The

⁸⁷ David Lang, *The Point* (New York: Red Poppy Music, 2003) 2.

process utilized in the first, second, and fourth sections moves from a three-bar collection consisting of three four-note phrases to a three-bar collection consisting of three five-note phrases. In order to achieve this growth, Lang methodically introduces five-note phrases within the three-bar sections. For the second, third, and fourth three-bar sections, he uses all possibilities consisting of two four-note phrases and one five-note phrase. In the fifth, sixth, and seventh three-bar sections, he uses every possible arrangement of one four-note phrase and two five-note phrases. The process arrives at three complete five-note phrases in the eighth three-bar section. The third and fifth sections follow a similar pattern. However, the third section does not completely realize all possible arrangements of two six-note phrases and one five-note phrase. This particular section is lacking a (665) three-bar section, which both interrupts the pattern and causes the third and fifth sections to differ slightly.

This Was Written By Hand

This Was Written By Hand was composed in 2003 for Andrew Zolinsky. This work is the longest and most frequently performed of Lang's published post-*Memory Pieces* solo piano compositions. In this work, Lang employs processes used in previous works; however, the length and form of the piece causes *This Was Written By Hand* to be his most substantial published piano work since the *Memory Pieces*.

This Was Written By Hand is composed in five main sections (mm. 1-80, mm. 81-121, mm. 122-201, mm. 202-262, and mm. 263-375). While the following analysis will show these sections to be highly related with processes that extend across formal barriers, the removal of left-hand passages in specific sections, as well as the entrance of a bass voice in the last section, imposes a clear and audible form to the work. The first and third sections of *This Was Written By Hand* are similar in texture and musical content. These two sections both feature ascending patterns of five sixteenth notes in the left hand. These ascending patterns are triggered by specific pitches in the right hand (pitch-classes 4 and 9 in the first section and pitch-classes 0 and 5 in the third section), causing them to overlap with one

another, creating a series of short canons. These left-hand passages in the first and third sections are identical in rhythm and contour but differ in pitch content. The right-hand material in the first and third sections features two right-hand lines in constant counterpoint with one another. The durations in both lines tend to be long, creating what Lang refers to as a “stuttered” rhythmic quality between parts.⁸⁸ The counterpoint between these two voices is present throughout the majority of the piece (the alto voice eventually disappears in m. 283). During the second and fourth sections, the two lines in the right hand continue in the same fashion as in the first and third sections; however, the left-hand ascending pattern drops out. The fifth section of *This Was Written By Hand* features similar right-hand gestures along with the entrance of a new bass voice and a significant shift in pitch collection.

While *This Was Written By Hand* features clear changes between sections, the two right-hand lines remain throughout the work. These two lines appear to be composed in two voices, but the right-hand material is actually based on a long rhythmic pattern on each pitch. From mm. 1-283 (the first two sections), the lowest right-hand voice consistently plays pitch-class 4 (with the exception of mm. 96-102, where pitch-class 4 is temporarily replaced by pitch-class 2). Table 23 shows the duration between each occurrence of these pitches. The numbers represent the quantity of sixteenth notes between the announcement of the pitch.

Table 23: This Was Written By Hand, durational pattern for pitch-class 4 (mm. 1-121)

Pitch-class 4, mm. 1-81 (section 1)
10, 12, 14, 8, 16, 13, 12, 3, 22, 14, 8, 2, 26, 15, 1, 7, 27, 10, 6, 6, 28, 4, 13, 4, 27, 2, 18, 2, 22, 8, 19, 17, 14, 18, 2, 10, 20, 17, 4, 3, 42, 2, 4, 28, 12, 3, 8, 27, 6, 8, 10, 14
Pitch-Class 4 (and 2), mm. 82-121 (section 2)
10, 12, 14, 8, 16, 13, 12, 3, 22, 14, 8, 2, 24, 2, 15, 1, 7, 27, 10, 6, 6, 28, 4, 13, 4, 27, 2, 8

As shown in table 23, the durational pattern of these pitches is nearly identical between the first and second sections. The only differences between the rhythmic quality of the lower voices of these sections are a few instances of longer durations being divided into two parts. The thirteenth and

⁸⁸ David Lang, *This Was Written By Hand* (New York: Red Poppy Music, 2003): 1.

fourteenth pitches in the second section, for example, feature durations of twenty-four sixteenth notes and two sixteenth notes, where as the same spot in the first section features one pitch with a duration of twenty-six sixteenth notes. Slight deviations such as this occur throughout the work; however, the changes in the lower right-hand voice are always minute and consistently return to the pattern.

The material in the upper right-hand voice is similarly structured to the lower voice. However, the upper voice consists of more pitches per section, so there are more durational patterns occurring at once. In section one, the upper voice plays pitch-classes 9, 11, and 0 (appearing in that specific order). The piece begins with pitch-class 9, followed by the addition of pitch-class 11 in m. 15, and the addition of pitch-class 0 in m. 32. Table 24 shows the durations between the occurrence of each pitch class. Repetitions of the durational pattern in individual voices are delineated by //.

Table 24: This Was Written By Hand, durational pattern for upper right-hand voices (mm. 1-121)

Pitch-Class 9, mm. 1-121 (sections 1-2)
9, 11, 15, 9, 15, 12, 13, 4, 21, 13, 10, 27, 13, 1, 3, 6, 27, 11, 4, 7, 28, 5, 11, 5, 28, 1, 17, 3, 23, 7, 18, 1, 18, 15, 18, 1, 31, 17, 3, 5, 25, 16, 3, 2, 29, 13, 2, 7, 28, 7, 7, 9, 16 // 9, 11, 15, 9, 15, 12, 13, 4, 21, 13, 10, 27, 14, 3, 6, 27, 11, 4, 7, 28, 5, 11, 5, 28, 1, 11
Pitch-Class 11, mm. 15-95 (sections 1-2)
9, 11, 15, 9, 15, 12, 13, 4, 21, 13, 10, 27, 14, 3, 6, 27, 11, 4, 7, 28, 5, 11, 5, 28, 1, 17, 3, 23, 7, 18, 1, 18, 15, 18, 1, 12, 19, 17, 3, 5, 25, 16, 3, 2, 29, 13, 2, 7, 28, 7, 7, 9
Pitch-Class 0, mm. 32-111 (sections 1-2)
9, 11, 15, 9, 15, 12, 13, 4, 21, 13, 10, 27, 14, 3, 6, 27, 11, 4, 7, 28, 5, 11, 5, 28, 1, 17, 3, 23, 7, 18, 1, 18, 15, 18, 32, 17, 3, 5, 25, 16, 3, 2, 29, 13, 9, 28, 7, 7, 9,

The durational patterns for each pitch-class set in the upper right-hand voice of the first and second sections are nearly identical to one another. Similar to the alto voice from sections one and two, these chains of duration are only dissimilar in a few instances, and the dissimilarities are always resolved within the subsequent durations. The thirteenth and fourteenth pitches in pitch-class 9, for example, are followed by durations of thirteen sixteenth notes and one sixteenth note, while the same position in pitch-classes 11 and 0 have durations of fourteen sixteenth notes (the sum of the two parts in pitch-class 9).

The left-hand material in the first section consists of an ascending five-note pattern consisting of pitch-classes 9, 11, 0, 2, and 4. This pattern often begins again before the previous line has concluded, creating a series of small canons. This process is shown in figure 29.

Figure 29: *This Was Written By Hand* (mm. 1-10)⁸⁹

In the first section, these ascending five-note patterns are triggered by pitch-classes 4 and 9 in the right hand. Each time either of these pitch classes is played in the right hand, the five-note ascending pattern in the left hand begins again. While the left-hand motion is more aurally substantial, it is completely controlled by the durational processes at work in the upper voices.

A substantial modulation occurs at m. 122, marking the beginning of the third section. While the first and second sections consisted entirely within the pitch-class set (9, E, 0, 2, 4), the third and fourth sections of *This Was Written By Hand* use pitches from the pitch-class set (4, 5, 9, E, 0, 2). While this pitch-class set is nearly a respelling of the set from the first and second sections (the only difference being the addition of pitch-class 5), the implication of a new tonal area by Lang's emphasis on pitch-classes 4 and 5 makes this modulation formally significant. In sections one and two, the pitch-class set is fully realized by the left-hand ascending pattern. This ascending pattern, as previously stated, plays the pitch-class set (9, E, 0, 2, 4) in ascending order, strongly suggesting the key area of A Aeolian. Furthermore, the use of pitch-class 9 in the highest register and pitch-class 4 in the middle register can be interpreted as an emphasis on the first and fifth scale degrees of the A Aeolian scale.

⁸⁹ Ibid.

In sections three and four, Lang employs a nearly identical compositional method in the implied key area of F Lydian. The initial prominent pitch in the highest voice (pitch-class 5) implies the first scale degree, while the middle register pitch (pitch-class 0) implies the fifth scale degree. The left-hand ascending pattern also strongly suggests F Lydian with a (5, 9, E, 0, 2) pitch-class set played in an ascending stepwise pattern. The modal key area of the third and fourth sections are further complicated by the addition of an extra pitch class to the set. While the first and second sections only utilize a pentachord, the third and fourth sections use a hexachord. In this case the first and second pitches of the pitch-class set (4 and 5) are interchangeable. As pitch-class 5 changes to pitch-class 4, a chord change is implied; the pentachord (5, 9, E, 0, 2) implies F Lydian, while the (4, 9, E, 0, 2) implies a return to a Aeolian.

While the pitch material differs between sections one and two and sections three and four, the durational patterns are identical, particularly in the lower right-hand voice. As shown in table 25, the durational patterns in the alto voice for the third and fourth sections are exactly the same (it should be noted that the alto line from mm. 203-282 bleeds into the fifth section, which begins in m. 262).

Table 25: This Was Written By Hand, durational pattern for pitch-class 0 (mm. 122-282)

Pitch-Class 0, mm. 122-202 (section 3)
10, 12, 14, 8, 16, 13, 12, 3, 22, 14, 8, 2, 24, 2, 15, 1, 7, 27, 10, 6, 6, 28, 4, 13, 4, 27, 2, 18, 2, 22, 8, 19, 17, 14, 18, 2, 10, 20, 17, 4, 3, 42, 2, 4, 28, 12, 3, 8, 27, 6, 8, 10, 12
Pitch-Class 0, mm. 203-282 (section 4 into section 5)
10, 12, 14, 8, 16, 13, 12, 3, 22, 14, 8, 2, 24, 2, 15, 1, 7, 27, 10, 6, 6, 28, 4, 13, 4, 27, 2, 18, 2, 22, 8, 19, 17, 14, 18, 2, 10, 20, 17, 4, 3, 42, 2, 4, 28, 12, 3, 8, 27, 6, 8, 10, 12

The durational pattern displayed in the alto voice in sections three and four are not only identical with one another, they are also the same as the durational pattern used in the alto voice for sections one and two. The only difference (aside from the slight anomalies previously discussed) is that the pattern is cut short in the second section to make way for the third section, while the fourth section completes the pattern by crossing over into the fifth section.

The durational pattern in the upper right-hand voices in the third and fourth section is also identical to the durational patterns of the first and second sections, as shown in table 26. Again, repetitions of the pattern within individual pitch classes have been designated by //.

Table 26: This Was Written By Hand, durational process for upper right-hand voices (mm. 122-335)

Pitch-Class 4 and 5, mm. 122-335 (sections 3-4)
9, 11, 15, 9, 15, 12, 13, 4, 21, 13, 10, 27, 14, 3, 6, 27, 11, 4, 7, 28, 5, 11, 5, 28, 1, 17, 3, 23, 7, 9, 9, 1, 18, 13, 18, 1, 12, 19, 17, 3, 5, 25, 16, 3, 2, 29, 13, 2, 7, 28, 7, 7, 9, 16 // 9, 11, 15, 9, 15, 12, 13, 4, 34, 10, 27, 14, 3, 6, 27, 11, 4, 7, 28, 5, 11, 5, 29, 17, 3, 23, 7, 18, 1, 18, 13, 7, 9, 2, 1, 8, 4, 11, 8, 16, 1, 3, 5, 3, 13, 4, 4, 1, 16, 3, 2, 8, 10, 11, 13, 2, 1, 6, 8 // 3, 6, 11, 7, 7, 2, 7, 4, 4, 7, 28, 5, 9, 5, 28, 1, 17, 3, 23, 7, 18, 1, 18, 13, 18, 1, 12, 15, 4, 17, 3, 5, 25, 16, 3, 2, 29, 14, 1, 7, 28, 7, 7, 9,
Pitch-Class 9, mm. 133-262 (sections 3-4)
9, 11, 15, 9, 15, 12, 13, 4, 21, 13, 10, 27, 14, 3, 6, 27, 11, 4, 7, 28, 5, 11, 33, 1, 17, 3, 30, 18, 1, 18, 13, 18, 1, 12, 19, 17, 3, 5, 25, 16, 3, 2, 29, 2, 7, 28, 7, 7, 9, 16 // 9, 11, 15, 9, 15, 1, 11, 13, 4, 21, 3, 10, 10, 27, 14, 3, 6, 27, 11, 4, 7, 1, 27, 5, 11, 5, 28, 1, 17,
Pitch-Class 11, mm. 145-266 (sections 3-4)
9, 11, 15, 9, 15, 12, 13, 4, 21, 13, 10, 27, 14, 3, 6, 2, 25, 11, 4, 7, 25, 3, 5, 16, 28, 1, 17, 3, 23, 7, 18, 1, 18, 13, 18, 1, 12, 19, 17, 3, 5, 25, 16, 3, 2, 29, 13, 2, 7, 28, 7, 7, 25 // 9, 11, 15, 9, 15, 12, 13, 4, 21, 13, 10, 27, 14, 3, 33, 11, 4, 7, 28, 5, 11, 5, 28, 1, 17
Pitch-Class 0, mm. 157-278 (sections 3-4)
9, 11, 15, 9, 15, 12, 13, 25, 13, 10, 27, 14, 3, 6, 27, 11, 4, 7, 28, 5, 11, 5, 28, 1, 17, 3, 23, 7, 18, 1, 18, 13, 18, 1, 12, 19, 17, 8, 25, 16, 3, 2, 29, 13, 2, 7, 28, 7, 7, 9, 16 // 9, 11, 15, 9, 15, 12, 13, 4, 21, 13, 10, 27, 14, 3, 6, 27, 11, 4, 7, 28, 5, 11, 5, 8, 20, 1, 17

The upper right-hand voices in the third and fourth sections employ the same durational process as those same voices in the first and second sections (while still including the previously discussed anomalies); however, there are some differences. The third and fourth sections feature more pitches in the upper right-hand voice than does the first or second sections. In the third and fourth sections, pitch-classes 4 and 5 are interchangeable and act as a singular voice in the durational pattern. There is also one more pitch (pitch-class 0) subjected to the durational pattern in the upper voice of the third and fourth sections. In other words, the third and fourth sections feature four upper right-hand pitches subjected to the durational pattern, while the first and second sections only have three.

These passages also differ from the first and second sections in that there are significantly more

anomalies in the third and fourth sections. While these anomalies occur at a more frequent rate, the pattern remains intact, as they simply represent a division of one of the original durations or the sum of two or more of the original durations. It is also important to note that the durational patterns in section four are longer than those in section two because the durational pattern in section four is not cut off by a modulation, as is the pattern in section two.

The fifth and final section of *This Was Written By Hand* does not occur as distinctly as the previous sections. The shift from sections one to two as well as from three to four are clear because of the loss of the left-hand ascending pattern as well as the repetition of the alto durational process. The distinction between sections two and three is particularly accentuated because of the recurrence of the left-hand ascending pattern as well as the abrupt modulation from A Aeolian to F Lydian. The fifth section features both the entrance of a new voice and a significant change in pitch collection; however, these changes do not occur abruptly, but rather creep into the texture, slowly replacing previously existing pitches with new ones. The pitch-class set from sections three and four is eventually replaced in the fifth section, which consists of a (5, 6, 7, 8, 10, 0) hexachord.

The fifth section begins in m. 263 with the entrance of a new bass line consisting of five pitches. As in the right-hand material from previous sections, each of these pitches operates within a durational pattern, as shown in table 27.

Table 27: This Was Written By Hand, durational process for bass voices (mm. 262-378)

Pitch-Class 5 (lower), mm. 263-378
368, 184, 184, 184
Pitch-Class 8 mm. 264-368
32, 32,
Pitch-Class 10, mm. 266-372
10, 10, 20, 10, 30, 40, 10, 30, 40, 40, 40, 10, 10, 20, 10, 30, 10, 30, 40, 40, 10, 30, 40, 40, 10, 30, 10, 10, 20, 10, 30, 40, 10, 30, 10, 10, 20, 10,
Pitch-Class 0, mm. 265-377
72, 7, 65, 7, 65, 72, 7, 7, 7, 7, 44, 7, 65, 7, 65, 72, 7, 7, 7, 7, 44, 7, 7, 58, 7, 65, 72, 7, 7, 7, 7, 7

Pitch-Class 5 (higher), mm. 265-370

58, 27, 29, 56, 56, 9, 9, 38, 56, 9, 47, 9, 47, 9, 9, 38, 56, 56, 9, 47, 9, 47, 56, 56,

The durational pattern for the bass pitches in the fifth section is unrelated to the durational patterns of the first four sections. Instead of being based on the same pattern but starting at different points, each durational pattern in the bass voice of the fifth section moves at a different rate. There are, however, some similarities between pitches. Aside from pitch-class 8, which consistently occurs on every thirty-second sixteenth note throughout the section, the durational process for each individual pitch includes one maximum duration and one minimum duration. In the case of the lower pitch-class 5, these two elements comprise the entirety of the durational process. In some cases, the maximum number is a multiple of the minimum number; in other cases, it is not. For example, the lower pitch-class 5 maximum duration (368) is exactly twice that of the minimum duration (184). In the case of pitch-class 10, the maximum duration (40) is four times that of the minimum duration (10). In this case, there are two other durations (20 and 30), both of which are divisible by the minimum duration. The durational processes of the higher pitch-class 5 and pitch-class 0 are slightly more complicated. For both pitches, the maximum duration is not divisible by the minimum duration; however, when viewed as a whole, all of the durational collections are related. In pitch-class 0, smaller groups of durations add up to 72, the maximum duration. Take, for example, the first six durations (72, 7, 65, 7, 65, 72). The first and sixth durations are 72, so no calculations are necessary. However, the sum of the second and third durations as well as the fourth and fifth durations is 72. This trend continues throughout the section. The same goes for the higher pitch-class 5 (aside from the first duration, which is either an error or a willing deviation from the process). The maximum duration is 56, and all subsequent durations add up to this integer. The second and third, durations for example, are 27 and 29, the sum of which are 56.

The right-hand material in the fifth section is initially dominated by the lingering pitches from the third and fourth sections. As the fifth section proceeds, upper right-hand pitches from the third and

fourth sections are removed (pitch-class 9 stops in m. 262, pitch-class 11 stops in m. 266, pitch-class 0 stops in m. 278), and they are replaced by the chromatic collection of pitch-classes 6, 7, and 8 (pitch-class 6 enters in m. 272, pitch-class 7 enters in m. 267, and pitch-class 8 enters in m. 279). These three pitch classes operate in counterpoint with one another using a modified version of the durational process from the upper right-hand voices in sections one through four. These pitch classes are also in counterpoint with pitch-classes 4 and 5, which carry over from sections three and four until m. 335.

Table 28 shows the modified durational process from the upper voices in section five. A representation of the standard durational process from the first four sections of the work is included along with the durational processes used in pitch-classes 6, 7, and 8. The marking *////* delineates the point at which the two diverging patterns return to a unison point. In the case of pitch-class 7, for instance, the first three durations are identical to the standard durational process; however, the fourth duration (53) is not identical to the standard durational process. Instead it is the sum of the 4th, 5th, 6th, 7th, and 8th durations of the standard durational process (9, 15, 12, 13, and 4). These two durational processes take the same amount of time to complete; pitch-class 7 simply features a smaller amount of pitches. The marking ** delineates the point at which the two diverging patterns return to the standard durational process, but not at the same point. At the end of the durational process of pitch-class 7, the durational pattern realigns with the standard durational process with durations 7, 28, and 7; however, the sum of the previous durations in pitch-class 7 is not equivalent to the sum of the durations preceding durations 7, 28, and 7 in the standard durational process.

Table 28: This Was Written By Hand, durational process in upper right-hand voices (mm. 267-356)

Standard Durational Process (markings in conjunction w/ pitch-class 7, mm. 267-359)
9, 11, 15, 9, 15, 12, 13, 4 <i>////</i> 21, 13, 10, 27, 14, 3, 6 <i>////</i> 27, 11, 4, 7, 28, 5, 11, 33 <i>////</i> 1, 17, 3, 30, 18, 1 <i>////</i> 18, 13, 18, 1, 12, 19, 17, 3 <i>////</i> 5, 25, 16, 3, 2, 29, 2 <i>\\\\</i> 7, 28, 7, 7, 9, 16
Pitch-Class 7, mm. 267-359
9, 11, 15, 53 <i>////</i> 21, 13, 10, 8, 15, 12, 13, 2 <i>////</i> 27, 11, 4, 31, 14, 3, 8, 28 <i>////</i> 1, 17, 1, 28, 5, 11, 7 <i>////</i> 18, 13, 16, 2, 21, 7, 18, 6 <i>////</i> 5, 25, 15, 1, 11, 19, 19 <i>\\\\</i> 7, 28, 7, 8, 2, 29, 13, 51, 9,

Standard Durational Process (markings in conjunction w/ pitch-class 6, mm. 272-346)
9, 11, 15, 9, //// 15, 12, 13, 4, 21, 13, 10, 27 //// 13, 1, 3, 6, 27, 11, 4, 7 //// 28, 5, 11, 5, 28, 1, 17, 3 //// 23, 7, 18, 1, 18, 15, 18, 1, 31, 17, 3, 5, 25, 16, 3, 2, 29, 13, 2, 7, 28, 7, 7, 9, 16
Pitch-Class 6, mm. 272-346
//// 15, 12, 13, 75 //// 14, 3, 55 //// 28, 5, 11, 54 //// 23, 25, 51, 12, 19, 17, 52, 2, 29, 13, 51, 9,
Standard Durational Process (markings in conjunction w/ pitch-class 8, mm. 279-356)
9, 11, 15, 9, 15, 12, 13, 4 //// 21, 13, 10, 27, 13, 1, 3, 6 //// 27, 11, 4, 7, 28, 5, 11, 5 //// 28, 1, 17, 3, 23, 7, 18, 1 //// 18, 15, 18, 1, 31, 17, 3 //// 5, 25, 16, 3, 2 //// 29, 13 //// 2, 7, 28, 7, 7, 9, 16
Pitch-Class 8, mm. 279-356
9, 11, 15, 53 //// 21, 13, 10, 50 //// 27, 11, 4, 56 //// 28, 1, 17, 52 //// 18, 15, 18, 52 //// 5, 25, 16, 49 //// 7, 28, 7 ////

As shown in table 28, the durational processes for pitch-classes 6, 7, and 8 in section five are highly related to the durational processes for upper right-hand pitches in sections one through four. The durational process for pitch-class 8 is the mathematical equivalent of the standard durational process, while pitch-classes 6 and 7 are very similar but include unresolved deviations from the standard durational process. The mathematical inaccuracy at the end of pitch-class 7 has already been discussed. Pitch-class 6, while initially concurrent with the standard durational process (although it does not include the first four durations), strays from the initial process after the 14th duration (51).

The processes at work in *This Was Written By Hand* are certainly in line with the rest of David Lang's solo piano oeuvre. While his emphasis on durational process in this work is substantially more complicated and less transparent than in previous works, his manipulation of duration in *This Was Written By Hand* is reminiscent of other processes employed in *Broken Door* or *The Point*. The left-hand ascending patterns from sections one and three are also quite similar to those used in *The Point*, while the right-hand dictation of left-hand entrances is highly related to the similar process employed in *Boy*. While the process driven nature of *This Was Written By Hand* is congruent with Lang's earlier works for solo piano, his use of form (or at least the implication of form) in this particular work sets it apart. All of Lang's previous works for solo piano (with the exception of *While Nailing at Random*)

consist of one basic texture throughout the piece. While the same processes permeate much of *This Was Written By Hand*, Lang creates formal boundaries through modulation and the addition or subtraction of substantial musical motives.

Hard Hit

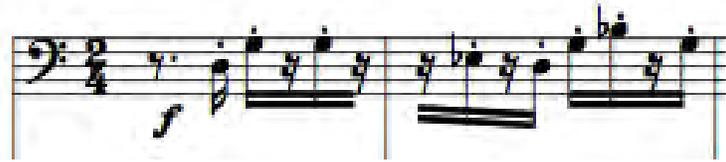
Hard Hit, Lang's most recent work for solo piano, was composed in 2012. The work was commissioned by and dedicated to Robert Blocker, a concert pianist and the dean of the Henry and Lucy Moses Dean of Music at Yale University. While *Hard Hit* marks Lang's first composition for solo piano since 2003, it is similar to earlier works in its process-based construction. Like earlier works, *Hard Hit* is comprised of several processes working at once; some of these processes are identifiable through analysis, while others remain hidden.

Hard Hit is comprised of three large sections, each of which exhibits highly related material. The first section (mm. 1-69) features a right-hand line comprised of mostly sixteenth notes and sixteenth rests and a left-hand line comprised of eighth notes and eighth rests. The second section (mm. 70-137) features lines comprised of sixteenth notes and sixteenth rests in both hands, and the third section (mm. 138-205) features sixteenth notes and sixteenth rests in the right hand and eighth notes and eighth rests in the left hand. Each section consists of an exact repetition of the pitch material of the right-hand line from mm. 1-69. This line is repeated four times throughout the work and dictates the form of *Hard Hit*.

The line initially stated in the right hand from mm. 1-69 recurs in the left hand from mm. 70-137, the right hand from mm. 70-137, and the right hand from mm. 138-205. These reiterations of the initial line are identical in rhythm and pitch; however, each recurrence enters one octave higher than the previous line and begins at a different point within the bar. The only exception to this pattern is the statement in the left hand from mm. 70-137, which is an exact repetition of the initial statement of the line. Because each new statement of the line begins at a different point within the bar (with the

exception of the left hand line from mm. 70-137), different beats are emphasized in different sections. The initial line begins with the first two sixteenth notes acting as a sixteenth-note pick up to beat two and beat two, as shown in figure 30.

Figure 30: *Hard Hit*, sixteenth-note line (mm. 1-2)⁹⁰



The second iteration of the line in the right hand features the same pitch material in the same rhythm. However, due to the placement of the beat, the first two sixteenth notes comprise the second and third sixteenth beats of the second full beat of the measure, causing the third sixteenth note to land on the downbeat. This new placement within the bar can be seen in figure 31.

Figure 31: *Hard Hit*, sixteenth-note line (mm. 71-72)⁹¹



The final statement of this line places the first two sixteenth notes as the second and third sixteenth notes of the first full beat of the measure, which causes the third sixteenth note to be placed squarely on beat two, as shown in figure 32.

Figure 32: *Hard Hit*, sixteenth-note line (mm. 138-139)⁹²



Because each reiteration of the line is placed at a different point within its initial bar (with the exception

⁹⁰ David Lang, *Hard Hit* (New York: Red Poppy Music, 2012): 1.

⁹¹ *Ibid.*, 3.

⁹² *Ibid.*, 5.

of the statement in the left hand), each occurrence of the line, while identical in rhythm and pitch, will be performed with different rhythmic nuances.

The left-hand material during the first and third sections is highly related to the corresponding right-hand lines in pitch and rhythm. In both cases, the left-hand line uses identical pitches as the right-hand line; however, because the left-hand line moves at half the pace of the right-hand line, the left-hand line typically uses fewer pitches per bar. This relationship between the two hands can be seen in figure 33.

Figure 33: *Hard Hit* (mm. 1-5)⁹³

As shown in figure 33, the pitches used in the left-hand line are identical to the first pitches from the same measure in the right-hand line. The bar line causes the left-hand line to reset, so the overall left-hand line for the first and third sections is only a fragmented representation of the initial right-hand line. This quality also causes the left-hand lines of the first and third sections to differ in pitch content.

The left-hand lines in the first and third sections are also rhythmically related to their counterparts in the right hand; however, this relationship is not as concrete as the relationship between pitches. As figure 33 shows, the left-hand line moves at exactly half the rate as the right-hand line. In some cases, the left-hand rhythm mirrors the exact rhythm from the right hand at exactly half the rate. Mm. 2 and 5, for example, feature a left-hand rhythm that is precisely the same as the rhythm in the first quarter beat of the right hand. In m. 2, the second and fourth sixteenth notes in the first beat of the right hand become the second and fourth eighth notes in the left hand. In m. 5, the second, third, and fourth sixteenth notes in the first quarter beat of the right hand become the second, third, and fourth

⁹³ Ibid., 1.

eighth notes in the left hand. This pattern is not applicable in mm. 1, 3, or 4. This discrepancy suggests there are more processes at work.

While the repetitive arrangement of the initial right-hand line in *Hard Hit* establishes both a pattern and musical form, the processes dictating the more minute elements of the work are complex and unidentifiable. The arrangement of pitches and rhythms of the initial right-hand line are derived from processes, but, according to Lang, these processes are impossible to identify without a pre-existing knowledge of his original material. In a September 2012 email correspondence with me, he wrote:

You know there is a pattern there, but you are never going to figure it out! There are always ranges of patterns functioning in my pieces, at any given moment. What I have been doing a lot of lately is forcing one pattern to collide with another and what you get is the result. This particular piece is clearly in three sections, each with the same sixteenth note pattern, up an octave each time, "harmonized" differently - not really harmonized but accompanied. The sixteenth-note line you play, however, is the tip of an iceberg. I started with a running, perpetual motion, sixteenth-note arpeggio pattern that has its own logic governing it, and I collided it with a pattern to add rests. All the rests in the sixteenth-note pattern, all the stuttering, is the result of a pattern I superimposed on the arpeggios that replace certain notes with rests. It is a different pattern but the same idea of the rests that interrupt the melody in *Beach*. There is a pattern to write notes down and a pattern to erase notes and they get smashed together.⁹⁴

Like *Beach*, *Hard Hit* uses base content which, through a series of processes, is transformed into the final musical product. Without knowing the initial line, it is impossible to identify the patterns and process at work through analysis. This quality of Lang's compositional method speaks strongly towards his desire to avoid transparency of process in his music. While process is an essential element in Lang's compositional language, its purpose is to limit his palate, not to dominate the subject matter or aesthetic of the work.

Outliers

Aside from the *Memory Pieces* and the short form post-*Memory Pieces*, David Lang has two more compositions for solo piano: *While Nailing at Random* (1982) and *Psalms Without Words* (2001).

⁹⁴ David Lang, email message to author, September 5, 2012.

Both of these works differ from Lang's typical short-form solo piano compositions in that they are significantly more substantial in length and pianistic difficulty. Both works are also composed in a markedly different style from the *Memory Pieces* or the shorter works from 1997-2012. While the bulk of Lang's solo piano music is comprised of short vignettes with little to no formal development, *While Nailing at Random* and *Psalms Without Words* are longer with substantial formal development.

While Nailing at Random

While Nailing at Random (1982) is David Lang's first published work for solo piano. Written while Lang was studying at Yale, this work is best viewed as a student composition. It substantially differs from the style and compositional method employed by Lang in his mature pieces, which first appeared (in regards to solo piano music), a decade after *While Nailing at Random* with the beginning of *Memory Pieces*. The work was written for Jon Kimura Parker, but it was not premiered until 1988 by Casey Sokol.

While Nailing at Random consists of three basic thematic ideas, which Lang cycles through many times over the course of the work. The first thematic idea is a series of repeated clusters played at a *fortissimo* dynamic. These clusters are played in rhythmic unison in both hands. The pitches in both hands change by a whole-step or a half-step one at a time; left-hand pitches and right-hand pitches never move at the same time. This thematic idea can be seen in figure 34. The numbers above the clusters are included to aid the performer in identifying the moving voice within the cluster.

Figure 34: *While Nailing at Random*, thematic motive 1/3 (m. 6)⁹⁵

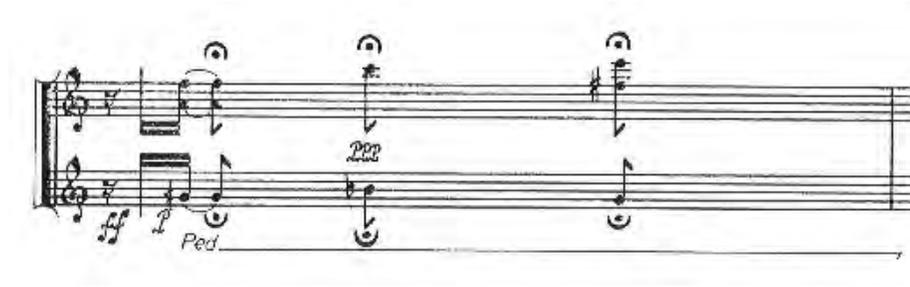


The second thematic idea in *While Nailing at Random* features a sustained single pitch or three-note chord played at a *piano* dynamic. These notes/chords are always marked with a fermata and followed

⁹⁵ David Lang, *While Nailing at Random* (New York: Red Poppy Music, 1990): 3.

by either a half-note rest with a fermata or another *piano* chord of the same ilk. Aside from the chords/notes that are preceded by the same type of gesture, these thematic ideas always precede a *fortissimo* cluster by exactly one sixteenth note. As the piece progresses, some of these sustained chords are accompanied by short, accented notes in the bass. Examples of this addition to the motive can be found in mm. 11 and 19. An example of this thematic idea can be seen in figure 35. In this particular instance, there are several *piano* chords in a row.

Figure 35: *While Nailing at Random*, thematic motive 2/3 (m. 7)⁹⁶



The final thematic idea in *While Nailing at Random* consists of a series of flourishes of a single line. These lines are always marked with a crescendo from *piano* to *fortissimo*, and they always climax at the impetus of the first thematic idea, the *fortissimo* unison clusters. These lines are notated as eighth notes with slashes, indicating the passage should be played as fast as possible, or with feathered beaming, indicating the passage should begin slowly and increase in tempo as it progresses. This thematic idea can be seen in figure 36.

Figure 36: *While Nailing at Random*, thematic motive 3/3 (m. 3)⁹⁷



This particular motive also exists with extra voices during mm. 12 and 20. In these two instances, the

⁹⁶ Ibid.

⁹⁷ Ibid., 1.

flourish is accompanied by bold, *forte* notes moving in an ascending or descending linear pattern. In m. 12, there is one bold line playing pitch-class set (1, 3, 4, 5, 6, 7, 8, T) in ascending order. In m. 20, there are two bold lines. The upper line plays pitch-class set (E, 0, 1, 3, 4, 5, 7, 8, T) in ascending order, and the lower line plays pitch-class set (7, 9, T, 0, 1, 2, 3, 4, 5, 7, 8, 9) in descending order. An example of this addition to the third motive can be seen in figure 37.

Figure 37: *While Nailing at Random*, thematic motive 3/3 (m. 20)⁹⁸



The third thematic motive is also punctuated by *fortissimo* accents and phrase markings throughout the work.

These three thematic motives comprise the entirety of *While Nailing at Random*. They always occur in the same order, but at varying degrees of length for each motive. The only exception to this rule occurs in mm. 16-17, which features an iteration of the first motive, followed by the second motive, followed again by the first motive (in place of the third motive). The arrangement and length of the thematic movements are key elements in establishing form in *While Nailing at Random*. The juxtaposition of loud, vertical clusters, space, and rapid flourishes are both audibly and visually apparent. While the work does not adhere to any traditional forms, the arrangement of these three thematic motives supplies the performer and listener with tangible formal boundaries.

Much of *While Nailing at Random* is vastly different from Lang's later works for solo piano. In

⁹⁸ Ibid., 9.

this piece, Lang is highly controlling of dynamics and musical expression. Unlike later works, in which he rarely uses expressive markings, this work features a wide variety of dynamic markings, articulations, and phrase markings. The piece is also lacking in a regular pulse, unlike all of his other solo piano music. While the unison cluster chords are very rhythmic, Lang's use of fermatas and feathered beaming directly prohibits the establishment of a steady tempo or pulse. Lang also elects to forgo the use of meter in *While Nailing at Random*. Instead, each measure consists of a different length, and bar lines only exist to mark a return to the beginning of the patterned thematic motion. These deviations from Lang's typical style can be expected, as *While Nailing at Random* is a student composition. However, it is also important to note that this work was substantially influenced by the music of Karlheinz Stockhausen, particularly *Klavierstück IX* (1961)

When asked about the relationship between *While Nailing at Random* and *Klavierstück IX*, Lang said:

My piece is only metaphorically related to the Stockhausen, but that piece is clearly the source of a lot my material. The pounding dense chord, the minimal, pulsing repetition, the way it uses the decrescendo as an organizing principle (although in my piece that become the crescendo at the end), etc. I wasn't trying to copy the piece exactly but I was doing what all good students do - change just enough of something that interested me so I could delude myself into thinking that I was doing something new....⁹⁹

Indeed, Lang's thematic motives are all closely tied to Stockhausen's composition. Each of Lang's three thematic motives is based upon similar gestures from *Klavierstück IX*. As shown in figure 38, Stockhausen also begins his work with a long series of repeated chords.

⁹⁹ Lang, "Larson Interview."

Figure 38: *Klavierstück IX*, repeated chords motive (mm. 1-2)¹⁰⁰

The image shows a musical score for Klavierstück IX, measures 1 and 2. The tempo is marked as ♩ = 160. The time signature is 142/8. The score consists of two staves, treble and bass clef. The music features a series of repeated chords. A handwritten note in German reads: "Akkord 139* in regelmäßigen Abständen: dimin. ganz kontinuierlich ohne Rücksicht auf nicht ansprechende Tasten bei geringer werdender Intensität." Below the staff, there are dynamic markings: *ff*, *f poco a poco diminuendo*, *pppp*, *ff*, and *f poco a poco diminuendo*. There are also markings for "1. P." and "LP".

Stockhausen's repeated chord motive features a long diminuendo over the course of each repetition, which Lang's score lacks. Stockhausen also maintains the same pitches for the duration of each repeated chord motive. While the pitch collections for the repeated chord occasionally change from one section to another, Stockhausen does not change pitches within series of repeated chords. Lang's second thematic gesture, consisting of a soft, sustained chord directly preceding a loud pitch or chord is also present in Stockhausen's score, as shown in figure 39

Figure 39: *Klavierstück IX*, soft sustained chord motive (m. 17)¹⁰¹

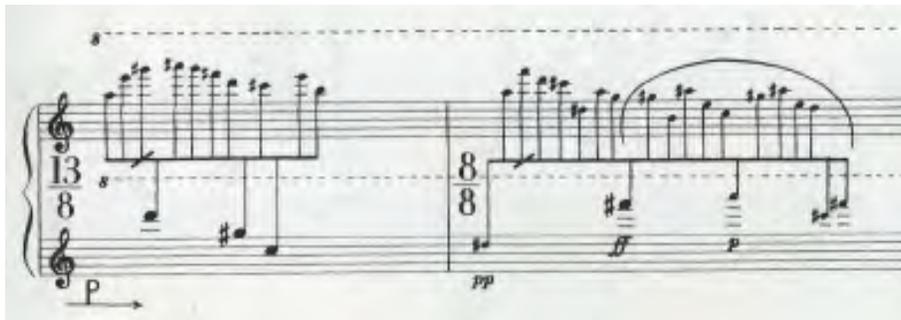
The image shows a musical score for Klavierstück IX, measure 17. The tempo is marked as ♩ = 60. The time signature is 21(13+8)/8. The score consists of two staves, treble and bass clef. The music features a soft, sustained chord motive. There are dynamic markings: *ppp*, *ppp*, and *ppp*. There are also markings for "P" and "P".

Again, Stockhausen's use of this motive differs from Lang's, as Stockhausen does not include fermatas. Lang's use of flourishes as thematic material is also derived from Stockhausen's score, as shown in figure 40.

¹⁰⁰Karlheinz Stockhausen, *Klavierstück IX* (London: Universal Edition, 1967): 1.

¹⁰¹ibid.

Figure 40: *Klavierstück IX*, flourish motive (mm. 121-122)¹⁰²



Lang's flourish motives are quite similar to Stockhausen's. Both composers use the slashed eighth-note notation, indicating the pianist should perform the passage as fast as possible. Stockhausen, however, includes further instruction in the score, stating:

Small notes... should be played “as fast as possible.” They should be articulated clearly and not quasi arpeggiated. Therefore they must be executed more slowly in the lower registers than in the upper. The various intervallic leaps within groups of small notes should result in a differentiation of the actual intervals of entry.¹⁰³

In his score, Lang neglects to specify articulation or the necessity of clarity over speed. Both composers also insert *fortissimo* dynamic markings to emphasize specific notes.

Lang's manipulation of form in *While Nailing at Random* is also quite similar to the form employed in Stockhausen's *Klavierstück IX*. In 1961, at the time *Klavierstück IX* was composed, Stockhausen was in his “moment form” period. Stockhausen had completed *Kontakte* (1959-1960) during the previous year and published an article, “Momentform,” which, according to Jonathan Kramer in his article “Moment Form in 20th Century Music,” was “an explication of moment form in *Kontakte*, his first self-conscious moment form.”¹⁰⁴ Moment form describes a work composed of unrelated motives, or “moments.” According to Kramer:

A proper moment form will give the impression of starting in the midst of previously unheard music, and it will break off without reaching any structural cadence, as if the music goes on, inaudibly, in some other space or time after the close of the performance.... Moments are defined as self-contained entities, capable of standing on their own yet in some sense belonging to the context of the composition. They may

¹⁰²Ibid., 6.

¹⁰³Ibid., 8.

¹⁰⁴Jonathan Kramer, “Moment Form in 20th Century Music,” *The Music Quarterly* Vol. 64 no. 2 (April, 1978): 179.

comprise a static entity, such as a harmony, that lasts throughout the moment, or they may contain a process that completes itself within the moment.¹⁰⁵

This method of arrangement was essential to Stockhausen's compositional process during the early 1960s, and it is also employed by Lang in *While Nailing at Random*. Each of the three thematic motives can be considered as individual moments because none of the three motives show any aesthetic or constructional relationship with one another. While the third motive often crescendos into the first motive, creating a relationship between the two moments, this technique was also used by Stockhausen in *Klavierstück IX*.

While the formal arrangement of *While Nailing at Random* and *Klavierstück IX* is highly related, Lang's use of moment form does not rigidly adhere to the guidelines established by Stockhausen. Kramer observes:

That the order actually be arbitrary is an extreme requirement; in many moment-form pieces complete mobility” (or even any partial mobility) of form is avoided. Nonetheless, the order of moments must appear arbitrary for the work to conform to the spirit of moment form. This apparent arbitrariness even applies to the return of previous moments. Stockhausen forbids return in his articles, but it is to be found in *Kontakte* and more overtly in his other works.¹⁰⁶

Lang's particularly rigid and ordered structure of moments in *While Nailing at Random* is far from arbitrary. His regular movement from motive one to motive two to motive three is predictable, and the audible return of material goes against Stockhausen's written definition. However, as Kramer points out, Stockhausen also broke these rules, albeit in a much less overt manner.

While Nailing at Random differs from the majority of David Lang's solo piano music in aesthetics, form, and a variety of notational differences. A student piece influenced by the works of Karlheinz Stockhausen, *While Nailing at Random* is an enlightening look at Lang's developmental compositional style, but it is far from the aesthetic of his mature works for solo piano from the 1990s and 2000s.

¹⁰⁵Ibid., 180-181.

¹⁰⁶Ibid., 181.

Psalms Without Words

Psalms Without Words is by far Lang's most substantial work for solo piano. The work, commissioned by San Francisco based pianist David Arden, is about two hours in length and is based on the rhythmic qualities of spoken Hebrew. According to Lang's statements from an interview with Mark Alburger, the piece was initially born out of Arden's desire to record an album of Lang's solo piano music. He said:

Originally it was not a whole evening, he wanted just a whole album. He said, "Do you have enough piano music for a record?" That was how it started. And not wishing to let anything easy slip by (because "of course I had enough piano music for a whole record!") -- for some reason, I talked him into commissioning a new piece -- which was this ridiculous project, which I had wanted to do for a very long time, which is to set the entire book of Psalms, in Hebrew, for an instrument.¹⁰⁷

The work is structured in the same pattern as the Psalms themselves. According to Lang:

When you read the Psalms in Hebrew, they're already divided into different categories and groupings. There are divisions into days and a larger division into books. There are five books. I'm trying to maintain all of the divisions. The interesting thing is that the days don't line up with the books. Day Eight does not line up where Book One changes to Book Two, and that is reflected in the music. Everything I've inherited I'm trying to do. I'm setting the descriptions. I'm trying to keep it as real as possible. I will probably have to set the prayer you say before the Psalms and the prayer you say after, because I just don't see how you can play the piece without that.¹⁰⁸

Because of the formal nature of the written Psalms, *Psalms Without Words* is much more formally organized than Lang's other works for solo piano. It is also unique in that the rhythmic qualities of the piece are not derived from process. Instead, the rhythms of *Psalms Without Words* are based entirely upon the cadence of Lang's speech while reciting the Psalms in Hebrew. As Lang puts it, "I sang all the rhythms in Hebrew and gave them notes. It's an actual transcription of every single syllable in Hebrew of the first two books of the Psalms."¹⁰⁹ Rather than creating a numeric pattern for the rhythmic process, the rhythms in *Psalms Without Words* are derived from a human source: Lang's own voice.

¹⁰⁷Alburger, "Bang on an Ear," 13.

¹⁰⁸Ibid., 14.

¹⁰⁹Lang, "Larson Interview."

Unfortunately, *Psalms Without Words* has only been performed once (by Andrew Zolinsky), and the score remains unpublished and unavailable to the public. Initially the unavailability of the work was caused by contractual stipulations between the composer and commissioner; however, now that the period of exclusivity has passed, Lang has another reason to keep the work private. In an April 2012 interview, he told me:

It's only been played once because the pianist I wrote it for basically changed his career. He decided he's an educator and decided he wasn't going to do it. He gave me permission to do it once (Andrew Zolinsky performed it), but then the commissioner revoked the permission. Now the commission agreement is long out of date, but I've made the decision that I'm going to start writing posthumous pieces. I feel like this piece is really good, and I started thinking... I don't want to be like my teacher, Jacob Druckman. He died, and now no one plays his music anymore. So there it is. This is my first piece in my posthumous catalogue. You can see the score, but you'll have to wait... hopefully for a long time.¹¹⁰

While this reasoning may seem strange, it makes more sense when one considers how much importance Lang places on pieces of remembrance. In an interview with John Schaefer, he called the act of composing music in honor of the memory of the deceased “one of the most noble things that happens in music.”¹¹¹ It makes sense that the composer of the *Memory Pieces* would reserve one for himself.

Psalms Without Words is an important work for Lang, both because of its close tie to Judaism as well as the music of Steve Reich. In an interview with Mark Alburger, Lang explains importance of the Psalms in his personal life.

My understanding of Hebrew was not very good, even though I went through Hebrew school and was bar mitzvahed. I consider myself to be someone who's trying to figure out how involved with religion I want to be. It's an important issue to me, even though I'm not a hugely religious person. But to figure out the right relationship is important to me. All the time growing as a Jewish boy in Hebrew school named "David," who was a musician... The Psalms played a big part of my background. In that box that I took to my teacher when I was 13 were choral settings for many of the Psalms. It was something that was always presented to me. My parents didn't know anything about music. But here's a musician named "David" that they knew. So I learned about this very early. But I was never able to set psalms satisfactorily to music, and I've tried many times in my life to

¹¹⁰Ibid.

¹¹¹Lang, “Schaefer Interview.”

make something out of them.¹¹²

Musical settings of the Psalms are commonplace, and several examples can be found in the minimalist catalogue. Steve Reich has a wide collection of compositions with Jewish themes, including *Different Trains* (1988), *The Cave* (1993), and *WTC 9/11* (2010). Reich also has a work that deals directly with the Psalms; *Tehillim* (1981), the Hebrew word for Psalm, is a setting of Psalms 19:2-5, 34:13-15, 18:26-27, and 150:4-6 for four female voices and a mixed chamber ensemble. In an interview with Mark Alburger, Lang describes *Tehillim* as “one of the most incredible works ever written.”¹¹³ He goes on to discuss how he dealt with influence of Reich and *Tehillim* on *Psalms Without Words*.

When you hear a piece like *Tehillim*, which is so perfect and so exuberant... it's enough to scare you away from writing any music, let alone writing music about the Psalms. So when I came upon this idea, I became really happy, because I thought, "This is a way to improve my Hebrew, and dealing with this issue from a place of ignorance (which I have), and also avoiding all the relationships to other musical settings of the Psalms which scare me." I remember when I began to set the psalm which begins *Tehillim*, it paralyzed me, because I realized I had to do something which had nothing to do with Steve's setting. So I came up with something finally which I love. And when I listen to it now, I say, "Hmm, yeah, well that's where the Steve Reich is."¹¹⁴

As is true in much of Lang's music, the influence of Steve Reich is certainly present in *Psalms Without Words*. However, Lang's music, while informed by the techniques and aesthetics employed by Reich, is far from a re-writing of Reich's particular style.

112Alburger, “Bang on an Ear,” 14.

113Ibid.

114Ibid.

CHAPTER IV: CONCLUSION

The solo piano compositions of David Lang are clearly process driven works. Aside from *Psalms Without Words* and *While Nailing at Random*, his works in the genre are short, polished puzzles, each an example of Lang's use of process as a method of restricting harmonic and rhythmic material.

Unlike the early music of Steve Reich and Philip Glass, the music of David Lang does not use process as subject matter; the importance of transparency of process, while essential to Glass and Reich in the mid-1960s, does not play a role in David Lang's music. As a result, the processes at work in Lang's music are often hidden beneath the surface. Sometimes they are so subtle or complex that the processes are even difficult to identify through analysis. There are exceptions to Lang's hidden use of process, however. While many processes, such as the pitch organization in *Wed* or the durational process in *This Was Written By Hand*, are impossible to detect aurally, in some cases, there are instances of the process revealing itself. Some of the more simple processes, such as the rhythmic patterns in *Wed*, *Cello*, or *Beach* are easily identifiable at first listen, as is arrangement of motives in *Diet Coke*, or even the patterned left-hand passages in *This Was Written By Hand*. Even though some of these processes break the barrier of perceptibility, Lang still regards process as a tool through which to limit his compositional options. For Lang, the process represents both the scaffolding and wall paper, providing structure and a base aesthetic for each work.¹¹⁵ After the invention of the process, Lang still puts a great amount of thought into the selection of pitch classes and the direction he wants the piece to move. He also reserves the right to change notes and rhythms, even if they differ with the process, a method he likens to the twelve-tone compositions of Schoenberg.¹¹⁶

Lang's consistent use of process and repetition clearly ties him to the tradition of American

¹¹⁵Lang, "Larson Interview."

¹¹⁶ibid.

Minimalism, as do his use of pulse and shades of tonality. As discussed in chapter one and chapter two, the term “minimalism” is both controversial and broad; since the 1960s, the genre known as minimalism has branched out in many directions. While the early works of Philip Glass and Steve Reich were truly “minimal” in their use of material and process, composers (including Glass and Reich themselves) began to rebuild upon the stripped down aesthetic of the mid-1960s. By the mid-1970s, both Reich and Glass were composing works for large-ensembles on a massive scale. Glass's first opera, *Einstein On the Beach* (1976) is a four-act opera lasting over four hours. While the work still plays strongly on the stripped down aesthetic developed by Glass and Reich in the mid-1960s, it is far more complex and massive than Glass's *I+I* (1967) for performer and amplified table top, one of the most “minimal” offerings of the twentieth-century, predating *Einstein On the Beach* by less than a decade. According to Lang:

Minimalism was really only minimal for a couple of years. Once it got stripped down... once you have Philip Glass knocking on a table and doing additions of one and two, and once you have *It's Gonna Rain*... everybody stripped things down, and everybody saw what the trajectory was, and everybody got to this base place where there was four minutes and thirty-three seconds of nothing, and everybody after that moment had to build it back up. Really, the interesting thing is what they chose to build it back up with. It's like building a house. Everyone says, we're never going to live in a house again. We're going to live in nature with no house at all. Then, after a while, people realize they get cold and need to build something. If those people still want to be in a state of nature, what do they bring back? Basically, everyone since 1965 has been in the same job. We've stripped music down as far as it's going to go, and now its up to us to choose, item by item, what we need to build the musical culture back up again. And everybody solves that problem very differently. I don't think it's really healthy to say Reich and Glass built it back in the same way, because they didn't.¹¹⁷

After minimalism was reduced to its essence in the mid-1960s, composers who subscribed to the minimalist community began to slowly reintroduce musical elements into their compositions. The truly original minimalist compositional voices of the past fifty years have rebuilt upon the minimalist foundation using methods that are individually unique. Philip Glass has re-introduced traditional forms and ensembles, having composed nine symphonies and five string quartets since 1966. Steve Reich,

¹¹⁷Ibid.

although he has not reverted to traditional forms, also began to quickly rebuild his musical language, abandoning strict process after the initial tape compositions and acoustic phasing works. According to Lang:

Process in Steve's music lasts for about two years.... He wrote pattern music for a couple of years. He figured out what his sound world was, and then he did it by feel. He needed the process part for a couple years to figure out what the sound world was, what his mode of working was. After that he didn't need the processing, he had the whole sound world. Process music existed to help Steve figure out how to be simple and make a musical product that was direct.¹¹⁸

While Reich abandoned process based composition after two years, he continued to compose works with a stripped down aesthetic for several years, most notable *Four Organs* (1970). Over the course of his career, Reich continued to develop an emphasis on counterpoint, which can be traced back to early phasing works such as *Piano Phase* (1967) and *Violin Phase* (1967). Later works with a strong emphasis on counterpoint include *Vermont Counterpoint* (1982), *New York Counterpoint* (1985), *Electric Counterpoint* (1987), and *Cello Counterpoint* (2003). These works are typically performed by a soloist playing a single contrapuntal line with a series of recorded tracks playing complimentary parts; they can also be performed by ensembles of the same instruments. Reich has further built upon the use of electronics with his two string quartets. *Different Trains* (1988) and *WTC: 9/11* (2010) both feature one live string quartet performing with recorded string quartets and recorded voice tracks, which are the thematic basis for the musical material of both works.

Other composers have chosen to reintroduce more elements of traditional classical music into their own compositions. John Adams for example, has, over time, returned to the use of traditional forms, complex harmonies, and more traditional rhythmic formulas. Recent works, such as *Son of Chamber Symphony* (2007) are more akin to the neo-classicism of John Corigliano than recent works of Reich, Glass, or Lang. Contrarily, other composers have maintained a stripped down aesthetic, still relying on limited voices and placing a strong emphasis on pulse. Tristan Perich's compositions for

¹¹⁸Ibid.

acoustic instruments and one-bit electronics, for example, are closely tied to the restrictive qualities of early minimalism. His use of one-bit sounds significantly limits his sonic possibilities, while the pitch and rhythmic material in both the electronic and acoustic parts feature limited rhythmic and pitch material as well. Examples of these limitations can be found in *qsqsqsqsqqqqqqqq* (2009) and *Observations* (2008).

David Lang has approached the task of rebuilding music in his own way. While he has maintained the use of process as a way to limit his compositional possibilities, he has purposefully placed process in the background. Unlike early minimalist works like *It's Gonna Rain* or *Piano Phase*, in which transparent process is essential, Lang prefers for the process to be inaudible. Lang also uses fewer restrictions in his compositional language than the early minimalists. While pulse is an ever-present entity in his music, Lang often employs complex meters, polyrhythms, and chromatic pitch collections in his compositions. These elements of Lang's compositional style cause his music to be significantly more complex than most minimalist compositions from the 1960s. However, his music tends to be less aggressively complex than composers who Kyle Gann refers to as totalists. Composers such as Michael Gordon and Glenn Branca have created their own compositional voices in which chromaticism and polyrhythm are brought to a heightened level of complexity, often resulting in a high level of harmonic and rhythmic dissonance. Lang's music, while also including rhythmic and harmonic complexity, tends to develop more slowly, allowing the various rhythmic and harmonic complexities ample time to unfold in a clear and refined manner.

The solo piano works of David Lang are examples of the most process-based variant of his compositional language. His piano compositions from 1992 to 2012 are all heavily reliant on process. The form of most of the pieces is dictated by process, as they conclude once the process is finished, and the harmonic and rhythmic permutations in all of his solo piano works (with the exception of *While Nailing at Random* and *Psalms Without Words*) are also direct results of process. While the single form

solo piano work is not representative of much of Lang's compositional catalogue, an analysis of these works is useful in understanding his compositional language. Like Reich, who used process in order to develop a musical voice, Lang's heavy use of process in his solo piano music is an example of his craftsmanship. The solo piano compositions are laboratory pieces in which Lang experiments with a variety of processes and patterns. The results of these works provide him with a more detailed understanding of the inner workings of his own musical language, sharpening the tools he used to create *The Little Match Girl Passion* and other masterful works.

BIBLIOGRAPHY

- Adams, John. *China Gates*. New York: Associated Music Publishers, 1983.
- . *Phrygian Gates*. New York: Associated Music Publishers, 1983.
- Alburger, Marc. “Bang on an Ear: An Interview with David Lang.” *21st Century Music* Volume 7, No. 9 (September 2000): 1-15.
- Alburger, Marc. “La Monte Young to 1960.” *21st Century Music* Vol. 10 No. 3 (March 2003): 3-10.
- Battcock, Gregory (ed.). *Breaking the Sound Barrier. A Critical Anthology of the New Music*. New York: E.P. Dutton, 1981.
- Davidson, Justin. “A New New York School.” *New York Magazine* (March 20, 2011)
<http://nymag.com/arts/classicaldance/classical/reviews/new-composers-davidson-review-2011-3/>.
- Fink, Robert. “Elvis Everywhere: Musicology and Popular Music Studies at the Twilight of the Canon.” *American Music* 16 (1998): 135-179.
- Fulkerson, David. “The Pornography of Boredom. *David Fulkerson: Writings on Music*.
<http://christopherfulkerson.com/writingsonmusic.html>.
- Gann, Kyle. *American Music of the Twentieth Century*. New York: Schirmer Books, 1997.
- . “La Monte Young's *The Well-Tuned Piano*.” *Perspectives of New Music* Vol. 31, No. 1 (1993): 134-162
- . “Minimal Music, Maximal Impact” *New Music Box* (May 1, 2001)
<http://www.newmusicbox.org/articles/minimal-music-maximal-impact/>.
- . *Music Downtown*. Berkeley: University of California Press, 2006.
- Glass, Philip. *Solo Piano*. England: Chester Music, 1991.
- Gilbert, Peter. “The Challenges of New Thinking.” *Zeitschichten* (May 7, 2011)
<http://www.zeitschichten.com/2011/05/07/new-challenges/>
- Griffiths, Paul. *Modern Music and After*. 3rd ed. Oxford: Oxford University Press, 2010.
- Haskell, Barbara. *Blam! The Explosion of Pop, Minimalism and Performance 1958–1964*. New York: Whitney Museum of American Art, 1984.
- Heisinger, Brent. “American Minimalism in the 1980s.” *American Music* Vol. 7 No. 4 (1989): 430-447.

- Hitchcock, H. W. "Minimalism in Art and Music: Origins and Aesthetics." In *Classic Essays on Twentieth-Century Music*, edited by R. Kostelanetz and J. Darby, 303-319. New York: Schirmer Books, 1996.
- Johnson, Timothy. "Minimalism: Aesthetic, Style, or Technique?" *Music Quarterly* Vol. 78 No. 4 (1994): 742-773.
- Johnson, Tom. *The Voice of New Music: New York City 1972-1982 -- A Collection of Articles Originally Published by the Village Voice*. Eindhoven, Netherlands: Het Apollohuis, 1989.
- Kramer, Jonathan. "Moment Form in 20th Century Music," *The Music Quarterly* Vol. 64 No. 2 (1978): 177-194.
- Lang, David. "A Pitch For New Music." *Opinionator* (blog), *The New York Times*. (May 11, 2011) <http://opinionator.blogs.nytimes.com/2011/05/11/a-pitch-for-new-music/>.
- . *Boy*. New York: Red Poppy Music, 2001.
- . *Broken Door*. New York: Red Poppy Music, 1998.
- . *Cut*. New York: Red Poppy Music, 2002.
- . "David Lang Bio." Accessed August 24, 2012. <http://davidlangmusic.com/bio.php>.
- . "David Lang: Music." Accessed August 24, 2012. <http://davidlangmusic.com/music.php>.
- . "Donald Martin Jenni (1937-2006): A Remembrance." *New Music Box* (July 28, 2006).
- . *Hard Hit*. New York: Red Poppy Music, 2012.
- . "Interview with Hilary Hahn." *Sequenza 21* (January 3, 2010) <http://www.youtube.com/watchv=XsgNL8UYkTA>.
- . "Interview with John Schaefer." *New Sounds*, WNYC (July 9, 2009).
- . *Memory Pieces*. New York: Red Poppy Music, 2007.
- . *The Point*. New York: Red Poppy Music, 2003.
- . *This Was Written By Hand*. New York: Red Poppy Music, 2003.
- . *While Nailing at Random*. New York: Red Poppy Music, 1990.
- Mertens, Wim. *American Minimal Music*. New York: USA by Pro/Am Music Resources Inc., 1983.
- Nyman, Michael. *Experimental Music: Cage and Beyond*. New York: Cambridge University Press, 1999.

- OneBeat. "About OneBeat." Accessed August 24, 2012. <http://www.1beat.org/about/>.
- Oteri, Frank, Richard Kessler, Fran Richard. "Interview with David Lang, Michael Gordon, and Julia Wolfe." *New Music Box* (May 1, 1999).
- Pelligrino, Catherine. "Aspects of Closure in the Music of John Adams" *Perspectives of New Music* Vol. 40 No. 1 (Winter, 2002): 147-175.
- Potter, Keith. *Four Musical Minimalists: LaMonte Young, Terry Riley, Steve Reich, Philip Glass*. London: Cambridge University Press, 2002.
- Potter, Keith and Philip Glass. Notes to *First Classics: 1968-1969*. England: Chester Music, 2010.
- Rae, Collin. "Sonically Sound and Pounding... A Discussion with David Lang." *Naxos Blog*. (March 31, 2009) <http://blog.naxos.com/2009/03/31/sonically-sound-and-pounding-a-discussion-with-david-lang/>.
- Reich, Steve. "Interview with Steve Reich by Jonathan Cott." *Steve Reich Interviews*. <http://steverreich.com/>.
- . "Questions from Anne Teresa de Keersmaecker & Answers from Steve Reich." *Steve Reich Interviews*. <http://steverreich.com/>.
- . *Writings on Music: 1965-2000*. New York: Oxford University Press, 2002.
- Riley, Terry. *Keyboard Study #1*. New York: Associated Music Publishers Inc., 1965.
- . *Keyboard Study #2*. New York: Associated Music Publishers Inc., 1965.
- Rockwell, John. *All American Music: Composition in the Late Twentieth Century*. New York: Alfred A. Knopf, 1983.
- Ross, Alex. *The Rest Is Noise*. New York: Farrar, Straus and Giroux, 2007.
- Schwarz, Robert. *Minimalists*. London: Phaidon Press Limited, 1996.
- Sheridan, Molly. "Sounds Heard: David Lang's 'The Little Match Girl Passion.'" *New Music Box* (June 8, 2009).
- Stockhausen, Karlheinz. *Klavierstück IX*. London: Universal Edition, 1967.
- Strickland, Edward. *Minimalism: Origins*. Bloomington: Indiana University Press, 1993.
- Taruskin, Richard. *Music in the Late Twentieth Century*. Oxford: Oxford University Press, 2010.
- Warburton, Dan. "A Working Terminology for Minimalist Music" *Intégral* Vol. 2 (1988): 135-159.



DATE: March 23, 2012

TO: Karl Larson

FROM: Bowling Green State University Human Subjects Review Board

PROJECT TITLE: [300809-2] The Solo Piano Music of David Lang

SUBMISSION TYPE: Revision

ACTION: APPROVED

APPROVAL DATE: March 22, 2012

EXPIRATION DATE: March 16, 2013

REVIEW TYPE: Expedited Review

REVIEW CATEGORY: Expedited review category # 7

Thank you for your submission of Revision materials for this project. The Bowling Green State University Human Subjects Review Board has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

The final approved version of the consent document(s) is available as a published Board Document in the Review Details page. You must use the approved version of the consent document when obtaining consent from participants. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Federal regulations require that each participant receives a copy of the consent document.

Please note that you are responsible to conduct the study as approved by the HSRB. If you seek to make any changes in your project activities or procedures, those modifications must be approved by this committee prior to initiation. Please use the modification request form for this procedure.

You have been approved to enroll 1 participant. If you wish to enroll additional participants you must seek approval from the HSRB.

All UNANTICIPATED PROBLEMS involving risks to subjects or others and SERIOUS and UNEXPECTED adverse events must be reported promptly to this office. All NON-COMPLIANCE issues or COMPLAINTS regarding this project must also be reported promptly to this office.

This approval expires on March 16, 2013. You will receive a continuing review notice before your project expires. If you wish to continue your work after the expiration date, your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date.

Good luck with your work. If you have any questions, please contact the Office of Research Compliance at 419-372-7716 or hsrb@bgsu.edu. Please include your project title and reference number in all correspondence regarding this project.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Bowling Green State University Human Subjects Review Board's records.