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A SURVEY AND COMPOSITIONAL APPLICATION OF DEVICES FOR IMPROVISATION
IN MODERN MUSIC

BY

ANDREW BINDER

SCHOLARLY ESSAY

Submitted in partial fulfillment of the requirements
for the degree of Doctor of Musical Arts in Music
with a concentration in Jazz Performance
in the Graduate College of the
University of Illinois Urbana-Champaign, 2022

Urbana, Illinois

Doctoral Committee:

Associate Professor Lawrence Gray, Chair and Research Director
Emeritus Professor Erik Lund
Professor James Pugh
Jason Finkelman

ABSTRACT

This paper surveys a selected number of distinct devices, approaches, and catalysts from which performers create improvised music, taken from works of modern jazz and contemporary classical circles. From there, I create my own composition of organized improvisation with the majority of material influenced directly by the specific examples initially observed. Finally, I compare and contrast characteristics of my work with the corresponding surveyed examples. The purpose of this project is to provide insight for composers and performers into organized improvisation through the observation, organization, and compositional demonstration of various types of improvisatory devices.

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INTRODUCTION

Improvisation can be an integral part of music making—whether as a learning tool, a composing process, or in performance. However, the act of improvisation can be difficult to analyze as most of the process heavily relies on intuition and experimentation. Pioneers of modern improvised music developed certain methods for approaching improvisation. The concept of modern improvisation or indeterminacy as a movement began during the late 1940s, with separate strands—one coming from the contemporary classical composers and the other growing out of the jazz and the African American tradition. African American composer, performer and scholar George Lewis expertly outlines the background and explains circles of improvising musicians at length in his essay “Improvised Music After 1950: Afrological and Eurological Perspectives.”¹

In the classical arena, John Cage was the primary figure for introducing indeterminacy in compositions, rebelling against the hyper-controlled approach of the modernists before him. He discussed this in depth in his essay *Composition As A Process* and in practice with chance operations in *Music of Changes*². Indeterminacy was a term established by Cage to refer to elements of a composition left up to chance or a performer’s interpretation.

Alongside Cage, Earle Brown, Morton Feldman and Christian Wolff explored indeterminacy in their compositions. These composers— in conjunction with the abstract visual artists like Jackson Pollock—were affectionately known as the New York School, and they directly applied similar visuals and abstract concepts into their scores. In the same way,

¹ Lewis, George E. “Improvised Music after 1950: Afrological and Eurological Perspectives.” *Black Music Research Journal* 16, no. 1 (1996): 91–122. <https://doi.org/10.2307/779379>.

² Cage, John.; and Gann, Kyle. *Silence : Lectures and Writings*. 50th anniversary ed. Middletown, Conn: Wesleyan University Press, 2011.

European composers such Luciano Berio, Karlheinz Stockhausen, and Cornelius Cardew would also push the boundaries of notated music, as shown in Cardew's entirely graphic score *Treatise*, Berio's *Laborintus* with indeterminate and improvised sections (even including a "jazz" section), and Stockhausen's interpretive text piece *Aus Den Sieben Tagen*.

It should be noted that during this time, jazz, being directly tied with improvisation, was not considered "serious music." Despite also relinquishing control to the performer and chance in his music, Cage was notoriously critical of jazz or improvisation along with other modernist composers of the same era. Ironically, other composers in Cage's circle— like Earle Brown and the New York School of artists—cited being directly influenced by jazz. In his essay, Lewis refers to it as being the "epistemological other" by the white modernist establishment.

Composer-improviser Anthony Braxton comments on Cage and his associates stating: "Both aleatory and indeterminism are words which have been coined ... to bypass the word improvisation and as such the influence of non-white sensibility."³

In the 1950s, jazz musicians were pushing boundaries by exploring improvising without chord changes or form for reference. In Joe Morris' book, "The Perpetual Frontier: Properties of Free Music," he outlines methods of several composer-improviser visionaries such as Anthony Braxton, Cecil Taylor, and Ornette Coleman. Cecil Taylor developed a method of "unit structures", where cells are given as a jumping off point for improvisers. "Harmolodics" are Ornette Coleman's philosophy in which all elements of music are equal, eliminating any common practices and streamlining music to pure expression. Anthony Braxton's approach "Tri-axiom Theory" codifies different types of sounds and gestures. European Free Improvisation practitioners were directly influenced by these figures and developed their own collective

³ Lewis, George E. "Improvised Music after 1950: Afrological and Eurological Perspectives." *Black Music Research Journal* 16, no. 1 (1996): 91–122. <https://doi.org/10.2307/779379>.

approach to improvisation, which included musicians such as guitarist Derek Bailey (author of *Improvisation*), bassist Barry Guy, multi-instrumentalist Lindsay Cooper, and saxophonist Evan Parker.

To help promote this music, groups of composer-improvisors were formed. Trumpeter and composer Bill Dixon formed the Jazz Composers Guild in New York in the mid-60s, with members Cecil Taylor, Archie Shepp, Sun Ra, Paul and Carla Bley, Rowell Rudd, John Tchicai, and others.⁴ The Guild was formed as a cooperative, a union of sorts to help secure avant-garde performance opportunities. Around the same time, the Chicago-based Association for the Advancement of Creative Musicians (AACM) was cofounded by pianist-composer Muhal Richard Abrahms and joined by others such as Anthony Braxton, Henry Threadgill, and George Lewis⁵. This group focused on the synthesis of composer and improvisor, while also being influenced by and pushing forward the African American artist's identity.

About a decade later, a combination of the Afrocentric qualities and Cage approach to time and spontaneity became the "downtown school", with composer-improvisors John Zorn, Fred Frith, Elliot Sharp and Ikue Mori to name a few.⁶ These musicians had their own distinct sound while also interacting with rock, jazz and pop culture.

All of these composers and composer-improvisors blurred the lines between fully-composed and fully-improvised music in some capacity, utilizing improvisation or indeterminate elements within their compositions, otherwise known as organized or guided improvisation.

Organized improvisation represents both the composer and performer's combined artistry. This

⁴ Benjamin Piekut (2009) Race, Community, and Conflict in the Jazz Composers Guild, *Jazz Perspectives*, 3:3, 191-231, DOI: [10.1080/17494060903454529](https://doi.org/10.1080/17494060903454529)

⁵ Lewis, George E. "Improvised Music after 1950: Afrological and Eurological Perspectives." *Black Music Research Journal* 16, no. 1 (1996): 91–122. <https://doi.org/10.2307/779379>.

⁶ Lewis, George E. "Improvised Music after 1950: Afrological and Eurological Perspectives." *Black Music Research Journal* 16, no. 1 (1996): 91–122. <https://doi.org/10.2307/779379>.

area between fully-improvised and fully-composed music is what I explore with my project, providing specific instructions or scores to performers to observe and create controlled improvisation.

My interest in this topic stems from my interest in jazz and contemporary classical music, with improvisation as a means to connect both idioms—much like the trailblazing composer-improvisors discussed above. First, improvisation is exciting because of the spontaneous “in-the-moment” invention. Because of this, each performance is unique. By design, improvisors are encouraged to integrate their identity into the piece, providing different compositional perspectives depending on who is performing. Interaction through improvisation enhances the communal music-making experience and puts an emphasis on the aural aspects of the art form. Organized improvisation also specifically interests me because of its puzzle and game-like aspects. Overall, improvisation emphasizes the human element and makes for a uniquely expressive experience.

For my master’s thesis, I composed a work for big band titled *Personaphrenia* as an exploration into using various kinds of organized improvisation within a major composition—utilizing jazz concepts but with a contemporary compositional lens. This current project is the next formal step on a journey to help organize, codify, and explore the possibilities of improvisatory concepts within a composition.

As a part of controlled improvisation, the performer is given concepts of varying specificity. For this project, I label these as “improvisatory devices,” which are approaches or catalysts provided to the performer before the act of improvisation. They can be as straightforward as a chord progression or as abstract and non-musical as a painting provided for

emotional inspiration. In both cases, the resulting improvisation is influenced by an external source: the improvisatory device. This is in contrast to completely free improvisation.

In Part I of this project, I have selected a variety of examples of improvisatory devices to explore. My primary goal was to find examples that would effectively present these in a concise and straightforward manner. About half of the examples were familiar to me prior to the start of the project, while the rest I discovered during research. The examples I selected include the work of several of the composers and composer-improvisors discussed above, including Earle Brown, George Lewis, Ornette Coleman, Karlheinz Stockhausen, and John Zorn. I've had previous interactions with some of the composers and music included, having both performed the music of Ornette Coleman, Dave Holland and Mary Halvorsson and studied under Marilyn Shlude and Dorothy Hindman. The remaining works were discovered over the course of my studies. I also include devices from my work *Personaphrenia* to supplement aspects of devices I did not find in my research. These examples are all organized into four categories I developed called Time, Matter, Orchestration, and Interaction. In addition to surveying examples of devices, these categories were used to help organize my own ideas into an original work directly inspired by them, which will be explored in detail in Part II. The work is written for a chamber ensemble of variable instrumentation that contains a wide variety of improvisatory devices related in some way to devices from the selected examples in Part I.

PART I: IMPROVISATORY DEVICES FROM SELECTED WORKS

CHAPTER 1: Overview of Categories

I have devised four categories called Time, Matter, Orchestration, and Interaction. The function of these terms is meant to group examples of improvisatory devices based on their fundamental traits. These traits are determined by what elements of the music are controlled by the composer versus elements left to the performer's discretion. For instance, if a work only provides the performer with a certain rhythm with which to improvise, this improvisatory device falls under the Time category as it controls a musical element that happens only in regard to time. These concepts are catalysts for the performers and not tied to the real time process involved with improvised music. My research will observe these elements that exist prior to music making. These categories, especially Orchestration and Interaction, are not necessarily always clear cut as some can occasionally overlap, but they are meant to be used as a tool to help organize and understand approaches to improvisation through improvisatory devices.

As for the categories, Time and Matter are the most specific and easiest to delineate. Time refers to devices that affect duration and iteration, whereas Matter devices affect sound objects (or any type of event, like in a theatrical piece for instance). Matter examples include parameters in relation to pitches, chords, and general sounds (e.g., extended techniques). These can theoretically be absent of time, unlike Time examples. Time examples can include specified rhythms through traditional notation, time markings, proportional notation, and repetitions (e.g., box notation). On a broader scale, manipulation of form falls into this category as well. These all must occur over a certain duration.

Orchestration is the control of instrumentation and determines what possible sounds and timbres are available for disposal within a musical work. A work that uses a choir will have

different sonic possibilities compared to a work for solo percussion. Some works call for a specific instrumentation while others can be for any instrument or performer. Determining which performers improvise when within a performance is also included in this category.

Interaction is the reaction of each performer to other stimuli, both external and internal. Other forms of expression that inspire music-making—such as poetry or visual art—are covered by this category. Specified reactions to other performers is also included, such as a direction to imitate or go against another performer's improvisation.

Some examples may fall under multiple categories based on different facets within each work, but they will be highlighted based on their most defining and applicable properties.

CHAPTER 2: Time Examples

2.1 Standard Notated Rhythms

Using standard music notation for rhythm is the most traditional approach for improvisational devices included within the Time category. *Workers Union* by Dutch composer Louis Andriessen and *Approximate* by eclectic rock fusion bandleader and composer Frank Zappa are good examples of this. Each piece provides a tempo marking alongside the specification of rhythms and contour of pitch. As a composer, Andriessen initially studied serialism but later would develop his own style of jazz and rock influenced minimalism.⁷ In *Workers Union*, Andriessen indicates in the score that the result is supposed to be “dissonant, chromatic and often: aggressive.” Combined with the rhythmic unison, the result is a persistent and relentless wall of sound.



Figure 2.1: Excerpt from Louis Andriessen’s *Workers Union*

Approximate by Zappa holds a similar character, but offers an open-ended approach with Zappa explaining:

“It can either be played with instruments, or you can sing it, or you can dance it. Any of the above, or none of the above, or either any or none of the above in combination, or in tandem, or anything that is suitable to you... The way this piece is constructed, each musician has a piece

⁷ Huizenga, Tom. “Louis Andriessen, Influential, Iconoclastic Dutch Composer, Dies at Age 82.” WVTF. WVTF, August 16, 2021. <https://www.wvtf.org/2021-07-01/louis-andriessen-influential-iconoclastic-dutch-composer-dies-at-age-82>.

of paper... and on the piece of paper... The group is rhythmically coordinated but the rest of it is every person for themselves.”⁸

The execution of *Approximate*'s rhythm and flexibility is the defining feature of the work. The use of rhythm in these works can be somewhat restrictive when it comes to improvisation, but this is also a large part due to the majority of the compositions being rhythmically notated in this way.

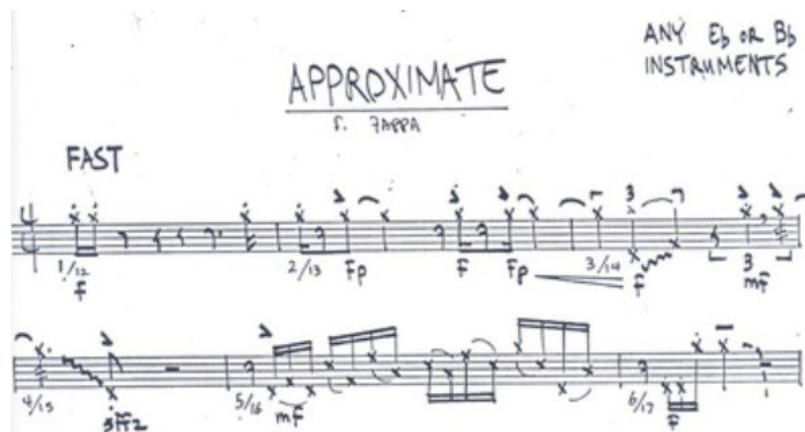


Figure 2.2: Excerpt from Frank Zappa's *Approximate*

As discussed previously, Zorn is a relevant and distinctly unique figure within the downtown scene of composers, known for his genre warping compositions and improvisations. His music often focuses on quick changes from one musical idea to the next. In contrast to Andriessen and Zappa, his piece *Road Runner* for solo accordion offers a short rhythmic motive upon which to improvise.⁹ There could be objections made to the practicality of this approximately one second length “improvisation” but, nonetheless, Zorn gives the performer a rhythmic idea as inspiration.

⁸ "Frank Zappa - Approximate (1974)." Andrea Di Biase. March 29, 2013. Video, https://www.youtube.com/watch?v=89LPVXrm_Ic&t=101s&ab_channel=AndreaDiBiase.

⁹ Zorn, John. *Roadrunner*.

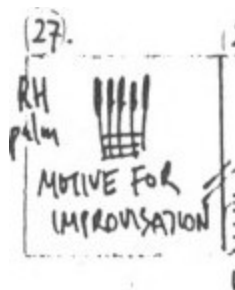


Figure 2.3: Excerpt from John Zorn's *Road Runner*

Danish saxophonist and composer John Tchicai was a fixture in the 60s avant garde scene, recording alongside John Coltrane on “Ascension” and “Mohawk”; “New York Eye and Ear Control” with Albert Ayler; and even with John Lennon and Yoko Ono on *Unfinished Music No. 2: Life with the Lions*.¹⁰ He founded or co-founded several contemporary improvisation ensembles, such as “New York Contemporary Five,” “New York Art Quartet,” “Cadentia Nova Danica,” and “John Tchicai and the Archetypes”. He also played with improvising greats Cecil Taylor and Archie Shepp. Similar to the Zorn example, but more the length of a rhythmic sentence than a word, one module of John Tchicai’s *Fields, Cows, and Flowers* lists a rhythmic line as a device. One person is instructed to create a melody in response to this rhythm that the other performers then copy.¹¹ Both Zorn’s and Tchicai’s approach do not include pitch contour, allowing for complete freedom in regard to pitch content.

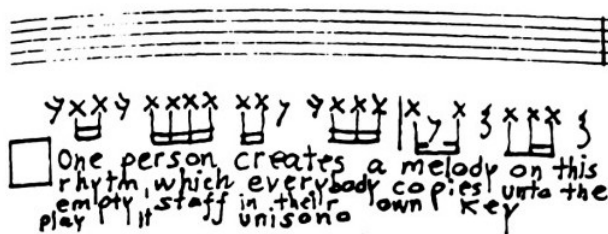


Figure 2.4: Excerpt from John Tchicai's *Fields, Cows and Flowers*

¹⁰“About John Tchicai.” JOHN TCHICAI, May 27, 2021. <https://johntchicai.com/about-john-tchicai/>.

¹¹ Sauer, Theresa. *Notations 21*. 1st ed. New York: Mark Batty Publisher, 2009.

Steve Antosca is a composer based in Washington, D.C. and is Artistic Director of the National Gallery of Art New Music Ensemble.¹² Antosca’s *One Becomes Two: “Persona 1 - Joy: Dancing In Space”* for violin and electronics is very similar to Andriessen’s approach to rhythm and pitch contour, but it lacks any meter or bar lines.¹³ Tempo markings and specific rhythms indicate a lack of meter but with some sense of rhythmic integrity—in addition to feathered beams and stretched proportions that suggest a loose approach with emphasis on gestures.

6
O
slowly, spaciouly
tr
pp
f
5
6
mf
f
p
gliss.
gliss.
ff

very fast and steady
pizz.
THICK DELAY
pp
poco a poco cresc.

6
P
arco
= 132 (or faster)
f
PB
p
pizz.
p
f
arco
jeté
pp
ff

ord.
f
PB
f
arco
LESS
strum
DELAY
L.V.

arco
sfp
f sub p
f
gliss.
sub p
mf
f
5
ff
freely
slow
fast
harmonic gliss.
ff
sfp
P
f

One becomes Two/concert v.26

Figure 2.5: A page from the score of Steve Antosca’s *One Becomes Two*

¹² Steve Antosca. Accessed September 9, 2022. <http://steveantosca.com>.

¹³ Antosca, Steve. “One Becomes Two”. United States: s.n.], 2007.

www.steveantosca.com/_files/ugd/f921e8_793b87a7ad4747e186dd52bbb307986.pdf accessed Sept 9 2022

2.2 Repetition

Workers Union includes another aspect of Time in its use of repeats. The score is littered with motivic fragments surrounded by repeat bars. In the score, Andriessen notes each group can be repeated as many times as desired, though with an average of two repetitions each and more than two if the fragment contains fewer notes. This creates a variability in the overall length and form of the piece with each performance.

Terry Riley is another pivotal minimalist composer, influenced by Indian classical music, jazz and rock music.¹⁴ His most well-known work *In C* consists of fifty-three melodic fragments to be read in order. However, in contrast to the entire ensemble like in *Workers Union*, each individual performer can decide how many times to repeat a fragment.¹⁵ Because of this, *In C* has a wide variety of possible overlapping fragments between instruments. Riley explains the compelling aspect of the piece in the score notes:

“One of the joys of *In C* is the interaction of the players in polyrhythmic combinations that spontaneously arise between patterns. Some quite fantastic shapes will arise and disintegrate as the group moves through the piece when it is properly played.”¹⁶

¹⁴ “Terry Riley Biography, Songs, & Albums.” AllMusic. Accessed November 20, 2022. <https://www.allmusic.com/artist/terry-riley-mn0000750519/biography>.

¹⁵ Riley, Terry. *In C*. United States: s.n., 1964.

¹⁶ Riley, Terry. *In C*. United States: s.n., 1964



Figure 2.6: Excerpt of Terry Riley's *In C*

Both *Workers Union* and *In C* share the variation in length with each performance depending on the number of repetitions.

Pennsylvania based composer Tina Davidson's *Never Love a Wild Thing* includes a rhythmically unison ostinato that branches off into other ostinatos. Repeats with arrows visually guide performers when choosing the length of repetition and their introduction of new material.

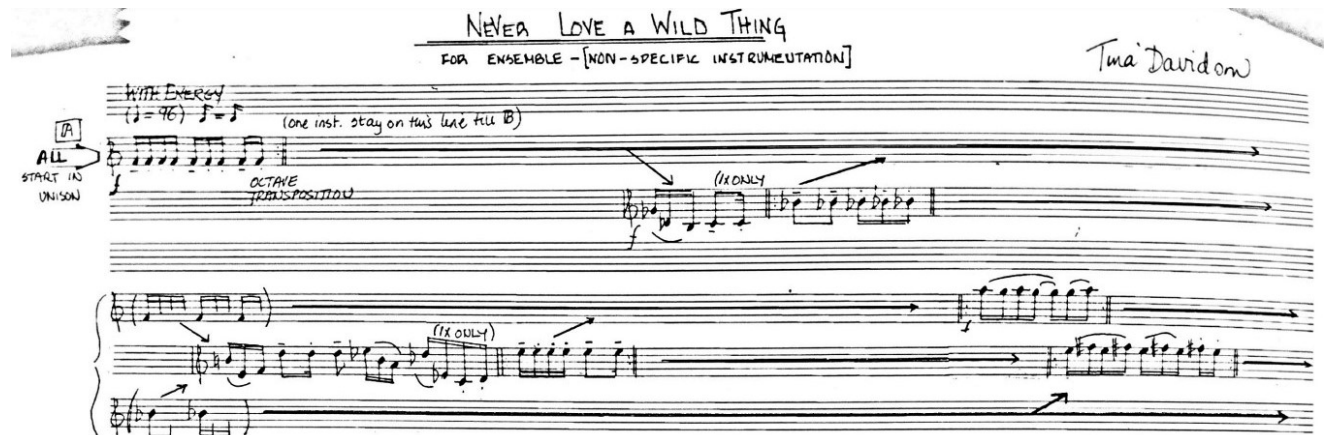


Figure 2.7: Excerpt of Tina Davidson's *Never Love A Wild Thing*

Repeat signs are used more with rhythmically geared and traditionally notated music as seen in the previous examples, and box are more associated with aleatoric music. Box notation is similar to repeats—but with more flexibility in notation and performance can also be used to repeat figures.

Dorothy Hindman is a Miami-based composer on faculty at the University of Miami, and her music often fuses elements of punk rock and spectralism.¹⁷ In Dorothy Hindman’s *Questions We Don’t Dare Ask Ourselves* each line of music spans ten seconds, with repeated boxed gestures for flute and percussion placed along the timeline.¹⁸

The image shows two parts of a musical score, labeled 1a and 1b. Part 1a is for Flute and Percussion. The tempo is marked as ♩ = 60. A timeline at the top shows a 10-second duration with a 1-second interval marked. The flute part is marked *ff* and includes the instruction "Loudly, flamboyantly, ignoring each other..." and "bird calls, piperish". The percussion part is also marked *ff* with the instruction "(balance with flute)". Both parts include boxed gestures and "ad lib." markings. Part 1b is for Flute (Fl.) and Percussion (Prc.). The flute part includes dynamic markings *mf* and *ff*, and the percussion part includes an "ad lib." marking. Both parts also feature boxed gestures and "ad lib." markings.

Figure 2.8: Excerpt of Dorothy Hindman’s *Questions We Don’t Dare Ask Ourselves*

The placement of the boxes indicates where the gesture starts, and the lines following indicate how long they are repeated. Above some of the lines is written “ad. lib.” inviting the performers to play variations on the boxed material. By notating in this fashion, Hindman indicates musical character and gesture to the performers through example but, at the same time, allows them to develop it. While the percussionist does have rhythmically active figures, there is no underlying pulse, and Hindman even specifies the piece should not “feel metered.” This method is not as strict as using metered rhythms and allows the musicians more creativity in expression.

¹⁷ Dorothy Hindman. Accessed November 20, 2022. <http://dorothyhindman.com/bio/>.

¹⁸ Hindman, Dorothy. *Questions We Don’t Dare Ask Ourselves*. N.A.

“It is not necessary nor desired that performers should be exactly synchronized with each other or precise with chronological durations. The performer’s emphasis should be on musically shaping each gesture so that it coexists with the other’s gestures and contributes to an overall texture of resonance and timbral complexity.”¹⁹

Tchicai’s *Fields, Cows and Flowers* indicates the number of repetitions for individual pairs of pitches.²⁰ These repetitions are the prime numbers 2, 3, 5 and 7. Using these numbers allows the composer to control which intervals sound more often while giving the performers freedom as to which intervals they play from the groups. This approach isn’t too different from repeat signs with numbered repetitions, but the main difference is the freedom from staff or meter.

A different type of repetition Time example is found in John Zorn’s improvisational game piece entitled *Cobra* where he offers instructions on “Sound Memory.” When signaled, the performers are to make a mental note of the music being performed at that time and then are called to reproduce it later on cue. Zorn has three separate cues for different sound memories, creating the option of multiple displaced repetitions. In the same way, George Lewis’s *Artificial Life 2007* has a record and playback function among a list of algorithmic like prompts for different interactive improvising groups. However, when “recording” the musicians must memorize a phrase from another group’s improvisation and then regurgitate it several times on Playback.

RECORD: Record or memorize a phrase from another group and save it in your personal memory for future use with the PLAYBACK instruction.

PLAYBACK: Repeat several times a phrase from another group that you previously memorized or recorded using the PLAYBACK instruction.²¹

¹⁹ Hindman, Dorothy. *Questions We Don’t Dare Ask Ourselves*. N.A.

²⁰ Sauer, Theresa. *Notations 21*. 1st ed. New York: Mark Batty Publisher, 2009.

²¹ Lewis, George. *Artificial Life*. New York, NY: C.F. Peters Corporation, 2007.

This piece echoes Lewis's original and since-updated 1987 interactive computer piece *Voyager*, a program that improvises and reacts to other performers in real time.²² Both Zorn's and Lewis's methods displace the repetition over time with indeterminate material and, in Lewis's piece, to a different group. This makes it more challenging to execute in comparison to the previous examples, but it has potential for an interesting result by displacing or recapitulating material.

2.3 Time Markings (Minutes/Seconds) and Duration

Tempo markings are traditionally used to indicate how fast a piece progresses in combination with time signatures. Outside of music, time is specified through seconds, minutes, and so on. Many contemporary aleatoric works use time markers to indicate a combination of when or how long gestures occur instead of stricter standard notation, as shown in Hindman's work above. The location of the boxes with lines show when to start and stop improvising. While time can be used as a fixed timeline proportionally, it can also be used in a simplified manner just to specify length of events.

Carl Bergstrom-Nielsen's *Frameworks 2* uses this approach with time markings. Danish composer, musicologist, and music therapist Bergstrom-Nielsen has written many works involving different types of improvisation or improvisatory games. He is a co-editor of the *Improvised Music—Open Scores* journal has several publications on the subject, including *Intuitive Music—A Mini Handbook* and an annotated bibliography on *Experimental Improvisation and Notation Practice 1945-1999*.²³ The score to his work *Frameworks 2* is

²² Walls, Seth Colter. "It's Alive! It's with the Band! A Computer Soloist Holds Its Own." *The New York Times*. *The New York Times*, August 22, 2022. <https://www.nytimes.com/2022/08/22/arts/music/time-spans-voyager.html>.

²³ Carl Bergstrom-Nielsen. Accessed November 20, 2022. <https://intuitivemusic.dk/intuitive/cbn.htm>

printed on a note card and acts similar to an outline. There is a selection of symbols that express each section's approximate length. There is a symbol for a very short section or short break each being less than five seconds, a medium break of five to ten seconds, and a short section being less than thirty seconds. The last symbol cues an entirely free section with no time limit. On the small score, he uses a combination of the section symbols with a specific number of one, two, or three sounds and some expressive descriptors. The use of time limits in contrast to a timeline allows more flexibility for performers while keeping the overall structure of events in place.

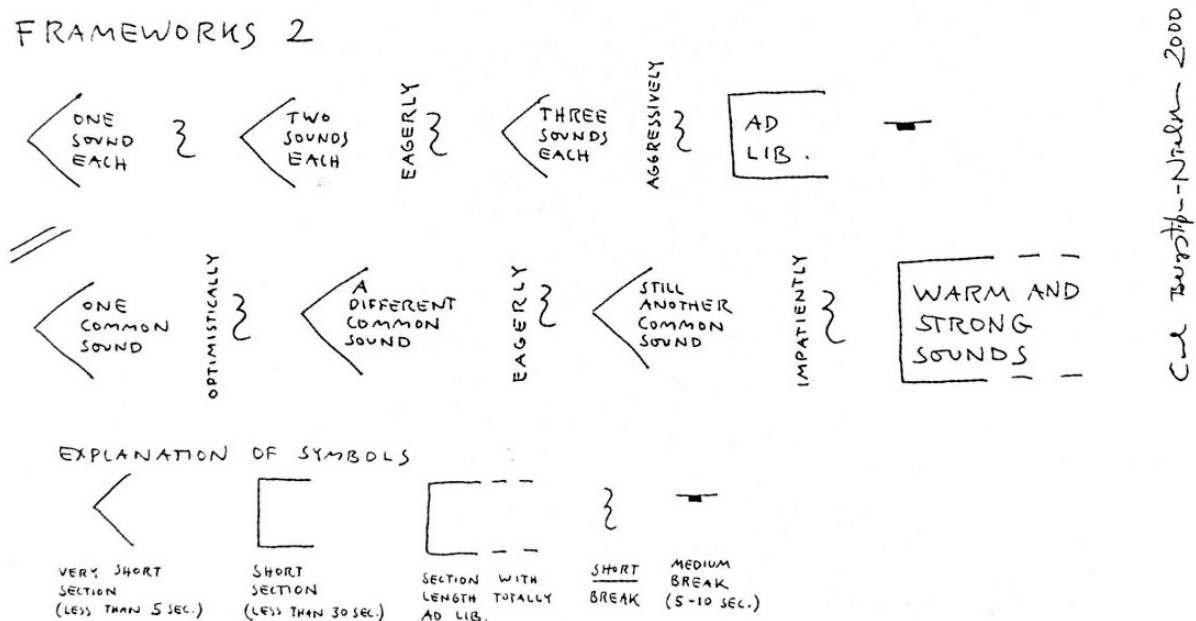


Figure 2.9: Score of Carl Bergstrom-Nielsen's Frameworks 2

In my work *Personaphrenia*, I indicate to sustain a note until out of breath. The overall note will be generally longer but dependent upon each performer's breath and capacity. One could theoretically take shallow breaths for a different result while still fitting the criteria. On the opposite end, I also give the performers pitches to play as short as possible. Both of these allow for variation to some degree while still achieving the intended texture.

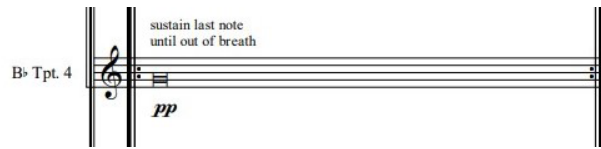


Figure 2.10: Excerpt from my composition *Personaphrenia* - Sustain

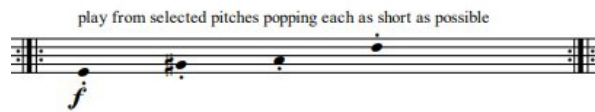


Figure 2.11: Excerpt from my composition *Personaphrenia* - Short as possible

2.4 Form

In standard notated music, the performer realizes a given score left to right sequentially. Some composers however have written music that changes that concept, including rearranging a piece's structure of events from performance to performance. This type of flexibility in a work's structure is called open form or mobile form.

Every work has a starting point, but not every work has the same starting point for each performance. *Zyklus* for a percussionist is a well-known work of Stockhausen's that has a non-traditional approach to form in which the performer can choose their starting point from anywhere in score and read it either right side up or upside down.²⁴ The score and form is circular, with the end of the piece occurring when the performer reaches their starting point. While often predetermined and set for ease of performance, the performer has the option to change their starting point with each performance.

²⁴ Stockhausen, Karlheinz. *Zyklus, Nr. 9 [für einen Schlagzeuger]*. London: Universal Edition, 1961.

Mara Helmuth is a composer on faculty at University of Cincinnati's College Conservatory of Music and holds degrees from Columbia University and the University of Illinois at Urbana-Champaign.²⁵ Helmuth's *String Paths* has several looping colored paths of various shapes and commands, including "listen!" "READ MY LIPS" and "wake UP and smell the coffee."²⁶



Figure 2.12: Score of Mara Helmuth's String Paths

In the same manner as *Zyklus*, each improviser first chooses a starting point and then travels in any direction along one of the graphic paths. From there, they make a path along their respective lines at their own pace and own direction, including repeating or stopping. The

²⁵ Mara Helmuth. Accessed November 20, 2022. <http://www.marahelmuth.com/info/index.html>.

²⁶ Sauer, Theresa. *Notations 21*. 1st ed. New York: Mark Batty Publisher, 2009.

freedom to choose paths and directions gives a large amount of variability with each performance.

Marilyn Shrude is a groundbreaking composer on faculty at Bowling Green State University, a Guggenheim Fellow in 2011 and the first woman to receive the Kennedy Center Friedheim Award and Cleveland Arts Prize for Music.²⁷ Her works often utilize aleatoric and indeterminate approaches. Shrude's work *Drifting Over A Red Place* for solo WX7 wind controller is one example of this, influenced by traditional form but with variation in its realization.²⁸ Melodic fragments are grouped into expanding four boxed sections. Performing from the center box outward, the names of the sections are "Theme," "Variation," "Diversion," and "Development" as a play on classical music forms. Within each box, melodic fragments can be played in any order. In this case, the length of the work stays relatively the same, but the order of its contents varies depending on the path the performer takes through the fragments.

²⁷ Marilyn Shrude. Accessed November 20, 2022. <http://www.marilynshrude.com/biography/>.

²⁸ Sauer, Theresa. *Notations 21*. 1st ed. New York: Mark Batty Publisher, 2009.

Figure 2.13: Score of Marilyn Shrude’s *Drifting Over A Red Place*, shown in Notations 21

In a similar fashion, New York School composer Earle Brown’s *Available Forms I* is another example of mobile form or open form, inspired by Alexander Calder’s artwork.

“... in 1952 when I was experimenting with open form and aspects of improvisation, my influences to do that were primarily from the American sculptor Alexander Calder and the mobiles, which are transforming works of art, I mean they have indigenous transformational factors in their construction, and this seemed to me to be just beautiful. As you walk into a museum and you look at a mobile you see a configuration that’s moving very subtly. You walk in the same building the next day and it’s a different configuration, yet it’s the same piece, the same work by Calder. It took me a couple of years to figure out how to go about it musically. I thought that it would be fantastic to have a piece of music which would have a basic character always, but by virtue of aspects of improvisation or notational flexibility, the piece could take on subtly different kinds of character.”²⁹

²⁹ Bailey, Derek. *Improvisation: Its Nature and Practice in Music*. [Rev. ed.]. New York: Da Capo Press, 1993.

Available Forms I contains non-symmetrical carved out sections of an orchestral score, labeled with numbers. Over the course of a performance, the conductor signals a section number for the ensemble to perform, allowing the conductor to instinctively rearrange the order in which the musical material is presented.³⁰

The conception of the work is that the score is specific material, having different characteristics, which is subject to many *inherent* modifications, *spontaneously* created during the performance: modified combinatorially (event plus event), sequentially, dynamically, temporally.³¹

In a similar fashion, Tchicai's *Fields, Cows and Flowers* allows performers to determine which order they perform each section.³² The sections focus on different musical aspects involving a variety of prompts for improvisation.

Robert Erickson was a composer, author, educator, and co-founder of the University of California San Diego music department. Like other composers at the time, his initial focus was on serialist music, but moved to more intuitive music and would prove to have an impact on several notable students such as Pauline Oliveros, Morton Subotnick, and Terry Riley.³³ Erickson's *Scapes* contains three movements—each being a game of tic tac toe. Each movement has nine boxes with miniature graphic scores in which two ensembles “compete” with marking an “X” or an “O.” The boxed-off musical material has similarities to *Available Forms*, but the execution is determined by how the game unfolds.

³⁰ Brown, Earle. *Available forms, 1; for chamber ensemble (18 players)*. New York: Associated Music Publishers, 1962.

³¹ Brown, Earle. *Available forms, 1; for chamber ensemble (18 players)*. New York: Associated Music Publishers, 1962.

³² Sauer, Theresa. *Notations 21*. 1st ed. New York: Mark Batty Publisher, 2009.

³³ “Robert Erickson.” Robert Erikson. Accessed November 20, 2022. <https://music-cms.ucsd.edu/people/faculty/memoriain/robert-erickson.html>.

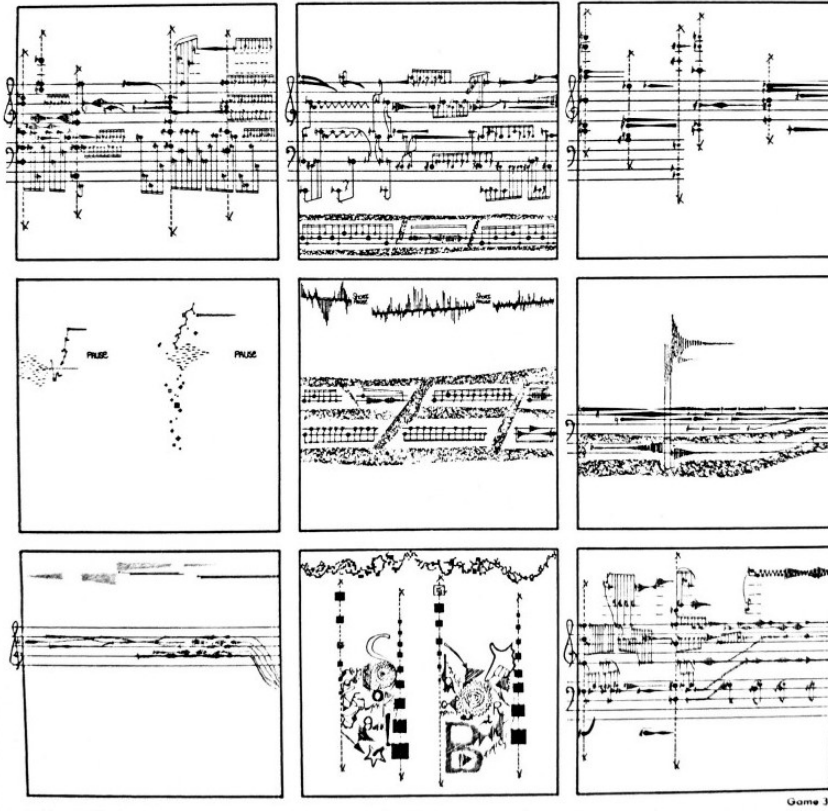


Figure 2.14: Game 3 of *Scapes* by Robert Erickson as shown in Notations 21

This approach results in a large degree of variability with every performance due to the flexibility in structure. The character of each section might stay the same, but overall flow of the piece can produce widely different results.

CHAPTER 3: Matter Examples

3.1 Pitch Control

3.1.1 Individual Pitches

Matter examples involve guiding pitch, harmony, or any types of sounds with or without definite pitch. Ornette Coleman, one of the main pioneers of modern improvised music, would occasionally reduce chords to a single root or pitch center as a starting point for improvisation. One example of this is during the melody statement on *Ramblin* where ad lib on “D” is listed for the bass and dovetails into improvisation.³⁴ Bassist Dave Holland’s composition *Four Winds* recorded with Anthony Braxton, Sam Rivers, and Barry Altschul on *Conference of the Birds* also lists the same root as a jumping off point for improvisation.³⁵ For this, the bass instrument might stay on the pitch center while other pitches are layered throughout the rest of the ensemble. These approaches act as an anchor, enabling a fair amount of freedom focused on interaction, connection, and development between performers.

Similarly, Mary Halvorson’s “Too Many Ties” introduction involves using single pitches as starting points.³⁶ Halvorson is a prolific and diverse guitarist based in New York City who has worked with Anthony Braxton, Joe Morris, John Zorn, and others.³⁷ “Too Many Ties” comes from one of her trio albums *Dragon’s Head*. In the composition, she writes two separate lines of a series of pitch events for bass and guitar to improvise using any octave, with each section of a new pitch being cued.

³⁴ Coleman, Ornette. “A Collection of the Compositions of Ornette Coleman.” New York: MJQ Music, 1961.

³⁵ Holland, Dave. *Four Winds*. daveholland.com/product/four-winds-2/.

³⁶ Halvorson, Mary. *Two Many Ties* (No. 6).

³⁷ Mary Halvorson. Accessed November 20, 2022. <https://www.maryhalvorson.com/about>.

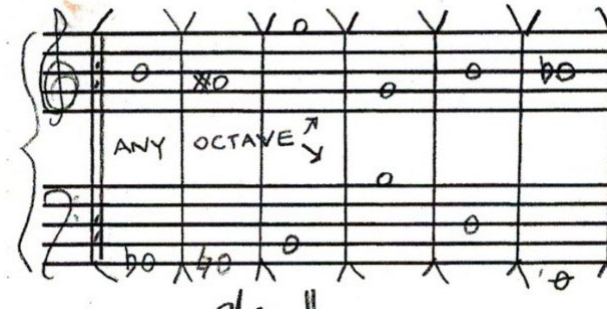


Figure 3.1: Excerpt of introduction to Mary Halvorson’s *Too Many Ties*

“Those cells also could be thought of as setting up a simple harmony: a bass note against a melody note. So the way the harmonic motion changes between the cells influences the mood of the composition and how the improvising starts. The harmony is meant to be simple/open... a jumping off point as opposed to a prescription. Since it's only two notes, a lot can be left for interpretation as far as how to fill in the rest.”³⁸

Tchicai’s *Fields, Cows and Flowers* also has a section of various pairs of pitches from which players can choose. Once the pair is realized the number of times indicated in the circle, the performer moves on to a different pair.³⁹

| | | | | | |
|----|---|----|---|----|---|
| F | 3 | F# | 2 | G | 5 |
| E | 7 | F | 2 | F# | 5 |
| A | 7 | B | 2 | C# | 5 |
| A | 7 | B | 2 | C# | 5 |
| F | 2 | Gb | 5 | G | 3 |
| D | 2 | E | 5 | E | 3 |
| F | 5 | Gb | 7 | G | 2 |
| F | 5 | Ab | 7 | A | 2 |
| A | 2 | Bb | 3 | C# | 5 |
| E | 2 | F | 3 | F# | 5 |
| E | 5 | G | 2 | A | 7 |
| A | 5 | B | 2 | A# | 7 |
| E | 3 | F# | 5 | G# | 2 |
| D | 2 | E | 5 | F# | 2 |
| E | 2 | F | 7 | G# | 5 |
| F# | 2 | G | 7 | G# | 5 |
| B | 3 | D# | 2 | G | 5 |
| G | 3 | B | 2 | D# | 5 |
| F# | 2 | C# | 5 | A# | 5 |
| A | 2 | B | 5 | C# | 5 |
| A | 3 | Bb | 2 | B | 5 |
| D | 3 | E | 2 | E | 5 |
| C# | 2 | D | 7 | D# | 5 |
| G | 2 | Ab | 7 | A | 5 |

Figure 3.2: Excerpt from Tchicai’s *Fields, Cows and Flowers* of listed intervals

³⁸ Mary Halvorsson (guitarist, composer & improviser) in response to an emailed question about her composition, September 2022.

³⁹ Sauer, Theresa. *Notations 21*. 1st ed. New York: Mark Batty Publisher, 2009.

Instead of choosing which notes to play, *Diet Polka* by Daniel Goode gives liberty to notes not to play. Daniel Goode is a composer and clarinetist who studied with Henry Cowell and Pauline Oliveros and cites one of his musical influences being “music as a gradual process,” which is a large part of *Diet Polka*.⁴⁰ In this, Goode composes short, repeated sections of notated chords, but instructs the performer to choose notes one by one to gradually subtract from the chords until one or two remain before moving to the next section.⁴¹ This approach can lead to interesting combinations of notes depending on how each section develops while still maintaining the same overall character.

Diet Polka

Figure 3.3: Excerpt from Daniel Goode’s *Diet Polka*

3.1.2 Pitch Collections (Scales, Chords & Shapes)

Traditionally, when musicians improvise in a jazz or popular music setting they use chord symbols as an indication or guide for improvisation. The standard chord symbol notation falls into this improvisatory device category, with each chord often being associated with a key or corresponding chord-scale. From this, improvisors use the chord changes to guide which pitches

⁴⁰ Daniel Goode. Accessed November 20, 2022. <https://danielgoode.com/>.

⁴¹ Sauer, Theresa. *Notations 21*. 1st ed. New York: Mark Batty Publisher, 2009.

to use. Essentially since the birth of modal jazz with Miles Davis, the Chord scale system (which originated from George Russell's *Lydian Chromatic Concept of Tonal Organization*) is the most widely accepted way to approach chords in modern jazz, where certain chords call for specific scales.⁴² For instance, a C major 7#11 is associated with the lydian mode. The extensions listed for the chord delineate which scale degrees are played and vice versa. Below are a few examples of standard chord changes from my composition *Personaphrenia* with each chord implying lydian in this case. The slash half notes are indicated for clarity of harmonic rhythm, but the performer can improvise over the chords freely.

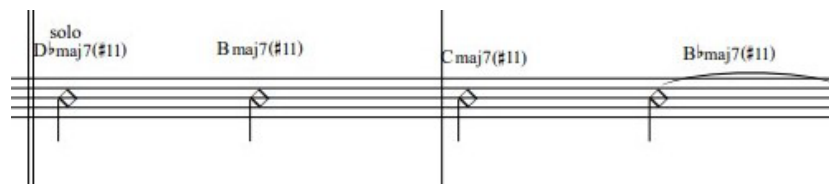


Figure 3.4: Excerpt from my composition *Personaphrenia* as a chord progression example

While chords do imply a certain mode, there is also liberty to the performer's choice when it comes to chords with multiple scale options, like dominant chords and using chord substitutions. More specifically than chord symbols, a composer can list a scale upon which to improvise, like the D minor blues scale here.

⁴² Russell, George. *The Lydian Chromatic Concept of Tonal Organization for Improvisation*. New York: Concept Publishing Co., 1959.



Figure 3.5: Excerpt from *Personaphrenia* listing a scale for improvisation

In *Personaphrenia*, I also call for the soloing musicians to only use certain chord shapes—major chords in this case. Choosing the major chord shape emphasizes a “brighter” tonality in the improvisation.

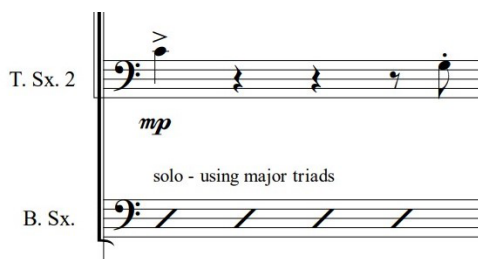


Figure 3.6: Excerpt from *Personaphrenia* - improvise using major triads

Another section of the work in the piano lists a chord progression of options between three major or minor seventh chord roots stacked on another. The performer chooses one of the listed roots and qualities for improvising. My goal with this was to have variability in the progression, with the chords still maintain an overall character through similar chord qualities.

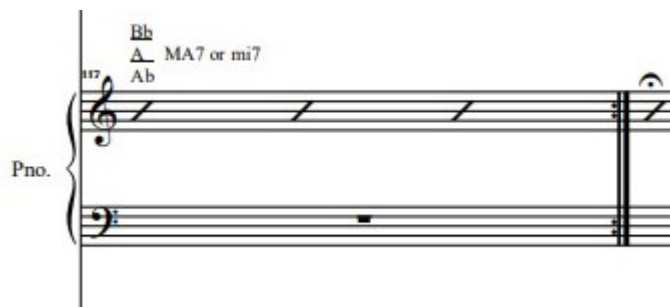


Figure 3.7: Excerpt from *Personaphrenia* showing chord options

Using chord qualities, chord shapes, or pitch sets are additional ways to indicate groups of notes by either specifying pitches or intervals, like through set classes. Scales and chords from

jazz and popular music are mostly influenced by Western functional harmony. However, any group of notes—regardless of tonal system—can be used as a pitch collection for improvisation. Listing pitch names within brackets or using the pitch class system with set classes are options for notation. Guitarist Miles Okazaki, who has worked with John Zorn, Mary Halvorson, Vijay Iyer, Steve Coleman and studied composition with Anthony Davis (a composer known for his bridging of jazz and contemporary classical music and a member of AACM), uses a visual representation of set classes with a twelve-point clock face to create chord shapes, with each point being one of twelve chromatic pitches. One of Okazaki's works creates a combination of four trichords that fulfill all twelve notes without repetitions by using a major, minor, diminished, and augmented chord.

The harmonies are outlined by four triads in the bass: Fmi, Dma, Gaug, Bbdim. These could be thought of as a kind of progression in Fmi: I, V/II, V+/V, V7b9. These four triads also link together to make 12 tones, a vehicle for textural group improvisation:⁴³

⁴³ Okazaki, Miles. *Trickster*. www.milesokazaki.com/scores/trickster.

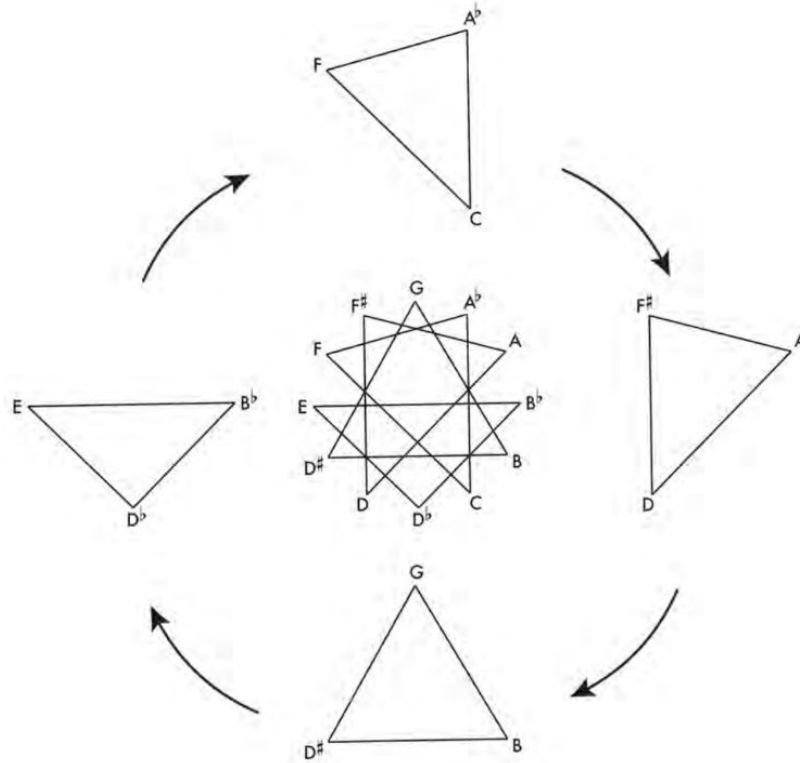


Figure 3.8: Excerpt from Miles Okazaki's "Black Bolt" from *Trickster*

As was the purpose with Schoenberg's method of twelve-tone composition, Okazaki's example focuses on pitch saturation and interval organization through these three note cells.

Influenced by Cecil Taylor, composer-improviser Samuel Pluta's *American Tokyo Daydream III* uses boxed pitch material reminiscent of Taylor's unit structures. One of Pluta's principal teachers was George Lewis, and he collaborated with improvisors Evan Parker and Ikue Mori.⁴⁴ Most boxes have specific indicated pitches without rhythm, whether as block chords or strings of notes.⁴⁵ These notes are notated in a specific octave which differ from all of the previous examples being free to any octave. The grouping of chords and ordering of pitches within each microsection also sets this work apart from the other examples, similar to a serialist

⁴⁴ Sam Pluta. Accessed November 20, 2022. <http://www.sampluta.com/biographyText.html>.

⁴⁵ Sauer, Theresa. *Notations 21*. 1st ed. New York: Mark Batty Publisher, 2009.

piece. Some of the boxes also have rectangular pitch blocks, which leads into the next section of Matter: Non-Specific Pitch and Contour.

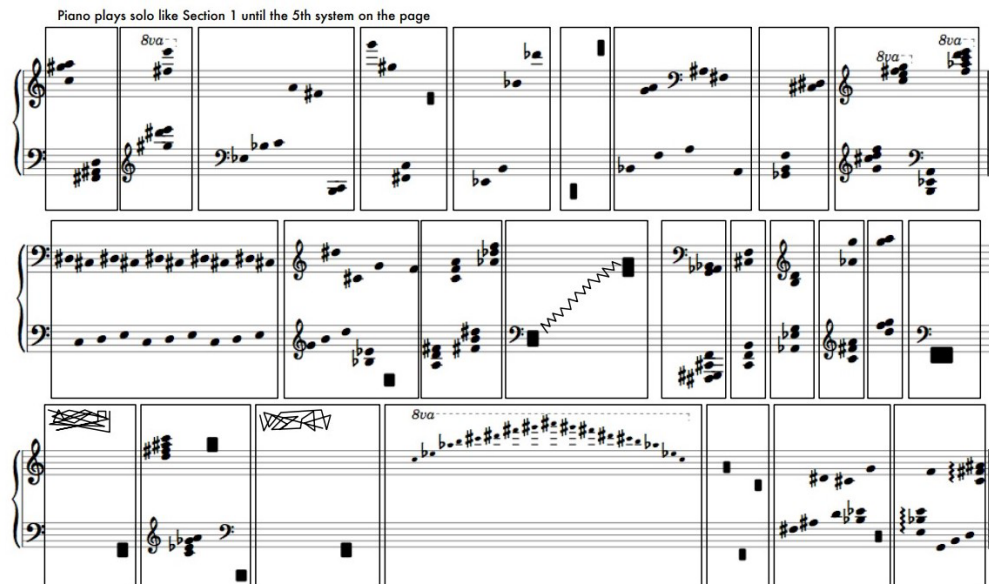


Figure 3.9: Excerpt from Samuel Pluta’s *American Tokyo Daydream III*

3.2 Non-Specific Pitch and Contour (Up, Down, Static)

While there is specific control of pitch, there is also lack of definition of pitch. For example, the rectangular blocks for clusters in Pluta’s piece indicate non-specific pitch clusters in a localized range. Because of these pitches, the clusters act as a “noise,” placing more emphasis on the gestures and character of the piece rather than pitch material. The emphasis on gestures is a key element with this type of improvisatory device.

In a more linear fashion, *Workers Union* indicates no specific pitches, but contours of note heads in relation to a single staff line indicating the middle of an instrument’s range. In the same way, Steve Antosca’s *One Becomes Two: “Persona 1 - Joy: Dancing In Space”* uses this approach for solo violin but without the use of any center line as a guide (Figure 2.5). Antosca explains this method and the reasoning behind it:

“In the ‘Joy’ section, subtitled ‘Dancing in Space,’ indeterminacy is created by notating specific rhythms, gestures, and dynamics, but with no pitch material, only pitch gesture. This is created by simply notating the passage without staff lines; leaving the performer to replicate the pitch gestures assures that the indeterminacy is guided by the emotion of the moment. In this way, no two performances of the piece will be the same.”

One more pitch instruction is to use only arpeggios in improvising. This potentially creates a wider, open, or disjunct sound with lack of stepwise motion.



Figure 3.10: Excerpt from *Personaphrenia* instructing to use arpeggios for improvisation

In addition to **RECORD** and **PLAYBACK** discussed in the Time chapter, another prompt from George Lewis’s *Artificial Life 2007* is **LOW**:

LOW: Play one extremely (relatively) long sound, pitched relatively low.⁴⁶

This indicates a general range that is non-instrument and non-pitch specific but will produce a static low-pitched pedal, which contrasts from the previous variable or jagged devices.

Moving to more abstract notation, Earle Brown’s *November 52* uses more abstract notation and has a score with a single large fifty line staff without a time signature or bar lines, scattered with single pitches of varying lengths and dynamics.⁴⁷

⁴⁶ Lewis, George. *Artificial Life*. New York, NY: C.F. Peters Corporation, 2007.

⁴⁷ Brown, Earle. “Folio (1952/53); and, 4 Systems (1954)”. New York: Associated Music Publishers, 1961..

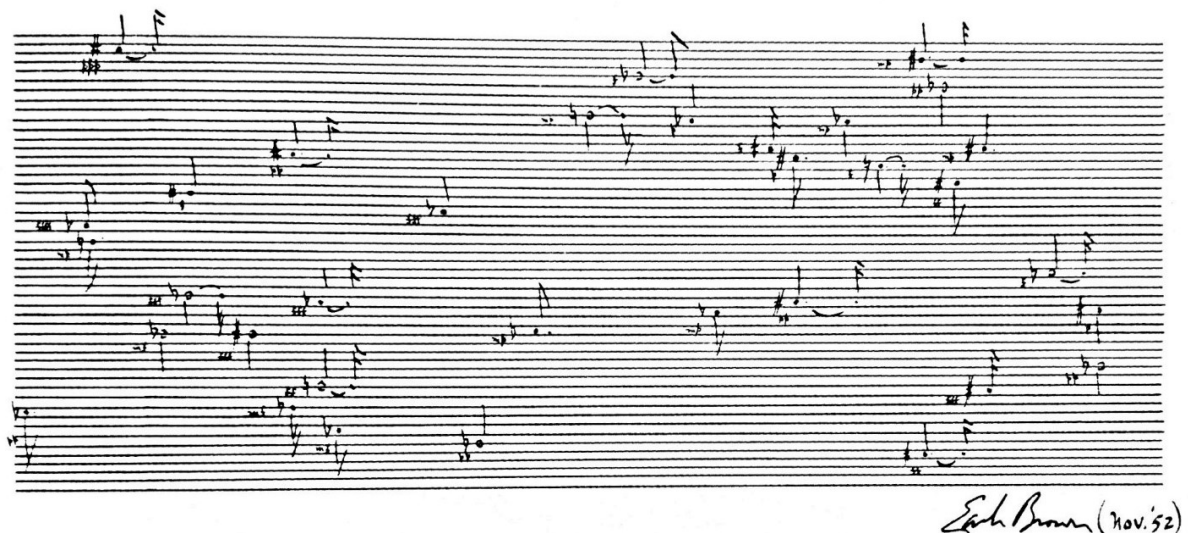


Figure 3.11: Score of Earle Brown's *Nov. 52*

Because of this, the performer must decide how to interpret the score. Brown's explains how to approach the piece from the score notes:

“The frequency range will be relative to that of each instrument performing the work. To be performed in any direction from any point in the defined space for any length of time... The defined space may be thought of as real or illusory, as a whole or in parts. Either space (vertical or horizontal) may expand, contract, or remain as it seems to be here.”⁴⁸

3.3 Other Sounds & Textures

When listing improvisatory devices that use sounds outside of specific pitch material, types generally fall into two categories: technical and expressive. Technical examples are instructional or recipe-like, whereas expressive examples provide an idea or concept to be realized. Within the first category, *Personaphrenia* includes instructions to improvise using only specific techniques.

⁴⁸ Brown, Earle. “Folio (1952/53); and, 4 Systems (1954)”. New York: Associated Music Publishers, 1961.

The image shows three musical staves with various performance instructions and dynamic markings:

- Top Staff:** A single staff with a treble clef. Above the staff, the text reads: "freely improvise using low muted notes, slow pic scrapes, and sporadic string pulls/pops". Below the staff, the dynamic marking *mf* is present.
- Middle Staff (A.B.):** A staff with a bass clef. Above the staff, the text reads: "arco" and "sustained bow overpressure". Below the staff, there is a "stop" instruction with a symbol, followed by the dynamic marking *mp*, and then the text: "free improv using deadstrokes, rims, hi-hat clicks, fingers/stick end dragged on toms".
- Bottom Staff (D. S.):** A staff with a bass clef. Below the staff, the dynamic marking *f* is present, followed by the dynamic marking *mp*.

Figure 3.12: Excerpts from *Personaphrenia* using various techniques for improvisation

Improvising using pick scrapes, string pops, dead-strokes, rims, and hi-hat clicks are all examples of technical improvisatory devices where the performer is given techniques to use. Indicating this limits technical and textural choices, but these are intended as colors of sound to “paint” with, often leaving the creative aspects to the performer. Additionally, with a technique like multiphonics for instance, someone’s first instinct might be to improvise loudly partially due to the brash nature of multiphonics. However, the limitation forces them to think creatively in how they approach the improvisation in order to make a compelling artistic statement.

Devices can not only be specific in technical indications, but also leave the technical aspects to the performer by indicating a general sound or character. In contrast, expressive devices are non-instrument specific and give the performer a resulting sound that they must reverse engineer in order to produce.

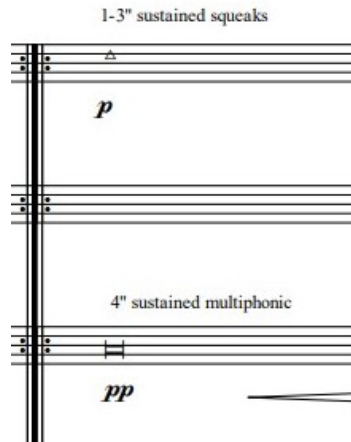


Figure 3.13: Excerpt from *Personaphrenia* using squeaks and multiphonics

Examples of expressive or gestural devices are improvising using only squeaks or scribbles, which I use in *Personaphrenia*. Scribbles imply disjunct linear motion but production is left up to the performer. Squeaks can be produced in several different ways depending on the instrument and could be interpreted to imitate either animal sounds or artificial sounds—like a squeaking door. Each calls for a character, but it’s the performer’s job to create them. George Lewis’s *Artificial Life 2007* has various performer instructions along the same lines:

SLOW: Play a phrase that recalls the feeling of being slow.

SMOOTH: Play a stepwise melody or other phrase that recalls smoothness, lack of turbulence and nostalgia.

ROUGH: Play with a very rough-textured quality.⁴⁹

While the first part of **SMOOTH**’s description could fit with the previous section of pitch contour; the overall descriptors “smoothness,” “lack of turbulence,” and “nostalgia” explain the character of **SMOOTH** as a guide beyond pitch motion. Like the previous examples, each gives a character for the performer to achieve while still leaving ample room for interpretation.

⁴⁹ Lewis, George. *Artificial Life*. New York, NY: C.F. Peters Corporation, 2007.

Stylistic choices or quotations can be given as devices in similar fashion. John Zorn's *Roadrunner* has several instances where he calls for quotations of a particular music or style, like "Quote Tango," "Quote a la Liszt Hungarian Rhapsody," or "Mambo," "Waltz," and "Polka."⁵⁰ Each style has certain rhythmic, harmonic, stylistic and possibly semiotic connotations the performer needs to consider in order to convey it effectively. Composers can utilize styles like Zorn for their color, mood, and semiotic traits.

⁵⁰ Zorn, John. *Roadrunner*.

CHAPTER 4: Orchestration Examples

Types of instruments, how many, and when they play define, in large part, the identity of a music performance or work. Orchestration as a type of improvisatory device controls which instruments or performers are used at a given time. This can include the number of players, instrument types or families, voice type (high or low), specific performers, or even superficial characteristics. For certain types of instruments, *Workers Union* calls for “any loud sounding of instruments.” Featured characteristics of the work include being loud and rhythmic. In other words, the score note essentially eliminates the use of instruments like the harp (without amplification)—as it is quieter than most instruments. Additionally, any number of players can perform this work, leaving flexibility for ensembles. In contrast, Goode’s *Diet Polka* is for only one player, and calls for “accordion or any keyboard instrument.”⁵¹ The keyboard instrument family can play two separate staves at a time, essential to this work written with a grand staff. This being the case, a single voice instrument wouldn’t be able to effectively execute the work. Whether solo or larger ensemble, the certain number of instruments greatly affects the sound and texture of an improvisation. Davidson’s *Never Love a Wild Thing* has a section for only three instruments to play in canon, with wooden sounds if possible. The staggered entrances of a canon adds a unique layering texture. Wooden sounds could be interpreted to be woodwinds, strings, or even wooden percussion keyboard instruments. The instruction is independent of the instrument families making it more flexible while still producing a unified sound color.

Of the same group size, Tchicai includes a section for a trio where the three players alternate improvising. Much like trading in straight-ahead jazz in which performers alternate improvising, playing one after another encourages a conversation with others’ musical ideas,

⁵¹ Sauer, Theresa. *Notations 21*. 1st ed. New York: Mark Batty Publisher, 2009.

whether as a continuation or in contrast. In the same work, he has staggered entrances of improvised ostinatos. The result creates a continually layered texture for a final player to improvise over.

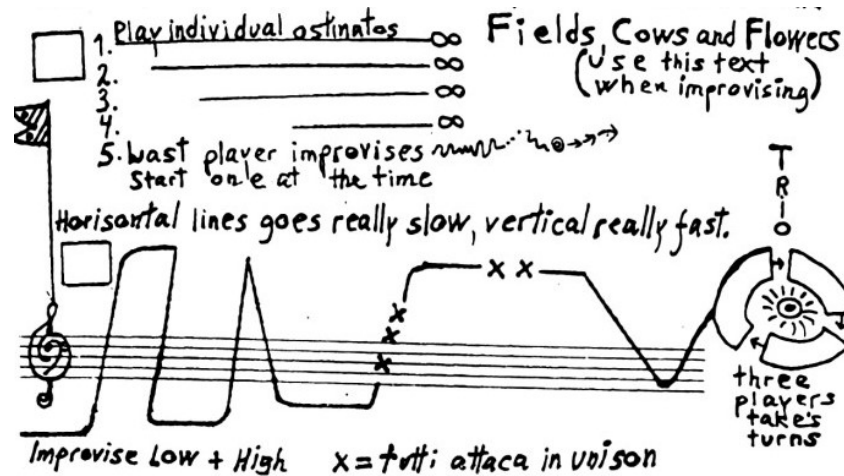


Figure 4.1: Excerpt from John Tchicai's *Fields, Cows and Flowers*

John Tchicai has another work called *Breath Bridge* where sections include only organized entrances, duets, and solo sections of improvisation.⁵² Instead of specifying by instrument, he writes the names of the players. Through this, the individual musicians are considered for how they approach improvising in contrast to instruments or sonic traits. Additionally, a few of the sections have staggered entrances like those seen in earlier discussed examples, but also include organized subgroups, like duos and solos. Each of these approaches inherently change the texture without specifying any musical parameters.

⁵² Sauer, Theresa. *Notations 21*. 1st ed. New York: Mark Batty Publisher, 2009.

Tchicai
7. Dec 93

Breath Bridge II

Tr. Flute
in Db

Mark _____
John _____
Jeff _____
Margriet _____
(c hard from below)

Fast

Short Duos
|| Margriet Basha || repeat
Mark Andrew || repeat ∞

Key of Db
Solo
John

group ← repeat

open tonality, but very sparse

John _____
Mark _____
Margriet _____
Jeff _____

3
4
[Solo Mike]
Group

Finis

Figure 4.2: Score to John Tchicai's *Breath Bridge II*

In John Zorn's *Cobra*, the ensemble determines in real time what combinations of performers play together through a set system of rules and gestures.⁵³ Rather than being predetermined, groups are assembled, exchanged, and rearranged in the moment using a system of signals such as placing a hand on your mouth or nose with a number to cue a corresponding section below. The orchestration process itself is developed through guided improvisation.

“What I was really fascinated with was finding a way to harness these improvisers’ talents in a compositional framework without actually hindering what they did best - which is improvising. An improviser wants to have the freedom to do anything at any time. For a composer to give an improviser a piece of music which said, ‘play these melodies - then

⁵³ Dylan Van der Schyff, “The Free Improvisation Game: Performing John Zorn’s *Cobra*,” *Journal of Research in Music Performance*, 2013, <https://doi.org/10.21061/jrmp.v0i0.727>.

improvise - then play with this guy - then improvise...,’ to me, that was defeating the purpose of what these people had developed, which was a very particular way of relating to their instruments and to each other. And I was interested in those relationships.

I don’t talk about any sounds that anybody might make, I talk about the improvisers themselves: ‘you can play with this person if you chose to or in alternation with that person. But what you play is totally up to you and who you decide to play with is up to you.’

Traditionally, composers create an arc on a time line, a structure that begins in one place, goes to a middle and then ends. I began composing my game pieces by using a time line but abstracting everything away from sound and talking about people.”⁵⁴

| | | | | |
|-------|----|-----------|------------------|---|
| | 1. | P | POOL | players not playing <u>may</u> come in; players already playing stop or radically change the quality of what they are playing |
| MOUTH | 2. | R | RUNNER | prompter selects players to come in at downbeat, others stop |
| | 3. | S | SUBSTITUTE | those playing <u>must</u> stop; those not playing <u>must</u> come in |
| | 4. | SX | SUB CROSSFADE | those playing fade out while those not playing fade in |
| | 1. | D | DUOS | choose someone to play with, any length, any number of times |
| NOSE | 2. | T | TRADES | chains of traded solos by pointing (or obvious eye contact); anyone can start another up |
| | 3. | E | EVENTS 1, 2 or 3 | one, two or three singular sonic occurrences at will |
| | 4. | B | BUDDIES | like duos, but once |

Figure 4.3: Excerpt from instructions to *John Zorn’s Cobra*

⁵⁴ Bailey, Derek. *Improvisation : Its Nature and Practice in Music*. [Rev. ed.]. New York: Da Capo Press, 1993.

CHAPTER 5: Interaction Examples

5.1 Interaction with Other Performers

Call and response is one of the most fundamental interactions in music—from its African roots continued through traditions of African-influenced music, including jazz, blues, gospel, and rock. This concept is a key part of improvisation in creating a conversation through imitation, developing material, and providing commentary between improvisers. These interactions in a controlled improvisatory environment are the types of examples explored in this section.

Composer-improviser Peter Sterk's relatively simple instructional piece *Biomass* calls for one performer to start with a small motif.⁵⁵ The other performers imitate it several times, and then eventually each performer creates a new motif based on the imitations. The piece gradually changes and evolves from the initial musical material, with musical development through imitation being the key improvisatory element.

⁵⁵ Sauer, Theresa. *Notations 21*. 1st ed. New York: Mark Batty Publisher, 2009.

Biomass

Music inspired by the way plants spread through seeding

Someone starts with a short motif.

The others approximately reproduce the motif a few times.

Anyone who is done with the motif then chooses a motif from what the others are playing and reproduces this new motif a few times.

And so on.

Gradually mutations of the first motif arise.

Anyone can introduce a new motif at any time.

Figure 5.1: Score of Peter Sterk's "Biomass"

Similarly—but with more facets—George Lewis's *Artificial Life 2007* involves unique instructions to individual groups to play off of another player through imitation using several approaches involving entrances, proximity, and volume.⁵⁶ In the work, each group has a part of sixteen algorithmic-like prompts to be played in a sequential order, and each prompt instructs the performers how to function. Here are interactive instructions taken from one of the parts:

BEGINNING: Enter at the same time as another group, imitating them as closely as possible. Stop playing when the other group does.

END: Enter as soon as possible at the end of another group's playing, attempting to play what they just played as faithfully as possible, for the same duration as the original phrase.

FAR: Imitate the music being played now by the group farthest in physical distance from you. Stop playing when the other group does.

INTERRUPT: Play a very loud, raucous phrase for a maximum of 3 seconds, designed to interrupt another group's playing with a contrasting element.

⁵⁶ Lewis, George. *Artificial Life*. New York, NY: C.F. Peters Corporation, 2007.

SOFT: Begin simultaneously with another group, playing as softly as possible under that group's phrase. Continue briefly after that group ends.

SILENCE: Remain silent until you hear the ends of at least 3 phrases played by other players.⁵⁷

In addition to imitation, the instructions involve different ways of reacting beyond imitating other groups in the ensemble.

Returning to *Cobra*, Zorn includes a prompt where players pick substitutes who try to play the same music in their place. Players must be attentive and listening in order to be ready if they happen to be substituted. Exchanging players can create timbral and textural changes while still continuing the same material.


EAR 2.  M = M players pick substitutes who try to play the same music

Figure 5.2: Excerpt from instructions to *John Zorn's Cobra*

An additional example of interactions between other players is shown in Mara Helmuth's *String Paths* (Figure 2.12). If one performer's part collides with another sonically while improvising, they are to jump to the intersection of both parts on the page. Bouncing off performers in this way requires active listening and awareness of other performers.

5.2 Interaction with Other Mediums

Continuing with Helmuth, *String Paths* includes interaction with the score itself (Figure 2.12). Before performing, musicians are instructed to choose a percussion instrument and a starting point on one of the colored lines of text and symbols. The performers must use the blank spaces as rests and shapes as indication of what and when to play. As in this piece, use of other

⁵⁷ Lewis, George. *Artificial Life*. New York, NY: C.F. Peters Corporation, 2007.

mediums like text and visuals can be a unique tool to influence music-making and define this section.

While Helmuth's work is more spelled out, these concepts within the Interaction category can become more abstract and left entirely to the performer's interpretation. In *Fields, Cows and Flowers*, Tchicai invites the performers to use the title as text for improvisation, whether that is interpreted literally by speaking the text or making cow sounds, or figuratively playing pastoral and natural musical ideas. Perhaps more poetically, here are a couple of works from Stockhausen's *Aus Den Sieben Tagen*:⁵⁸

CONNECTION

Play a vibration in the rhythm of your body
Play a vibration in the rhythm of your heart
Play a vibration in the rhythm of your breathing
Play a vibration in the rhythm of your thinking
Play a vibration in the rhythm of your intuition
Play a vibration in the rhythm of your enlightenment
Play a vibration in the rhythm of the universe
Mix these vibrations freely
Leave enough silence between them

INTENSITY

play single sounds
with such dedication
until you feel the warmth
that radiates from you
play on and sustain it
as long as you can

Figure 5.3: Two selected works from Stockhausen's *Aus Den Sieben Tagen*

⁵⁸ Stockhausen, Karlheinz. "From the Seven Days = Aus Den Sieben Tagen : Nr. 26 Composed in May 1968". Wien: Universal Edition, 1970.

This text is as much instructing the performers as it is requiring them to interact and respond to the text musically, emotionally, philosophically, and spiritually. In Derek Bailey's book, improviser, composer, and instrument maker Hugh Davies comments;

“Performing such a piece... one is very conscious of playing a definite composition, even though the nature of it is such that one need only think the text over quietly to oneself before starting to play, and then everything happens intuitively - one need not be fully conscious of what one is playing, one ‘becomes the music’. In many ways this is very close to a group improvisation, with the difference that... one remains aware of the composer influencing the performance from a distance through his score. And the structural indications in the score discussed above ensure that those elements at least will make the result completely different from a free improvisation.”⁵⁹

Composer, artist and turntable performer Christian Marclay recorded with John Zorn and Ikue Mori on the album *Locus Solus* and focuses on the fusion of art and sound.^{60 61} His *Screenplay* is an example of this, using film as a visual medium for improvisers. He offers an interesting overview of this process:

“I composed a silent collage of found film footage partially layered with computer graphics to provide a framework in which live music can develop. Moving images and graphics give musicians visual cues suggesting emotion, energy, rhythm, pitch, volume, and duration. I believe in the power of images to evoke sound.”⁶²

⁵⁹ Bailey, Derek. *Improvisation : Its Nature and Practice in Music*. [Rev. ed.]. New York: Da Capo Press, 1993.

⁶⁰ “Artists - Christian Marclay.” White Cube. Accessed November 20, 2022. https://www.whitecube.com/artists/artist/christian_marclay/.

⁶¹ Tzadik. Accessed November 20, 2022. <https://www.tzadik.com/index.php?catalog=7303>.

⁶² Marclay, Christian. "Screenplay," *The Wire*, 21 Nov. 2007, http://www.electra-productions.com/press_releases/ChristianMarclayScreenPlay2007.pdf (accessed 22 March, 2012).



Figure 5.4: Screenshot of Christian Marclay’s *Screenplay* and a photo of a performance showing screens the performers interact with⁶³

Marclay’s work has a time limit with the piece ending once the film “score” ends, unlike the static visuals of Gary Noland’s *Sixty Luri Albumblatts*. Noland is a composer and visual artist who has taught at Harvard and University of Oregon, with his collection of visual art pieces intended to be interpreted by improvisers similarly to *Screenplay*.⁶⁴ Noland explains:

“The pieces contained in this volume are “pictographically” notated and may be interpreted by any number of players, with no limitations as to the types of instruments employed... The only rule set forth by the composer is that the players respond musically to the images.”⁶⁵

⁶³ “Screen Play by Christian Marclay.” Arthub. Accessed September 14, 2022. <http://arthubasia.org/project/screen-play-by-christian-marclay>.

⁶⁴ Noland, Gary. “About the Composer.” Gary Lloyd Noland. Accessed November 20, 2022. <https://garynolandcomposer.com/bio>.

⁶⁵ Sauer, Theresa. *Notations 21*. 1st ed. New York: Mark Batty Publisher, 2009.



Figure 5.5: Two selections from Gary Noland's Sixty Luri Albumblatts shown in Notations 21

Without some delineation from the composer—like in Helmeth's score—interpretations in visuals will vary drastically between each performer and performance. However, in this case everything is as close to completely free improvisation as you can get—with the only difference being the presentation of visual catalysts for improvisation.

PART II: COMPOSITIONAL APPLICATION

CHAPTER 6: Concept and Goals of the Composition

When beginning to write an original composition inspired by the improvisatory devices discussed in Part I, I had several guidelines I wanted to meet. First, I wanted the demonstration of improvisatory devices to be the main focus. Separate movements or modules would help delineate ideas and could be used independently while clearly showing their focus and connection to prior examples. To go alongside this, I preferred the work to consist of as few pages as possible to avoid paper shuffling. Next, I did not want the overall composition to be too complicated or daunting for a few reasons. I wanted the piece to be accessible for a variable ensemble for flexibility in finding performers and future performances. The work needed to be manageable to put together without too much rehearsal if needed. In addition to ensemble flexibility, I planned to perform on this work with the ensemble, which means I wouldn't want any form of directing to be more complicated than simple cues. The result would be similar to Barry Guy's *Witch Gong Game II* consisting of one large page with multiple differing sections and visuals, but with the concise devices of John Tchicai's *Fields, Cows and Flowers*.

6.1 Amusement Park and Its Structure

To achieve the concepts discussed above, I came up with the idea of a musical "amusement park." The score of the composition imitates an amusement park map, with each "ride" or module being a separate set of controlled variables for improvisation. The map would have essentially everything a typical amusement park map would but with rides changed to modules of improvisatory games.

To start off each performance, the main theme of the park is played. This is a lead sheet with melody and chords, inspired in part by marching bands playing at the entrance of circuses. The ensemble is to play the music as a New Orleans styled collective improvisation. This same music as a slower waltz closes the performance, with some additional concepts added to for the finale.

After the entrance music, performers follow along the map visually to each module, emulating walking through a real park. As a guide to track distance traveled, a grounded pattern of dots indicates distance on the map equal to time improvising. This concept is inspired in part by Mara Helmuth's *String Paths* but with freedom to go in any direction on the map. When walking from module to module, performers all take part in "Crowd Control," which consists of five pitch fields of possible octave specific pitches to choose from. The first pitch field spans several octaves and the last is restrained to one octave B locrian. Throughout the map, there are objects other than modules that performers can interact with during "Crowd Control," like "Restrooms," "Concessions," "People Watching" markers, and "Souvenirs." "Restrooms" are indicated with a roof-shaped fermata over a rest. During "Crowd Control," performers can choose to go to these and simply not play for any period of time. I included this to restrain the ensemble from playing the entire time for the sake of musical interest. Souvenirs are small boxes with a single object or small group like a chord symbol or articulation pattern performers can use during "Crowd Control." Concessions and People Watching will be discussed later as a part of the Interaction examples.

The beginning and ending are the only set formal aspects of the piece, with modules performed in any order. This is continuing off the ideas of Earle Brown's *Available Forms* and John Tchicai's *Fields, Cows and Flowers*. However, in my work most modules can be played

more than once if desired, leading to more form interchangeability. Simulating lengths of rides, each module is meant to be relatively short ranging from under a minute to a few minutes, while some have no specific time setting. When a performer reaches a module they want to perform, they signal by playing a short repeated predetermined motive associated with that module. At that point, other performers can choose to join them in playing the motive, and after a short period of time cue the beginning of the module. However, each ride may have certain limitations to be able to perform, such as only a certain number of performers or types of instruments simulating real rides with signs saying, “you must be this tall to ride.”

CHAPTER 7: Time Focused Modules

7.1 Tunnel of Love

The first module from my work is titled “Tunnel of Love.” This is similar to Andriessen’s *Workers Union* where the performers are in rhythmic unison. In contrast to the loud and fast *Workers Union*, I instructed performers to play as quietly as possible and in a ballad style similar to early romantic film music with lush strings. Like *Workers Union*, performers can play any pitch with simple fluctuations with the given melodic contour. To tie the ensemble together, an optional drummer may play in the jazz ballad style. In order to play this module, there must be a minimum of two performers, with each participating performer choosing a partner to play cooperatively with harmonically.

7.2 Shooting Gallery

“Shooting Gallery” takes inspiration from Antosca’s *One Becomes Two*. A primary aspect in his work is the notation using rhythms and rests but no meter. With this in mind, I use rhythms and meters but no rests in Shooting Gallery. I organized four staff lines, each using a different meter and number of measures: five bars of 2/4; three bars of 3/4; two bars of 4/4; and one bar of 5/4. Each measure includes a handful of notated rhythms that do not fill the entire bar. From this, performers must play listed rhythms, but the rhythms can be placed anywhere within the bar. This can be played in time or treated as groups with each measure cued. The result creates an irregularly rhythmic popcorn texture but with a controlled number of attacks. The last 5/4 measure is repeated until all performers play the rhythm together or until the phrase feels complete thus ending the module.

7.3 RxR (Railroad/Recognizable Rhythms)

“RxR” is another module that lists rhythms with which the performers to improvise. In this module, I have fifteen rhythmic cells mapped sequentially encircling the map. Several of the cells have branching paths to other cells, leading to varying sequences or combinations based on what route the performers choose. This was inspired in part by Hindman’s *Questions We Don’t Dare Ask Ourselves* with improvised boxes, Tina Davidson’s *Never Love a Wild Thing* where she uses a similar approach with branching cells, and Terry Riley’s *In C* with repeatable cells.

While composing these cells, I used rhythms recognizable solely based on rhythm—such as jingle bells, a reggaeton rhythm, and the “door knock” rhythm. When going from one cell to another, I altered them slightly to make a connection between two different rhythms. Branching paths developed from two different altered rhythms coming from the same parent cell.

When performing, the first performer provides a pulse that stays consistent throughout that iteration of the module. Each person starts at a “station” and then improvises—deciding individually which tracks to follow. The sounds played should be more rhythmic and sonically complex than simply pitch-based. The resulting sound should be a pulsating and evolving rhythmic texture, much like *In C*. Performance of this module stops after two cues—one performer signals to “get off” and a second performer follows with signal to end. Performers exit at the nearest railroad marker.

7.4 Merry Go Round

The improvisational device in “Merry Go Round” takes from Terry Riley’s *In C*. I composed a short melody in a similar vein as the waltz section in Strauss’ *Die Fledermaus*. The

music provided is a lead sheet of a melody with a running string of eighth notes and listed chords. Each performer chooses a function as bass, harmony, or melody and can swap between them throughout. After an initial statement of the melody, any performer can repeat any subset of the melody or harmony for any duration. To lean into this concept, I used the constant eighth notes and chromatic inflections for the melody. The module ends when the leader cues the last ending.

7.5 Photo Op

Lewis's "Record and Playback" and Zorn's "Sound Memory" serve to remember and recall music. Inspired by video functions in "Record and Playback," I decided instead of displacing time I would stop time through the idea of a photo opportunity, common at amusement parks. At any point in the performance, the leader can hold up a "Photo Op" sign forcing the ensemble to immediately freeze or sustain what they're playing at that given moment. If the sign is shaken back and forth, this signals a "silly photo" where the ensemble plays cartoonishly separate from any of the previous music, lasting no more than ten seconds. "Photo Op" ends once the sign is lowered, continuing wherever the ensemble left off.

CHAPTER 8: Matter Focused Modules

8.1 Crowd Control

One aspect of pitch not fully explored in the examples examined in Part I is the concept of a pitch field. Pitches are assigned to specific octaves, unlike in a traditional scale where it repeats in every octave and each note can be played in every octave. *American Tokyo Daydream III* has ordered octave designated, whereas Crowd Control gives available pitches with no order. This music is used as “walking” music in between the attractions, or modules. Crowd Control consists of five phases of different pitch fields performed by the entire ensemble. The first field spans several octaves, constructed by stacking the first three notes of a major scale in fifths. Each phase subtracts a few notes from the top and bottom octaves in reference to Daniel Goode’s *Diet Polka*, but involving another dimension by constricting the range of notes. The last phase finishes within one octave of C major (the People’s Key) starting on B. Performers are also instructed to play the pitches at a low volume with a walking tempo. If two players or more play dissonant and close intervals, they are asked to play louder as if they were “bumped into.”

8.2 Teacups

Simulating how a ride would work in real life, there are three “teacups” with three note sets. Each teacup is for an individual performer to use for improvisation. With each set, performers can rotate (in other words, transpose) them as they please. Using the clock-face notation adds to the aspect of “spinning” the cell around. Pitch sets control the interval content being played, in the same way I asked for major chord improvisation in *Personaphrenia*. Each teacup set has one interval that lines up with each of the other two sets for potential overlapping and general tonal similarities.

8.3 Ferris Wheel

Following in the steps of Okazaki and Bruce Arnold, I used a twelve tone row. The row is placed along the rim of a ferris wheel, much like the clock-face in "Teacups," but with different pitch locations. In contrast to the example of Okazaki breaking down the aggregate into three note sets, I provide a full row with an inversion and retrogrades depending on the direction the performer takes.

8.4 Log Flume

"Log Flume" calls for only brass players to improvise using 4ths, 5ths, pentatonics—or to quote the music of Aaron Copland for about a minute. To end the module, all the performers empty their spit valves dramatically.

8.5 Pop Concert

This module is a continuation of my example from *Personaphrenia* with options in differing chord roots. That example altered roots by half step and provided a choice between major seventh and minor seventh chord qualities. When writing the module, I first had to avoid using too many differing chord types with substitutions so that the overall “four chord song” idea stays intact. This includes not adding too many chromatic notes that would add too much dissonance to the overall changing progression. When composing something like this, I had to consider all possible notes sounding at once. To begin the module, a chordal instrument must be included and start off the performance solo with layered entrances from others in the group. In addition to this stipulation, I determined stipulations based on time of day. From 12:00 a.m. to 10:00 a.m., this module cannot be performed. From 10:00 a.m. to 1:00 p.m., it must be rendered

as a solo. 1:00 p.m. to 5:00 p.m., the module can be played by two to three performers. During the hours of 6:00 p.m. to 12:00 a.m., the entire ensemble can play.

8.6 Ring the Bell

In this module, I came up with a word for each letter in “Amusement Park” similar to single colorful words used to advertise for these parks. This is inspired from Bergstrom Nielsen’s *Frameworks 2* where he has single short bursts of descriptive sounds. Each word is cued, and performers then play a sound attributed to that word. The module should be quick and is only for one performer at a time, but it can be played in succession.

8.7 Roller Coaster

While looking at Earle Brown’s *Nov 52*, I realized that aside from the lack of use of notated rhythms, he altered the staff by adding staff lines. For my composition, I did the same in altering the staff, but stuck primarily with five uniquely altered staff lines. This includes a line with the outline of a rollercoaster, a line that spells out a word, one that jaggedly steps down, another that breaks, and one that zig zags. Due to lines crossing over one another in wild directions and the placement of the noteheads, chosen pitches become very interpretive—much like Brown’s work.

CHAPTER 9: Interaction Focused Modules

9.1 House of Mirrors

Taking after George Lewis's *Artificial Life*, House of Mirrors includes prompts to interact with other performers. The performer who signaled to play the module improvises freely. Other participating performers then act as a type of "mirror" of their choosing. These performers imitate the initial improviser but with a filter including "fat," "thin," "cloudy," "wavy," and "upside down."

9.2 People Watching

Interactions between other performers and mediums were looked at in Part I. Missing from this is the interaction with the audience, an important part of a performance. Similar to having a sports game without a crowd to feed energy to the team, performers bouncing off an audience can help a performance. With that in mind, I use the act of "people watching" as a method for improvisation. At the designated "People Watching" spots, a performer can choose a person in the audience and improvise based on their posture and actions. If the audience member being observed notices, the performer is instructed to "act natural" by playing in conjunction with other ensemble members. This adds another device type for interactive improvisation.

9.3 Mascot

A "guerilla system" in John Zorn's *Cobra* "allows a player to become a renegade and play as he/she chooses."⁶⁶ Having performers act independently of restrictions and more in line

⁶⁶Zorn, John. *Roadrunner*.

with the music happening in the moment creates a more cohesive and musical result. In my composition, the “mascot” has the option to act independently with their own rules by either improvising using the main theme or playing as an imitating caricature of another performer of their choosing. The mascot is indicated prior to the performance and designated by wearing something of the performer’s choosing, such as a hat or mask.

9.4 Concessions

Interactions in previous examples only depend on the senses of sight and hearing. With "Concessions," I used the different sense with taste to influence improvisation. Markers for “Concessions” are placed along the map like "Restrooms" and "Souvenirs." When a player reaches one on the map, they have the option to leave the ensemble and eat or drink food that’s provided for "Concessions." After eating and drinking, the performer returns to the ensemble and independently improvises in direct response to how it tasted.

9.5 Fireworks & Finale

When either a certain predetermined time has passed or the ensemble is just ready to end the piece, the leader will signal to go to the Finale. This module includes a slower waltz version of the entrance music to be played alongside visuals of fireworks I made. Half of the ensemble chooses to play and improvise with the theme music or to improvise using the fireworks visual inspiration.

CHAPTER 10: Summary of Orchestration Devices in *Amusement Park*

While touched on it in previous sections, the Orchestration devices as a whole are covered in this section. The overall composition can be for any instrumentation, but modules have requirements in order to be played. “Mascot” can only use one person for the role, “Tunnel of Love” must group performers in pairs, “Teacups” calls for a maximum of three performers, and “Finale” splits the group in half. In addition to these, performers have the choice whether to play a module or not when prompted. Types of instruments are also listed for some modules. “Log Flume” calls for only brass instruments in order to empty their spit at the end. For “Pop Concert,” a chordal instrument must be a part of the ensemble and start off the module alone. The time of day limitations in the module also affect the orchestration ranging from solo to full ensemble.

CONCLUSION

Exploring the examples in Part I organized within Time, Matter, Orchestration, and Interaction categories helped in the process of approaching my own composition. Additionally, connecting *Amusement Park*'s modules to the musical examples in Part I demonstrated and elaborated on concepts discussed as improvisational devices. Adding improvisation to a composition brings fluidity, expression, and variability—and improvisation can be used to blend sections of music. In contrast to fully-composed works, guided improvisation within a composition allows performers to provide their own voice in collaboration. Performers are, in fact, encouraged to bring their individual creative voice when improvising. The collaboration process and the unique qualities of each performance are ultimately what compelled me to look into various ways of inspiring improvisation. This research proved to be an insightful investigation into different methods of utilizing organized improvisation and assisting other composers and performers when using improvisatory devices.

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APPENDIX A: AMUSEMENT PARK SCORE

Welcome to... Astounding Musically Mental Parkour **FUN FOR THE WHOLE INSTRUMENT FAMILY**

* *also known as...* **AMUSEMENT PARK**

= approx. 5 seconds

Musical

Amusement Park Theme (Entrance)

New Orleans Jazz March
(unison)

The musical score is written in 4/4 time and consists of seven staves of music. The key signature has one flat (Bb). The melody is presented in unison. Chords are indicated above the staff.

Staff 1: Measures 1-4. Chords: C7#5, F, E.

Staff 2: Measures 5-8. Chords: F, C7#5, F, C7#5.

Staff 3: Measures 9-12. Chords: F, E, F, C7#5.

Staff 4: Measures 13-15. Chords: F, E, C7#5. This staff includes a first ending bracket over measures 13-15.

Staff 5: Measures 16-18. Chords: E, Eb. This staff includes a second ending bracket over measures 16-18.

Staff 6: Measures 19-22. Chords: A7, D7, Ab7, G7.

Staff 7: Measures 23-26. Chords: Db7, Gb6, Gm7, C7#5, F6.

Amusement Park Theme (Finale)

(unison) Schmaltzy

C7#5 F E

8 F C7#5 F C7#5 F

18 E F C7#5 F

26 1. Vamp 1st Section; Cue 2nd ending last time | 2. E C7#5 E Eb

33 A7 D7

40 Ab7 G7 Db7 Gb6

48 Gm7 C7#5 1. F6 | 2. Bbm F

The musical score is written in treble clef with a key signature of one flat (Bb) and a 3/4 time signature. It consists of seven staves of music. The first staff begins with a unison instruction and a 'Schmaltzy' tempo marking. The second staff starts at measure 8. The third staff starts at measure 18. The fourth staff starts at measure 26 and includes a first ending bracket labeled '1. Vamp 1st Section; Cue 2nd ending last time' and a second ending bracket labeled '2.'. The fifth staff starts at measure 33. The sixth staff starts at measure 40. The seventh staff starts at measure 48 and ends with a double bar line. Chord symbols are placed above the notes to indicate harmonic accompaniment.