THE CRIBBAGE VARIATIONS

by

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This paper discusses and analyzes my dissertation composition *The Cribbage Variations*, which is a set of fifteen variations based on the tone row from Anton Webern’s *Concerto for Nine Instruments* (1934), op. 24. I first offer a brief overview of the history of the genre of variations in general before discussing *The Cribbage Variations* in particular.
DEDICATION

This paper is dedicated to my mother, Denise Opperman.

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Chapter 1: A Historical Overview of Variations

1. **Defining Variations**

Variations, or theme and variations, is a genre that has intrigued composers and listeners of Western European art music for centuries. Elaine Sisman defines variations as “a form founded on repetition, and as such an outgrowth of a fundamental musical and rhetorical principle, in which a discrete theme is repeated several or many times with various modifications” (Sisman 2001, 1). Sisman suggests that models for variation may have risen from rhetoric. For instance, students of acting will perform rhetorical exercises where they will drastically change the meaning of a statement or question by focusing on a different word with each performance: “Where is the dog?” “Where is the dog?” “Where is the dog?” While syllabic emphasis does not have a direct analogue in music, which has its own rhetorical language, one can easily imagine that taking a four-note melody and accenting a different note in it will change the way it is perceived by listeners (depending, of course, whether the other musical parameters make that distinction possible).

Sisman identifies eight primary types of variations that composers explore:

1. **Ostinato variations**, usually with a repeating bass line. Examples include Bach’s Passacaglia in C minor and Pachelbel’s Canon in D major.

2. **Constant-melody or cantus firmus variations**, in which a widely known melody appears intact or only with minor embellishments. Mozart’s lovely *Twelve Variations on “Ah vous dirai-je, Maman”* is probably the most famous example of this type.

3. **Constant-harmony variations** as in Bach’s *Goldberg Variations*. 
4. Melodic-outline variations in which the theme’s melodic contour is relatively intact despite embellishment, simplification, or rhythmic changes. This category includes variations whose harmonies remain fairly consistent throughout (late 18\textsuperscript{th} century) and those whose harmonies change from one variation to the next (early 19\textsuperscript{th} century). This type often features melodic reprises with figurations in another voice. Many 18\textsuperscript{th}/19\textsuperscript{th} century sets of this type are mixed with constant-harmony variations.

5. Formal-outline variations. Freer overall than many of the previous types, this form, common in the 19\textsuperscript{th} century, has phrase lengths that vary over time. Further, the harmonic structure typically references the theme at the beginning and the ending but not necessarily in the middle of each variation. Occasionally, the only consistencies between variations are parts of the form and/or phrase structure. Sometimes the theme is readily apparent and easy to follow and other times it is not. Beethoven’s \textit{Diabelli Variations} op. 120 is the most famous set of this type.

6. Characteristic variations. The variations take on the character of different dance pieces, stylistic topics, or even programmatic associations. Within these types of sets can appear variations of the 3\textsuperscript{rd}, 4\textsuperscript{th}, and 5\textsuperscript{th} types. These types have appeared throughout the centuries and this type is considered to be an enduring form. Examples include Alessandro Poglietti’s \textit{Rossignolo} (1677) and Benjamin Britten’s \textit{Variations on a Theme by Frank Bridge}, op. 10 (1937).

7. Fantasy variations. In this 19\textsuperscript{th}/20\textsuperscript{th} century type, the variations often greatly depart from any obvious similarity with the theme. George Perle composed an example of this type in a 1971 solo piano work aptly named “Fantasy-Variations.”

8. Serial variations. Invented nearly concurrently with Arnold Schoenberg’s twelve-tone procedures, while the thematic material is typically constant, this 20\textsuperscript{th} century
invention consists of a “modification of a serial theme in which figuration and accompaniment are derived from the row.” This type of variation differs from other variation types since the music is derived from an abstract row rather than from a traditional theme. Examples include the third movement of Schoenberg’s *Serenade*, op. 24, and the second movement of Webern’s *Symphony*, op. 21.

Sisman admits that assigning and identifying formal variation types is more fraught than it may appear since most sets, especially more modern ones, are more likely than not to contain multiple types. However, these categories are wholly sufficient for discussing many important works within the genre. In the remainder of the chapter, I will discuss three important historical examples of variations: Frescobaldi’s *Aria detta la Frescobalda* of the melodic-outline type, Bach’s *Goldberg Variations* of the constant-harmony type, and John Cage’s *Variations*, which are sui generis. Then, I will outline my own piece, *The Cribbage Variations*.

2. **Frescobaldi - *Aria detta la Frescobalda* and other works**

Italian Baroque composer Girolamo Frescobaldi (1583 – 1643) was “celebrated in his lifetime as the greatest Italian performer, improviser, and composer for the organ and harpsichord” (Hammond 1991, 147; Hammond & Silbiger 2001, 1; Taruskin 2010 vol. 1, 821). Although he was from Northern Italy, his compositional techniques relied more on the Neapolitan school than the Venetian one.¹ For instance, while composers of Southern Italy typically developed their subjects in a single, unified section,

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¹ There is some debate among scholars of Apel’s assertion here (Hammond & Silbiger 2001, 2).
Frescobaldi’s sections are clearly delineated. Some of his most important subject treatments throughout his keyboard music include diminution, augmentation, triple meter, chromaticism, and occasionally modulation, all of which typically follow a concluding cadence (Apel 1972, 450).

Although still a nascent form in the 17th century, creating sets of variations was a normative part of Frescobaldi’s compositional process. In Italy, Frescobaldi was the foremost composer of variations, including them in genres that would not easily lend themselves to that treatment – suites, capriccios, canzonas, and the like (Sisman, 20, 2001). The canzona, specifically, was a form that Frescobaldi was especially fascinated by. Its “lightness, vivacity, and changeability offered an especially appropriate field for his fiery temperament and inexhaustible imagination” (Apel 1972, 455).

When performing his own works, Frescobaldi was a flamboyant/theatrical performer, especially when presenting his two most idiomatic styles – variations over a ground bass and “formally capricious, unpredictable toccate” (Taruskin 2010 vol. 2, 36). These performances inspired contemporaneous musicians like violist André Maugars to also dazzle Rome with their own virtuosic improvisational performances. Taruskin describes the scene as similar to 20th century jazz musicians: instrumentalists who predominantly improvised based on “standards” or favorite tunes of the day (Taruskin & Weiss 1984, 194) albeit the 17th century musicians performed in presumably dry churches as opposed to 20th century bars and clubs. In a letter, the aforementioned Maugars describes Frescobaldi’s performances thusly:

2 According to Taruskin, the 17th century was the first time a major composer could find success dealing primarily with instrumental works (Taruskin 2010 vol. 2, 36).
Most impressive of all was the great Frescobaldi displaying a thousand kinds of inventions on his harpsichord while the organ stuck to the main tune. It is not without justification that this famous organist of St. Peter’s has won so great a reputation in Europe; for, although his printed works give evidence of his skill, still, to get a true idea of his deep knowledge, one must hear him improvise toccatas full of admirable refinements and inventions. That is why he deserves to be held up as a model for our organists, to make them wish to come to Rome to hear him” (Taruskin & Weiss 1984, 196).

Frescobaldi’s *Secondo libro di toccate* (1627), contains four sets of variations including the *Aria detta la Frescobalda*, which has five variations. From the title, we can conclude that the variations are built on a melody of the composer’s own design and not based on a popular tune of the day.

![Example 1.2.1. Main theme *Aria detta la Frescobalda* by Frescobaldi, approx. 1627](image)

The theme has an irregular AAB structure: two instances of a five + four measure phrase followed by one instance of a three + four measure phrase. While Abel extols the virtues of Frescobaldi’s writing here and commends him for the lack of virtuosic passagework, given the environment in which it was composed and Frescobaldi’s
seeming general attitude towards performances of his works by other players,³ it is equally likely that Frescobaldi left space so future performers could choose whether to include their own virtuosic embellishments. The fluidity of the phrasing suggests that the performer should be equally fluid in their rhythmic/melodic interpretation. Furthermore, the harmonic structure of the theme (wandering from D minor to the relative key of F major at the conclusion of A and then back to D minor at the conclusion of B) leaves a lot of room for harmonic exploration.

Later in his career in 1637, Frescobaldi composed the Cento partite sopra passacaglia or “A Hundred Variations on Passacalles,” which consists of “78 actual passacaglia or varied two- or four-bar cadence figures alternate first with a corrente and then with some forty ciaconna progressions, producing a total far in excess of one hundred, from which the player was invited to choose ad libitum” (Taruskin 2010 vol. 2, 39). The Cento partite also pushed boundaries of chromaticism (from D♭ to D♯) (Hammond & Silbiger 2001, 17) and even later works (presumed to be by Frescobaldi although notated in the hand of his assistant Nicolò Borbone) extended the chromatic compass further (from A♭ to A♯) (Hammond & Silbiger 2001, 19).

³ In the preface to his Cento partite sopra passacaglia discussed later, Frescobaldi wrote, “the passacaglias can be played separately, in accordance with what is most pleasing, by adjusting the tempo of one part to that of the other, and the same goes for the ciaconnas (Hudson 1981, 237). Similar rhetoric appears in the first edition of his Toccata E Partite, Primo Libro (1615) (Apel 1972, 456-457). Further, allowing performers to decide which variations they wish in whatever order they choose presages similar attitudes in what would become the indeterminate music of composers like John Cage several centuries later.
3.  **Bach – The Goldberg Variations**

Johann Sebastian Bach (1685 – 1750), still considered by most to be one of the greatest composers in Western music history, composed a set of variations in 1741 as part of his *Clavier Uebung* called *Aria* that was eventually renamed *The Goldberg Variations* during the 19th century after one of Bach’s pupils, Johann Gottlieb Goldberg who allegedly commissioned it on behalf of his patron, Russian ambassador Count Kayserling (Forkel 1802, 147; Taruskin 2010 vol. 2, 383). This story originated in the early 19th century in a book by German historian Johann Forkel (Schulenberg 1992, 319). This book, *Ueber Johann Sebastian Bachs Leben, Kunst and Kunstwerke*, contains stories directly told by Bach’s eldest sons, Wilhelm Friedemann and Carl Phillip Emanuel (Stauffer 2001, 3).

![Cover Page of Clavier Uebung](image.png)

**Example 1.3.1.** Balthasar Schmidt’s handwritten cover page of *Clavier Uebung* (note that the name Goldberg or Goldberg Variations does not appear)

According to David Schulenberg, Bach envisioned this work to interact with the then centuries-old tradition of encyclopedic variation sets for keyboard by using the
ground bass of a strophic dance-tune to generate these variations. Furthermore, the title “Aria” for the opening movement may be a reference to pieces that inspired previous variation sets by other composers, as in Frescobaldi’s partite on the Aria di Romancesca (Schulenberg 1992, 319). Further, Robert Marshall asserts that The Goldberg Variations is the single most ambitious keyboard work of the 18th and early 19th centuries until the publication of Beethoven’s Hammerklavier Sonata and the Diabelli Variations (Marshall 346, 1976).

Although Bach may have been partially inspired by Frescobaldi’s work, there is less explicit stylistic diversity between Frescobaldi’s variations and Bach’s. For example, most of Frescobaldi’s variations have labels such as “gagliarda” to denote stylistic intentions while only the canons and a few other selected Goldberg Variations have such designations. There is clearly a greater focus on complex polyphony in Bach, that as mentioned, was not available in Frescobaldi’s time.

The Goldberg Variations begins with the statement of the Aria melody, although, as is well-known, the actual theme is the thirty-two measure ground bass figure which accompanies it. After the Aria comes thirty variations followed by a reprise of the Aria.

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4 A young J.S. Bach copied out Frescobaldi’s 1635 piece Fiori musicali further corroborating Bach’s interest in Frescobaldi’s music (Carter 1984, 383).
5 There was some speculation among Bach scholars in the late-20th century, especially Frederick Nuemann, that the Aria melody was not composed by Bach himself. In his 1985 article “Bach: Progressive or Conservative and the Authorship of the Goldberg Aria” (itself a response to Robert Marshall’s 1976 article “Bach the Progressive: Observations on His Later Works”), Neumann states that he “purely instinctively” suspected that Bach didn’t compose it and “was delighted” when he discovered that Bach scholar Arnold Schering also repudiated the attribution and declared it to be “un-Bachian.” Neumann even relates a story about telling his mentor Arthur Mendel, who was a dean of American Bach scholars, his suspicions. Mendel considered it and said, “You are absolutely right, it is a piece of French fluff” (Neumann, 290, 1985).

Robert Marshall responded to these claims in his 1989 book The Music of Johann Sebastian Bach: The Sources, the Style, the Significance as follows:
for a total of thirty-two movements. The thirty variations are set in groups of threes: two variations followed by a canon-variation, where the canonic imitation increases incrementally by step, from unison (Variation 3) to a ninth (Variation 27) (as demonstrated in example 1.3.4). Most of the variations are constructed in the same way: 32 bars of an A section of 16 bars followed by a B section of 16 bars with both sections repeated; Variations 3, 9, 21, and 30 are notated in half those amounts (16 bars divided into 8 and 8). Variation 21, the “Ouverture,” comprises a 16-bar A section in 2/2 (a prelude) and a 32-bar B section in 3/8 (a fugue).

The real object of Neumann’s charge, “un-Bachian,” however, is the right-hand melody. One is free of course to like the melody (as I do) or not, as one will. It is obviously invalid, though, to decide the question of Bach’s authorship on that basis. And it is equally invalid to deny its authorship on the ground that it is “un-Bachian.” Style criticism is a notoriously unreliable tool for the resolution of authenticity questions…. There is in fact a strong indication that the melody was composed – in the latest French style, why not? – by Bach. For Bach rarely failed to supply attributions when copying works by other composers or, indeed, even when borrowing themes for variation and elaboration. […] Sebastian was quite scrupulous about adding an attribution. […] In light of this, is it at all credible that Bach would have failed to provide the name of the composer of the “Goldberg” aria when he submitted his colossal set of variations for publication, if it had been anyone other than himself?” (Marshall, 57-58, 1989).

6 There are three bars of transitionary material at the outset of the B section with the normative ground bass progression beginning at m. 19 instead of m. 16, which might be why Bach scored it in 3/8 rather than 6/8.
Example 1.3.2. The first two bars of the 3rd, 9th, 21st, and 30th of Bach’s Goldberg Variations with dashed barlines in the middle of each bar.

Bach scholar Owen Jander, in his 1966 article “Rhythmic Symmetry in the Goldberg Variations,” points out that the time signatures of the nine canons are tied to a new symmetry based on underlying rhythm (Jander 1966, 190). Example 1.3.4 gives the time signatures for the nine canons. One can see that they are mostly symmetrically arranged with triple meters in the first and last two canons, common time in the 3rd and 7th canons, and with some miscellaneous meters in the middle. Further, all the time signatures are unique except in the common-time 3rd and 7th canons.
Example 1.3.3 - the structure of Bach’s canons in *The Goldberg Variations*

Further, Jander demonstrates an even deeper level of rhythmic interplay, that each of the nine canons features a different set of beats and sub-units to complete a kind-of rhythmic square. Thus all the possibilities from 2 x 2 to 4 x 4 are represented, creating additional symmetry. Jander says this stems from Bach’s love of games with numbers, which he utilized musically on many occasions (Jander, 1966, 190-193).

4. Cage - Variations

Along with similar transformations in technology and other areas, music was in revolution in the 20th century. Arnold Schoenberg’s teleological moves (extending from late period Liszt and other sources) from free atonality to his twelve-tone techniques (as utilized in his own *Variations for Orchestra* (1928), op. 31, which was his first twelve-tone composition for a large ensemble) inspired countless composers in the latter-half of the 20th century and beyond.

Schoenberg’s “emancipation of the dissonance” encouraged some composers, like Olivier Messiaen and Milton Babbitt, to expand Schoenberg’s techniques regarding
pitch class to other musical elements. However, one of Schoenberg’s students from UCLA and USC, John Cage, would take his ideas in a very different direction. In his 1984 Darmstadt lecture, Morton Feldman opined, “John Cage studied with Schoenberg. And that’s why his work is continual variation. His whole life is based on the teachings of Schoenberg, gone another way” (Feldman 1984, 6).

Cage took eight classes with Schoenberg at USC and UCLA and did not pay for any of them, as Schoenberg accepted Cage’s promise to devote his life to music as payment in full, as he did for other students who could not afford his services (Hicks 1990, 128). It is clear from reading interviews with Cage that his time with Schoenberg was incredibly influential, but this quote is particularly revealing on the topic of variations:

You know Schoenberg said that everything is repetition – even variation. On the other hand, we can say that repetition doesn’t exist, that two leaves of the same plant are not repetitions of each other, but are unique. Or two bricks on the building across the street are different. And when we examine them closely, we see that they are indeed different in some respect, if only in the respect of how they receive light, because they are at different points in space. In other words, repetition really has to do with how we think. And we can’t think either that things are being repeated, or that they are not being repeated. If we think things are being repeated, it is generally because we don’t pay attention to all the details. But if we pay attention as though we were looking through a microscope to all the details, we see that there is no such thing as repetition. (Kostelanetz & Cage 1987, 115)

Cage composed eight sets of variations between 1958 and 1967. The score for the first variation is marked “for any kind and number of instruments.” The second “for any number of players and any sound producing means.” The third “for one or any number of people performing any actions.” The third was often performed as a solo performance by Cage himself (Miller 2009, 60).

The instructions page for Variations III reads like one is setting up a complex board game:
Two transparent sheets of plastic, one having forty-two undifferentiated circles, the other blank. Cut the sheet having circles in such a way that there are forty-two sheets, each having a complete circle. Let these fall on a sheet of paper 8 ½ x 11. If a circle does not overlap at least one other circle, remove it. Remove also any smaller groups of circles that are separated from the largest group, so that a single maze of circles remains, no one of them isolated from at least one other. Place the blank transparent sheet over this complex.

Starting with any circle, observe the number of circles which overlap it. Make an action or actions having the corresponding number of interpenetrating variables (1 + n). This done, move on to any one of the overlapping circles again observing the number of interpenetrations, performing a suitable action or actions, and so on.

Some or all of one’s obligation may be performed through ambient circumstances (environmental changes) by simply noticing or responding to them.

Though no means are given for the measurement of time or space (beginning, ending, or questions of continuity) or the specific interpenetration of circles, such measurement and determination means are not necessarily excluded from the “interpenetrating variables.

Some factors though not all of a given interpenetration or succession of several may be planned in advance. But leave room for the use of unforeseen eventualities.

Any other activities are going on at the same time.

Cage scholar Christopher Shultis points out that the use of transparency scores – literally, a letter-sized sheet of transparent plastic adorned with circles – in Cage’s variations ensured that the compositions would stay indeterminate. Even in a score that is notated using chance procedures, once that score is notated, it is in a fixed state. In Variations III, the number of interpenetrating circles would change from performance to performance. “While fixity still exists in Cage’s transparency scores, the variables are so multiple (hence the title ‘variations’) it would be next to impossible to determine what exactly will be fixed and what will remain open” (Shultis 1995, 322).
So what is the theme upon which Cage’s variations are performed? One could reasonably argue that it is sheer sound, and one could reasonably argue that it is also silence. At the outset it would appear that these variations are not encyclopedic like the Frescobaldi, the Bach, or other famous variation sets (like Mendelssohn’s Variations sérieuses, op. 54 or Beethoven’s Diabelli Variations from the 19th century). However, what could be more encyclopedic than a variation set in which every possible sound could be accessed? Furthermore, there is nothing preventing one from choosing “perform a Frescobaldi variation” as one of their actions in Cage’s piece.

5. **Opperman – The Cribbage Variations**

The Cribbage Variations is a series of fifteen named variations that I based on the tone row from Anton Webern’s Concerto for Nine Instruments (1934), op. 24, and composed for the same nine instruments: flute, oboe, clarinet, French horn, trumpet, trombone, piano, violin, and viola. The names of the fifteen movements are: I. “Of Streets and Spillikins,” II. “The Shuffle,” III. “Jazz Noize,” IV. “Mid-December Winds,” V. “Babbitt Time!,” VI. “The Deal,” VII. “At the Grave of Anton Webern,” VIII. “The Play,” IX. “Level Pegging,” X. “Lunn,” XI. “Muggins,” XII. “The 144,000,” XIII. “Knock Knock Bach,” XIV. “75 Raindrops,” and XV. “The Show.” Although Sisman would primarily consider these serial variations, they also have elements of melodic-outline variations and characteristic variations. The piece was completed in August 2017 and was premiered and recorded by the Helix! New Music Ensemble under the direction of Kynan Johns at the Mason Gross School of the Arts in November 2017.

The initial inspiration for the piece came from an e-mail I received from my friend, electric bass guitarist Scott Thunes, while doing research on Frank Zappa’s
orchestral work "Dupree’s Paradise." While on the Zappa 1988 Broadway the Hard Way World Tour, Thunes found himself wishing Webern’s piece was longer and thus attempted to commission a piece with this instrumentation from a bandmate. However, this said bandmate was more interested in playing cribbage on the bus than composing a piece for Thunes. I read this e-mail and wondered what it would sound like if I composed a work that combined twelve-tone music with the numerological ideas of cribbage. I laughed and got to work.

**Example 1.5.1:** Matrix based on Webern, op. 24 used to compose *The Cribbage Variations*

Although the precompositional thoughts for my works prior to this piece were often limited to considerations of instrumentation, general style, or story/plot/program points, due to the nature of the twelve-tone matrix and that the music would be partially generated based on the rules of a card game, I set a few rules to govern the creation of the piece:
1. All of the variations must derive from Webern’s tone row from Webern’s *Concerto for Nine Instruments*, op. 24 (making that row the “theme” upon which the variations would be written).

2. All of the row statements should be complete.\(^7\)

3. The use of secondary tone rows are forbidden. Furthermore, no purposeful attempt should be made to obfuscate the identity of the active row(s) and their position(s) in the matrix.

4. Pitches within the row can be repeated as long as they stay in order and that the row is eventually completed.

5. Whenever musically appropriate, the rhythmic information should be informed by the rules of cribbage, with a focus on the numbers 15 and 31. To this end, I created an Excel spreadsheet called “Table of Rhythms with Unique Integers (1-11) That Equal 15.”\(^8\)

<table>
<thead>
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</thead>
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<tr>
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</tr>
<tr>
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</tr>
<tr>
<td>3  3  4  5  4  5 11 10  9  8  4</td>
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<tr>
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<tr>
<td>5  6</td>
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</tr>
<tr>
<td>15 15 15 15 15 15 15 15 15 15 15</td>
</tr>
</tbody>
</table>

**Example 1.5.2:** Table of Rhythms with Unique Integers (1-11) That Equal 15

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\(^7\) While the vast majority of row statements in the piece are complete, there are some exceptions, most notably in var. 13, the fugue “Knock Knock Bach.”

\(^8\) Although I created a similar table for the number 31, I abandoned it after playing several games of cribbage on my iPad for research. Although 15’s abounded in the games, 31’s were much rarer. Also, in practice, I tended to be strict about having 15-based rhythms in certain variations, and not at all strict in others where the rhythmic table was not the focus.
6. All of the variations will be presented in the order that they are composed. This was another deviation from my standard practice; I typically work on several parts of the same piece (and other pieces) simultaneously. This process helped the piece greatly since it allowed the variations to grow organically in terms of complexity, ambition, and acumen.⁹

⁹The exception to this was var. 15 which was partially conceptualized and sketched out after var. 6 was finished, but then immediately abandoned until var. 14 was complete when it became clear that it would be the final variation.
Chapter 2: Analyses of the Individual Cribbage Variations

1. “Of Streets and Spilikins”

The first variation is one of several that deal programmatically with the actual playing of a game of cribbage. Even people who have never played before are often at least familiar with the unique look of the cribbage board. It has a sort-of round track with sequential holes in it that are referred to by players as “streets” and brightly colored pegs that are used to keep track of the current score that are referred to as “spilikins.”

In some ways, the board and the game can be seen as an allegory for life itself. We, the players, all begin in the same place (non-existence) and end in the same place (death). We wander through life sequentially through time down winding paths. Some days we play a hand that helps to propel us forward and sometimes we play a succession of hands in which we are unable to make much progress, even through sincere effort. The other players in the game typically progress at different rates from us; some faster, some slower. However, it is impossible in cribbage to play a hand that makes your in-game position worse, so in that way it is kinder than actual life.

Example 2.1.1. The Cribbage Variations, var. 1, opening trombone solo, mm. 1-8

This opening variation begins in a traditional way with a trombone solo statement of the P0 version of the row (essentially the “theme” upon which the
variations are built). There are also exactly fifteen attacks. The stated trombone pitches were built into accompanimental trichords: B, B♭, and D in the woodwinds (m. 2), E♭, G, and G♭ in the strings (m. 4), and A♭, E, and F in the brass (mm. 5-6). At its conclusion, the piano sounds all four trichords to end the first variation and segue into the second one.

2. “The Shuffle”

There are three main phases in a round of cribbage: the deal, the play, and the show. However, before the cards are dealt out, as in any luck-based card game, they need to be sufficiently randomized. In 1992, Bayer & Diaconis proved mathematically that although most people only shuffle cards three or four times, it takes seven imperfect riffle-style shuffles to fully randomize a deck (meaning to reach a state where any of the 52 cards could occupy any of the 52 available slots) (Bayer & Diaconis 1992, 294-313).

At the point where the cards are being shuffled, there are 52! possible resulting deck configurations and all hands are available. Once the deck has been cut and handed to the dealer for distribution, the 52-card order becomes a certainty. Also, only the top twelve or eighteen cards (depending on the number of players) will be in play, greatly reducing the number of possible hands. Once each player has received their six cards, everything shifts from a state of probability to a state of certainty. Those are the six cards the player was destined to have, although they have the free will to send a couple to the crib. At that point, the player’s success is determined by how well they anticipated their opponent’s cards.

This can be seen as an allegory for both the creative process and life. Before one has an artistic idea, there are a nearly infinite number of possibilities that idea could be (albeit based on time, place, environment, personal preferences/biases/predilections,
and a host of other factors). Once the spark occurs, there is a probability that one will either almost immediately abandon the idea, that one will work on it until it is somewhere from 0.1 - 99.99% complete and then abandon the idea, or that one will work on the idea until it is complete (or at least presentable). There is a probability that the art will turn out exactly the way one envisioned it at the beginning although probably a greater probability that it will turn out differently or branch out in ways not previously contemplated.

For instance, in equal temperament music, when a composer is making a “move” and selecting a pitch for their work, at a base level, they have 13 choices: either any of the twelve pitches of the chromatic scale or no pitch/a rest. Any further probabilities would be based on time and place. For instance, if J.S. Bach was working on a diatonic piece in C major and begins with the note G, the probability of the next pitch being C or A is significantly higher than the probability of choosing any other pitches (with A♭ or C♯ being highly improbable). However, composers like Milton Babbitt, Anton Webern, or Arnold Schoenberg would see more pitches available and have an increased and vastly different probability spread (often eschewing major and minor triads in favor of more dissonant combinations in an effort to maximize chromatic saturation).

It is also an allegory for life. Although our births and deaths are certainties, our very existence is the result of innumerably improbable events going back over hundreds of generations. Our ancestors coupled and played one (or more) cards at a time, surviving through all the disparate elements and challenges to play another card, resulting in the eventual miracle that has been our birth. In the Twenty-Eight Categories
of Yogic Precepts, the First Cause of Regret is “having obtained the difficult-to-obtain, free, and endowed human body, it would be a cause of regret to fritter life away.”

The music was designed to represent the primordial stages of shuffling, creativity, and life. This variation is based entirely on $P_0$ and has three variations (or “shuffles”) of the same two phrases (example 2.2.1). The first phrase begins at mm. 10 with a full statement of $P_0$ shuffled amongst all the instruments in a long, legato fashion a quarter note at a time until the piano comes in and completes the row in mm. 12. At this point, the entire row is sounding simultaneously, and maximum chromatic saturation has been achieved. There is a crescendo into a chord on beat four of mm. 12 and after some ornamentation the second phrase starts in beat three of mm. 15 with a beautiful $A^b$ major chord in the trumpet, clarinet, and flute. The piano then closes out the section and the row.

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10 A Buddhist Bible, 600.
11 At the time the piece was written, I was not aware that more than three shuffles were needed to fully randomize a deck of cards, so there are only three shuffles represented here.
Example 2.2.1. Organizational structure of var. 2

The final phrase has an extended passage in the piano at its conclusion with a loud low register D♭ doubled by the trombone with a traditional triple-hammer blow and a fermata signaling the end.

3. “Jazz Noize”

This is the first of several variations that are tributes to other composers that I love and were built using their compositional techniques or styles. This movement was inspired equally by Frank Zappa and Milton Babbitt, specifically the snarky jazz vibe from “Big Swifty” on Zappa’s 1991 Make a Jazz Noise Here album\(^{12}\) and Babbitt’s 1957 bebop work All Set. The Babbitt piece in particular aptly demonstrated that twelve-tone musical composition could successfully accommodate any musical style if executed appropriately, and overall this philosophy was a great inspiration to me for many of these variations.

\(^{12}\) This recording was compiled from several performances from the 1988 World Tour mentioned at the beginning of the paper and also features a similarly compiled performance of “Dupree’s Paradise.” My research on “Dupree’s Paradise” is what sparked the initial e-mail to Thunes that inspired this work.
Example 2.3.1. Piano cluster chord [01239] built from the matrix.

This accompaniment to this short and somewhat sarcastic variation is constructed from a “jazz” chord voicing (“minor” with an added b9, 9, and a 13 substituting for 5) built from several different versions of the primary row (P₀, P₁, P₂, P₃, and P₉). Those five prime rows were then run in sequence together in order to create a jazzy “chord progression” over which the piano player plays syncopated “comping” patterns for the other musicians to respond to.¹³

The melody is simply an orchestrated version of P₀ with jazzy rhythms passed between the melodic instruments.

4. “Mid-December Winds”

This variation was inspired by the music of French composer Olivier Messiaen, specifically his usage of the isorhythmic motet, a compositional method from the Ars Nova period.¹⁴ An isorhythm is a type of canon made up of two elements: the talea, or rhythm, and the color, or melody. Each of the two elements has a different number of items and they proceed in order. Here is a simple one:

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¹³ I did my best to emulate what I believe Zappa keyboardist Robert Martin would have played over the progression.

¹⁴ Using medieval compositional techniques seemed especially appropriate given that Webern’s dissertation was on the music of Renaissance composer Heinrich Isaac.
Example 2.4.1. A simple isorhythm

There are three rhythmic values in the talea (quarter note, dotted quarter note, eighth note) and four pitches in the color (F, E, B, and C). After twelve (3 x 4) attacks, all possible permutations of the canon are sounded. This is a compositional technique used by Messiaen very often in his works including *Quatuor pour la fin du temps* and *Harawi*.

The title of this variation, “Mid-December Winds,” is literal. In American nomenclature, the middle date of December is expressed as 12/15, or the 15th day of the 12th month. The music is driven by a modified version of an isorhythm where three sets of 12 pitches are attached to three sets of 15 rhythmic attacks all performed by woodwinds. Instead of a traditional talea, all of the rhythmic values are 16th notes with different numbers of attacks over four phrases that add up to 15 (as per table 2.2). Since rests were assigned a value of 0, they were used fairly freely but consistently as punctuation between rhythm groups.

In keeping with the “winds” theme, this is a woodwind trio. Here is the entire variation:
Example 2.4.2. The Cribbage Variations, var. 4 “Mid-December Winds”
The flute from mm. 53 – 59 repeats row R₁ as the color and has a pattern of 2 + 3 + 4 + 6 sixteenth notes (this entire sequence is then repeated from mm. 60 – 66) as the talea. The oboe from its entrance at the middle of mm. 56 – the middle of mm. 62 repeats row R₈ as the color and has a pattern of 1 + 2 + 5 + 7 sixteenth notes as the talea. Most of the sequence is then repeated from the middle of mm. 62 until it is interrupted in the middle of mm. 66 for dramatic effect. The clarinet from its entrance at the middle of mm. 59 – the middle of mm. 65 repeats row R₃ and has a pattern of 4 + 2 + 1 + 8 sixteenth notes. The clarinet’s sequence does not repeat.

Musically, and as will be the case with a few of the other variations, the most difficult part of putting this together was finding ways to stay true to the rows while also trying to minimize dissonance between the voices in order to make it sound “breezy.” It took a concerted effort to have “consonant” (or at least not sharply dissonant) intervals between the voices on downbeats whenever possible in order to achieve the effect.

5. **“Babbitt Time!”**

This variation is essentially a practical joke that I played on myself. I wanted to utilize another of Babbitt’s techniques, specifically his ideas about serializing rhythm with the time-point system. It was invented as a method of serializing rhythms in 1962, which he discussed in his article “Twelve-Tone Rhythmic Structure and the Electronic Medium.” The way it works is that each pitch is assigned a specific attack point in a bar. In a bar of 3/4, there are twelve sixteenth-note attack points, so each note of the chromatic scale can be assigned to a specific sixteenth-note position in the bar (Babbitt 1962, 53). Since Webern’s row begins on B, I used C as the starting note on the first
sixteenth-note (being one half-step away from B), leaving the 12th position to B (octave equivalency), so the pitches were assigned to the following positions:

Example 2.5.1. Time point assignments for “Babbitt Time!” in The Cribbage Variations

This is not quite the scientific way that Babbitt describes and uses the system but is a variation on his technique. Then, I decided it would be interesting to see what would happen if I assigned all twelve versions of the prime row to different instruments (assigning four to the piano separated by register) and ran them simultaneously through the time-point system. I assigned the rows as follows in order to make it sound interesting timbrally by having different attack distances between the general instrument groups:

- Flute: $P_0$
- Clarinet: $P_7$
- French horn: $P_{11}$
- Oboe: $P_6$
- Piano RH: $P_1, P_9$
- Piano LH: $P_4, P_2$
- Trumpet: $P_8$
- Violin: $P_3$
- Viola: $P_5$

Then I wrote out the result for each instrument in staccato in order to give space to all the instruments. Here is the resulting flute part:

Example 2.5.2. The Cribbage Variations, var. 5, flute part mm. 68-73

\[\text{\textsuperscript{15}}\text{It is worth noting here that a row statement in the time-point system is not usually coincidental with the same row statement in pitch classes.}\]
When I finished assigning the rows and programmed everything into the computer, I was surprised by what should have been a mathematically predictable result: a series of octave-displaced rising chromatic scales that only begin to fizzle out once the individual instruments finish sounding their rows.

![Musical example](image)

**Example 2.5.3. The Cribbage Variations, var. 5, piano reduction mm. 68**

I thought it was very funny and that it gave the work a much-needed moment of levity, so I decided to keep it and then repeat it in retrograde. I also liked that, due to the octave displacements, it sounded as if it were continually rising (or descending in the second half). The measures at the beginning and the middle (mm. 67 and 74) were constructed using the first note of each of their assigned rows (whether prime or retrograde) and then the final measure is identical to mm. 67 as a segue into the next variation. These transition bars also make the variation exactly fifteen measures.

At the time, I resolved to use the time-point system in another movement, perhaps something legato/lyrical, in order to pay better/more accurate tribute to Babbitt (and demonstrate what I had learned in the interim), but when it came time I used a variation of different Babbitt procedures instead.

6. **“The Deal”**

This is the next variation to deal directly with the ongoing game of cribbage. In
cribbage, the deal phase is where the players are dealt their cards and then decide which card(s) to put in the crib before the play phase begins. In a three-player game, all players are dealt five cards. This procedure is simulated in the music in this variation.

This time the 15’s appear metrically in the mixed meter time signatures. For example: $7/8 + 4/4$ (for 15 eighth notes) from mm. 82 – 105, $7/16 + 2/4$ (for 15 sixteenth notes) from mm. 106 – 117, and $7/16 + 7/16 + 7/16 + 3/4 + 3/4$ (for 45 sixteenth notes) from mm. 118 – 127.

Other than the time signatures, the music is fairly straightforward, with an important caveat. Although rule #4 dictated that pitches may be repeated as long as they stay in order and the row is then completed, that rule is broken very slightly in this variation:

\[ \begin{align*}
\text{Example 2.6.1. The Cribbage Variations, var. 6, violin part mm. 82 – 85} \\
\end{align*} \]

Here is the main motive of the variation as sounded by the violin at the beginning. Although it is built from $P_0$, there are two “extra” notes (in parenthesis) that are repeated when they should either be accompanied with the next sequential pitch or omitted. I just thought it sounded hipper this way and since it did not also break rule #2 regarding complete row statements, I left it.

The variation begins at mm. 82 with $P_0$ in the violin and $P_3$ in the viola with a B pedal (from $P_0$) in the left hand of the piano in order to give the music some bass. Since there are repeated notes, it takes twenty-eight attacks to complete the row.

\[ 16^\text{th} \text{ Like any respectable composer, I tried to break all my rules at least once.} \]
The timbre switches to brasses (the next players to receive a card from the dealer) from mm. 86 – 89 with $P_2$ in the French horn part and $P_{11}$ in the trumpet part with a B♭ pedal (also from $P_{11}$) in the trombone.

The woodwinds are dealt the next card. $P_3$ is present in the flute part paired with $P_6$ in the oboe part with a D pedal (from $P_3$) in the clarinet and low piano (to buoy the bass).\(^{17}\) With that, everyone has received their first card.

The dealer begins dealing the second card to the players starting with the strings and piano from mm. 94 - 97. The violin has $P_4$ this time, while the viola has $P_7$. The piano uses the first pitch from each row to form a melodic and harmonic rock rhythmic bass line, while the woodwinds play long tones anxiously awaiting their turn to receive a card.

From mm. 98 – 101, the brasses receive their second card. The French horn has $P_{11}$, the trumpet has $P_8$, and the trombone also plays a rock rhythmic bass line based on the first pitches of both those rows.

The woodwinds finally get their second card from mm. 102 – 106. The flute plays $P_{10}$ and the oboe plays $P_7$. The flute line is doubled an octave higher in the piano and the trombone and clarinet intone the starting pitches of the two rows in 10ths.

When the dealer starts to hand out the third card, the eighth notes are reduced to sixteenth notes to facilitate growth and generate extra excitement for the listener. From mm. 106 – 109, the violin plays $P_9$ and the viola plays $P_1$, all over an A♭ pedal in the piano (starting pitch from $P_9$). This is followed by the brasses from mm. 110 – 113 (French horn $P_9$, trumpet $P_6$, E pedal in trombone and low piano from $P_9$). Then the

\(^{17}\) Although I stopped doing it after the first card, it is not a coincidence that the first three pedal pitches, B, B♭, and D, are also the first trichord of $P_0$. 

30
woodwinds receive their card from mm. 114 – 117 (flute \(P_6\), oboe \(P_{10}\), F pedal from \(P_6\) on piano).

The fourth and fifth cards are dealt out from mm. 118 – 127. Although the cards are still dealt in the same order (strings, brass, woodwinds) the phrases are fragmented into four distinct pieces that are then interlocked sequentially between the two instruments. This helps make the bass parts more interactive instead of just pedal-based. Violin has \(P_1\), viola has \(P_5\), French horn has \(P_6\), trumpet has \(P_2\), flute has \(P_{10}\), and oboe has \(P_2\). The clarinet, trombone, and piano parts all echo the first pitches of one of the rows from their perspective groups. All the parts finish their rows together at mm. 127 with a fermata. Their hands have been dealt!

7. “At the Grave of Anton Webern”

In 1995, while still a teenager, I became interested in the music of Anton Webern as a consequence of my intense interest in Frank Zappa’s music. Zappa often referred to Webern both in The Real Frank Zappa Book and in other interviews. Since Zappa had a difficult time getting a hold of Edgar Varèse’s recordings, I assumed that it would be difficult to find a recording of Webern’s music. My assumption was correct.

After scouring the Willowbrook Mall in Wayne, NJ, I was able to find a recording by the Kronos Quartet, At the Grave of Richard Wagner, which had a Webern piece on it. This was my first purely “classical” album purchase and it quickly became one of my favorite albums to listen to.

Therefore, I thought it would be appropriate here to let the stringed instruments take the lead and invoke Alban Berg’s String Quartet, op. 3 (1910) and Webern’s Five
Pieces, op. 5 (1909) from the same album. The violin and viola play sincere Bergian melodies with great passion punctuated by the occasional pizzicato in the viola.

The form of the piece is very compact, like many of Webern’s pieces. It has only fifteen measures, fitting in with the cribbage theme. The A section is from mm. 128-134 with the violin stating $P_0$ and the viola stating $P_2$. The B section is from mm. 135-138, with the violin stating $R_6$ and the viola stating $R_5$ (in the second half of mm. 136, the violin doubles the end of $R_5$ in octaves). The closing A’ section is from mm. 139-142 with the violin again stating $P_0$ and the viola now stating $R_6$.

8. “The Play”

In cribbage, the play phase is where the players play their cards in turn, score points, and move their spilikin forward accordingly. In this variation, the piano and the ensemble take turns playing a few cards and having a generally lovely time. Befitting the theme, I feel that this is one of the most playful of the variations.

Initially I had not intended to tell anyone what the inspiration for The Cribbage Variations was, similar to Elgar’s Variations on an Original Theme, op. 36. However, after a demo performance of the first several variations in 2016, musicologist Douglas Johnson correctly identified the theme as the tone row from Webern op. 24. That is a memory I will always be fond of.

The music for this variation was supposed to be something of a false flag (made irrelevant by Johnson’s revelation) by being a variation of the “wrong” Webern piece, specifically the second movement of his 1936 dodecaphonic piece Variations for Piano, op.
27. I found its construction to be fascinating and created a spreadsheet to try and analyze it visually. I liked how well it “danced” on the piano and I enjoyed wondering how Webern came to the choices he made regarding the different “categories” or the way the pitches were dealt with.

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<td>8</td>
</tr>
<tr>
<td>9</td>
<td>f</td>
<td>I₉/P₃</td>
<td>E³</td>
<td>D³</td>
<td>I₉/P₃</td>
<td>Grace + Pivot</td>
<td>off</td>
<td>off</td>
<td>Slur</td>
<td>I₉</td>
<td>C</td>
<td>P₃</td>
<td>f</td>
<td>9</td>
</tr>
<tr>
<td>10</td>
<td>f</td>
<td>P₃</td>
<td>E³</td>
<td>C</td>
<td>I₉</td>
<td>Legato</td>
<td>off</td>
<td>on</td>
<td>Grace + Pivot</td>
<td>I₉/P₃</td>
<td>C³/D</td>
<td>F/E</td>
<td>I₉/P₃</td>
<td>f</td>
</tr>
<tr>
<td>11</td>
<td>p</td>
<td>P₃</td>
<td>E³</td>
<td>D²</td>
<td>I₉</td>
<td>Grace</td>
<td>on</td>
<td>off</td>
<td>Grace + Switch</td>
<td>P₃</td>
<td>B³/C</td>
<td>G²/F⁴</td>
<td>I₉</td>
<td>p</td>
</tr>
<tr>
<td>12</td>
<td>f</td>
<td>I₉</td>
<td>C⁸</td>
<td>B³</td>
<td>P₃</td>
<td>Trials + Switch</td>
<td>off</td>
<td>on</td>
<td>Slur</td>
<td>I₉</td>
<td>A</td>
<td>A</td>
<td>I₉</td>
<td>f</td>
</tr>
<tr>
<td>13</td>
<td>p</td>
<td>I₉</td>
<td>A</td>
<td>A</td>
<td>P₃</td>
<td>Staccato</td>
<td>off</td>
<td>off</td>
<td>Slur</td>
<td>I₉</td>
<td>G</td>
<td>B</td>
<td>I₉</td>
<td>p</td>
</tr>
<tr>
<td>14</td>
<td>f</td>
<td>I₉</td>
<td>F</td>
<td>C⁸</td>
<td>P₃</td>
<td>Slur</td>
<td>off</td>
<td>off</td>
<td>Slur</td>
<td>P₃</td>
<td>G</td>
<td>B</td>
<td>I₉</td>
<td>f</td>
</tr>
<tr>
<td>15</td>
<td>p</td>
<td>I₉</td>
<td>C⁸</td>
<td>P₃</td>
<td>Slur</td>
<td>off</td>
<td>off</td>
<td>Slur</td>
<td>P₃</td>
<td>B³</td>
<td>D³E</td>
<td>I₉</td>
<td>p</td>
<td>15</td>
</tr>
<tr>
<td>16</td>
<td>f</td>
<td>I₉/P₃</td>
<td>B⁴</td>
<td>C⁸</td>
<td>P₃/P₃</td>
<td>Slur + Pivot</td>
<td>off</td>
<td>off</td>
<td>Slur</td>
<td>P₃</td>
<td>B³</td>
<td>G²</td>
<td>I₉/P₃</td>
<td>f</td>
</tr>
</tbody>
</table>

* Event 10 of the first half and event 1 of the second half occur simultaneously in bar 2 of bar 11

**Example 2.8.1.** Webern, *Variations for Piano*, op. 27, 2nd movement spreadsheet analysis

I also appreciated the symmetry between the rows Webern chose to work with on this piece. I found it visually appealing from a visual arts perspective. In the example below, Webern’s chosen rows are in grey and the trichords he used are bolded.
Example 2.8.2. Webern, Variations for Piano, op. 27, 2nd movement matrix

When I first started writing down rough ideas of what I wanted to do with The Cribbage Variations, a solo piano movement was always a “must-have” because I wanted the variations to explore the different possible timbres with the instrumentation. That was my intention when I began crafting this one. However, once I got into my pre-compositional plan for this variation, I decided that not orchestrating it would be a missed opportunity and that it would be fun to orchestrate it in a middle-scale “call and response”-type scenario. I also tried to see how many new/different categories I could come up with from Webern’s while still having a cohesive movement.

Similar to Webern’s piece, there are two halves which repeat. However, unlike Webern’s piece, one part of each half is orchestrated. The overall form is A – A (orch.) – B (orch.) - B. Here is the pre-compositional map I built to guide me through the variation:

<table>
<thead>
<tr>
<th>( P_0 )</th>
<th>( P_1 )</th>
<th>( P_2 )</th>
<th>( P_3 )</th>
<th>( P_4 )</th>
<th>( P_5 )</th>
<th>( P_6 )</th>
<th>( P_7 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>( I_0 )</td>
<td>( I_{11} )</td>
<td>( I_3 )</td>
<td>( I_2 )</td>
<td>( I_4 )</td>
<td>( I_8 )</td>
<td>( I_7 )</td>
<td>( I_6 )</td>
</tr>
<tr>
<td>( P_0 )</td>
<td>( B^b )</td>
<td>( A )</td>
<td>( C^# )</td>
<td>( B )</td>
<td>( D )</td>
<td>( C )</td>
<td>( F^# )</td>
</tr>
<tr>
<td>( P_1 )</td>
<td>( B )</td>
<td>( B^b )</td>
<td>( D )</td>
<td>( C )</td>
<td>( E^b )</td>
<td>( C^# )</td>
<td>( G )</td>
</tr>
<tr>
<td>( P_2 )</td>
<td>( G )</td>
<td>( F^# )</td>
<td>( B^b )</td>
<td>( G^# )</td>
<td>( B )</td>
<td>( A )</td>
<td>( E^b )</td>
</tr>
<tr>
<td>( P_3 )</td>
<td>( A )</td>
<td>( G^# )</td>
<td>( C )</td>
<td>( B^b )</td>
<td>( C^# )</td>
<td>( B )</td>
<td>( F )</td>
</tr>
<tr>
<td>( P_4 )</td>
<td>( F^# )</td>
<td>( F )</td>
<td>( A )</td>
<td>( G )</td>
<td>( B^b )</td>
<td>( G^# )</td>
<td>( D )</td>
</tr>
<tr>
<td>( P_5 )</td>
<td>( G^# )</td>
<td>( G )</td>
<td>( B )</td>
<td>( A )</td>
<td>( C )</td>
<td>( B^b )</td>
<td>( E )</td>
</tr>
<tr>
<td>( P_6 )</td>
<td>( D )</td>
<td>( C^# )</td>
<td>( F )</td>
<td>( F^b )</td>
<td>( E )</td>
<td>( B^b )</td>
<td>( E )</td>
</tr>
<tr>
<td>( P_7 )</td>
<td>( E^b )</td>
<td>( D )</td>
<td>( F^# )</td>
<td>( E )</td>
<td>( G )</td>
<td>( F )</td>
<td>( B^b )</td>
</tr>
<tr>
<td>( P_8 )</td>
<td>( E )</td>
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<td>( G )</td>
<td>( F )</td>
<td>( G^# )</td>
<td>( F^# )</td>
<td>( C )</td>
</tr>
<tr>
<td>( P_9 )</td>
<td>( C )</td>
<td>( B )</td>
<td>( E^b )</td>
<td>( C^# )</td>
<td>( E )</td>
<td>( D )</td>
<td>( C^# )</td>
</tr>
<tr>
<td>( P_{10} )</td>
<td>( C^# )</td>
<td>( C )</td>
<td>( E )</td>
<td>( D )</td>
<td>( F )</td>
<td>( E^b )</td>
<td>( A )</td>
</tr>
</tbody>
</table>

RI\(_{10}\) RI\(_{11}\) RI\(_3\) RI\(_2\) RI\(_4\) RI\(_2\) RI\(_8\) RI\(_7\) RI\(_6\) RI\(_{10}\) RI\(_9\) RI\(_5\)
### Example 2.8.3. Spreadsheet used to design var. 8 of *The Cribbage Variations*

In the beginning, I was able to find rows that would give me the same starting intervals as Webern’s piece (major 2\textsuperscript{nd}, unison, major 3\textsuperscript{rd}) before diverging. After the initial rows, I looked for row pairs that would either start the same with G and A or would generate enough of the same note pairs that they could be dealt with in a similar fashion for cohesion. Since the prime row for Webern op. 24 is very different from the prime row for op. 27, choosing rows based on visual appeal was not practical.

A few other musical decisions I made was to treat F / B as the opposite of B / F because that was interesting musically. I also made a big moment out of Event #13 in the second half where both rows generate an identical trichord, quoting the “So long, Judas” phrase from Andrew Lloyd Webber’s *Jesus Christ Superstar*.

![Musical notation](image)

### Example 2.8.4. *The Cribbage Variations*, var. 8, piano part mm. 245 – 248
9. **“Level Pegging”**

“Level pegging” is a term in cribbage used to describe a situation where the board state is equal and the pieces are tied. In this variation, the brass players play a slow fanfare moving across their assigned rows purposefully until they land in the same spot. The challenge with this variation was to use the rows in a way that they could generate music with triadic harmonies and progressions that would fit comfortably within a late 19th century tradition (especially Anton Bruckner) without breaking the rules set forth at the beginning. Like many of these variations, a lot of trial and error was required.

I eventually found a trio of rows (I₈ in the French horn, P₁ in the trumpet, and RI₃ in the trombone) that would let me generate the same initial chord progression in two somewhat related keys. This allowed the variation to have a (comparatively) stable foundation to the start.
Example 2.9.1. *The Cribbage Variations*, var. 9, mm. 259 – 270

Using what looks like a 1-5 bass line going into mm. 262 and taking advantage of the half-steps at that part of the rows allowed me to keep that sense of stability into an implied F dominant 7th chord in mm. 263 which would traditionally go to Bb but instead lands on F in mm. 264 (the B natural at the end of mm. 263 helps to give the feeling of a cadence and an illusion of harmonic movement).

The other reason why I chose these rows is because at this next part, all three rows have similar pitch content. The French horn has I’s A#, [D], C#, and F#, the trumpet has P’s F# and C# (followed by D and A#), and the trombone has RI3’s [F], [G], F#, and A#. This allowed me to create similar fanfare figures in each of the instruments from mm. 265 – 267.

The final three bars serve as transitional figures into the next variation.

10. “Lunn”

Here I wanted to evoke some of the musical ideas I explored with composer and electric guitarist Mike Keneally (also from Frank Zappa’s 1988 band) when we worked
on his 2004 album *The Universe Will Provide* with conductor Jurjen Hempel and Holland’s Metropole Orkest. My role was to orchestrate the material that Keneally wrote for the ensemble, copy out the score and parts, and coordinate with the conductor, the Dutch public radio station, and the Holland Festival to ensure things ran smoothly. It was my first big orchestra gig.

Since we were creating an entire album with a ton of material that had to be generated fairly quickly, Keneally and I had a variety of working methods. Most often Keneally would compose some music and then tell me what kind of “vibe” he wanted it to have. For instance, “Make it sound like Gil Evans.” So, I imagined Keneally was with me telling me to do just that.

A spiritual cousin to “Jazz Noize,” this variation only utilizes one trichord, [027], a sus2 chord, albeit in different inversions and voicings.\(^\text{18}\)

![Example](image)

**Example 2.10.1.** Example of trichord sus2 [027].

There are five phrases: one built from \(R_0\), \(R_5\), and \(R_7\) in the brasses, one built from \(RI_1\), \(RI_6\), and \(RI_8\) in the strings and piano, one built from \(I_4\), \(I_9\), and \(I_{11}\) in the woodwinds, one built from \(P_0\), \(P_2\), and \(P_7\) in the brasses, and a final tutti phrase built from \(R_1\), \(R_3\), and \(R_8\).

I used the rhythm table to create the syncopations, using different groups of rhythms that equal fifteen 16\(^{th}\) notes without repeating any. For example:

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\(^{18}\) The sus2 chord looms large with Zappa and his adherents because of its openness and ability to work with both major and minor 3rds, 6ths, and 7ths, which makes it especially attractive for extended solo vamps. 

While I was happily working on the variation, I found out that our mutual friend, bass player Doug Lunn, had passed away suddenly. Keneally had played with him extensively since the 1980’s and I performed with him several times in the 00’s and early 10’s as a member of Keneally’s and guitarist Warren Cuccurullo’s (Zappa/Missing Persons/Duran Duran) ensembles. Sometimes we used to hang out and watch operas together and he would tell me stories about all the musicians he worked with. He was someone I looked up to.

Upon hearing this news, I felt a surge of emotion and the last measures, 283 – 287, express how I felt in those moments thinking about the transient nature of existence and the cosmic games of probability that determine us as we go. It seemed only fitting at the end to name the variation to my lost friend.

11. “Muggins”

In the game of cribbage, muggins is an optional rule used primarily in tournament or serious club play that allows the opposing player to score points due to the active player forgetting to score points or move their peg. (It is also a funny word and something my Mom used to call me even though I cannot recall her ever talking about or playing cribbage in her entire life). I thought this was a pretty strange rule in a
pretty strange game and wanted this variation to be the “far out” point in terms of weirdness. The muggins rule is brought out programmatically in the music as this variation exhausts 47 of the possible 48 rows in the matrix, as if I had “forgotten” one.

In 2014, I wrote a piece called “The Fermi Paradox” that used a process I called “alien be-bop.” I had improvised some music into Finale using the lowest B and C of the keyboard as a harmonically unstable pedal in the left hand while the right hand played slowly rising chromatic lines that eventually reached the top of the keyboard at the end of the piece. Then, I took certain melodic motifs that sounded “be-bop” enough to me and harmonized them using a technique Frank Zappa often employed where he would take a 16th note run and then utilize chordal planing. In this instance, I chose the trichord [015].

![Example of trichord](image)

**Example 2.11.1.** Example of trichord [015].

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19 One of the reasons for this was practical; it would allow Tommy Mars to program the chord into the synthesizer so that it could be triggered by just playing the top note, which Mars demonstrated to Pierre Boulez during the 1980 Zappa tour (Barrow 2016, 104).
Example 2.11.2. “The Fermi Paradox,” mm. 117-121, utilizing [015] trichords

While I was very happy with the result, at the time I felt like having changing harmonies might have been a savvier choice technically. So, I thought for this variation that I would do another be-bop-like thing and started working on the flute melody employing the rhythm table to create syncopated rhythmic groupings based on 15 while also trying to exhaust (almost) every row.\(^{20}\)

Example 2.11.3. The Cribbage Variations, var. 11, flute part mm. 288 – 292

\(^{20}\) Although I was strict about the rhythms being built in groups of 15, I was less strict about using only unique integers in those groupings if repeating a number helped the piece groove better.
Once I had a hip melody, I wanted hip harmonies to go with it, but I did not want to do what I did previously with chordal planing in “The Fermi Paradox.” I wanted something more contrapuntal. Since I had a melody instrument (flute) and four harmony instruments (oboe, clarinet, violin, and viola), I selected four different rows from the matrix: one P, one I, one R, and one RI, and harmonized the melody with those rows. I tried about a dozen different configurations over a few very frustrating days. While I was consistently successful in making something arguably “contrapuntal” in these attempts, they were also, without fail, ugly, unpleasant, and/or shrill. The results were neither beautifully strange nor musical. Eventually, I concluded that this method could only produce ugly results – mathematically satisfying but musically bleak.

This was a conundrum: I had one technique that could not produce an adequate result and another technique that would “work” but would not be new for me in terms of procedure or harmonic vocabulary. That was when I remembered something former Zappa Family Trust ScoremeisterKurt Morgan told me while I was doing research on Zappa’s Dupree’s Paradise. In the late 70’s/early 80’s, Zappa created a “Chord Bible” which was essentially a predetermined list of sonorities that he enjoyed hearing in sequence and which he used in several of his chamber and orchestral works of the time. Although the Chord Bible still remains “secret,” music theorist Brett Clement was able to see

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21 In the Zappa organizations, many administrative-type roles have the word “meister” appended to them. For instance, the “Scoremeister” is the person in charge of overseeing Zappa’s scores and classical music requests. This suffix stems from Frank Zappa’s habit of calling the person in charge of rehearsing the band the “Clonemeister.” The Clonemeister would rehearse the band when Zappa needed to do interviews or other administrative tasks.
to deduce certain entries in his 2009 dissertation *A Study on the Instrumental Music of Frank Zappa.*

Zappa himself only described the Chord Bible in one interview in 1987:

> Every composer has notes, chords, and rhythms that he likes to hear. Some people keep it all in their head and some people will jot down little sketches. Several years ago, I made a classification of all my favorite chords plus the order in which I preferred to hear the pitches in the chord arpeggiated. It's all broken down from three-note, four-note, five-note, six-note, eight-note chords. The chords are in different classifications, starting with those chords that have a minor second as the uppermost interval, major second, minor third, blah blah blah, all the way down to the fewest chords that have a minor ninth as the upper interval of the chord. There are real dense-voiced chords and chords that cover four or five octaves (Spurrier 1987).

I considered using some of Zappa’s Chord Bible chords as discovered by Clement but decided it would be much better to create my own and created a series of five-note chords that I thought would be cool to hear in succession. Since one of the rules was that all row statements must be complete, once I chose a sonority, I had to have at least twelve of them. However, this allowed me to do something where I had more control over the final result and was also an upgraded version of the technique I used on “The Fermi Paradox!” I was very excited about this idea. Here is the Chord Bible I made for this variation:

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22 Clement’s dissertation is a must-read for anyone deeply interested in how Zappa’s instrumental music functions.
One of the things I very much enjoyed about this procedure was the ability to control the level of dissonance by either tightening or loosening the voicings. This helped give both drama and shape/moments of tension and release to the variation.

The sections with the woodwinds and strings are sometimes interrupted/punctuated by more legato/relaxed responses by the brass and piano, which generally operate outside the operations described hitherto. Other times they are more integrated into the sound, but just a little bit. The first four measures of the variation give examples of both integration and response from the rest of the ensemble:

Example 2.11.4. The Cribbage Variations, Chord Bible used to generate var. 11
Example 2.11.5. *The Cribbage Variations*, var. 11, mm. 288 - 292

As stated previously, one of my goals for this movement was to exhaust 47 of 48 row possibilities in the matrix. During the proofreading stage (where I was checking to make sure that everything adhered to the rules) it appeared that I had managed to “forget” one since it did not appear in the woodwind and string parts. However, it turned out that the missing one, RI₀, was in the piano in mm. 297 and mm. 303 in block chords. Therefore, I transposed those two chords down a semitone and used RI₁₁ instead. The end result being that every row besides RI₀ is sounded somewhere in the variation.
12. **“The 144,000”**

Revelation 7 *King James Version (KJV)*

7 And after these things I saw four angels standing on the four corners of the earth, holding the four winds of the earth, that the wind should not blow on the earth, nor on the sea, nor on any tree.

2 And I saw another angel ascending from the east, having the seal of the living God: and he cried with a loud voice to the four angels, to whom it was given to hurt the earth and the sea,

3 Saying, Hurt not the earth, neither the sea, nor the trees, till we have sealed the servants of our God in their foreheads.

4 And I heard the number of them which were sealed: and there were sealed an hundred and forty and four thousand of all the tribes of the children of Israel.

5 Of the tribe of Juda were sealed twelve thousand. Of the tribe of Reuben were sealed twelve thousand. Of the tribe of Gad were sealed twelve thousand.

6 Of the tribe of Aser were sealed twelve thousand. Of the tribe of Nephthalim were sealed twelve thousand. Of the tribe of Manasses were sealed twelve thousand.

7 Of the tribe of Simeon were sealed twelve thousand. Of the tribe of Levi were sealed twelve thousand. Of the tribe of Issachar were sealed twelve thousand.

8 Of the tribe of Zabulon were sealed twelve thousand. Of the tribe of Joseph were sealed twelve thousand. Of the tribe of Benjamin were sealed twelve thousand.

9 After this I beheld, and, lo, a great multitude, which no man could number, of all nations, and kindreds, and people, and tongues, stood before the throne, and before the Lamb, clothed with white robes, and palms in their hands;

10 And cried with a loud voice, saying, Salvation to our God which sitteth upon the throne, and unto the Lamb.

11 And all the angels stood round about the throne, and about the elders and the four beasts, and fell before the throne on their faces, and worshipped God,
Saying, Amen: Blessing, and glory, and wisdom, and thanksgiving, and honour, and power, and might, be unto our God for ever and ever. Amen.

And one of the elders answered, saying unto me, What are these which are arrayed in white robes? and whence came they?

And I said unto him, Sir, thou knowest. And he said to me, These are they which came out of great tribulation, and have washed their robes, and made them white in the blood of the Lamb.

Therefore are they before the throne of God, and serve him day and night in his temple: and he that sitteth on the throne shall dwell among them.

They shall hunger no more, neither thirst any more; neither shall the sun light on them, nor any heat.

For the Lamb which is in the midst of the throne shall feed them, and shall lead them unto living fountains of waters: and God shall wipe away all tears from their eyes.

Revelation 14

And I looked, and, lo, a Lamb stood on the mount Sion, and with him an hundred forty and four thousand, having his Father's name written in their foreheads.

And I heard a voice from heaven, as the voice of many waters, and as the voice of a great thunder: and I heard the voice of harpers harping with their harps:

And they sung as it were a new song before the throne, and before the four beasts, and the elders: and no man could learn that song but the hundred and forty and four thousand, which were redeemed from the earth.

These are they which were not defiled with women; for they are virgins. These are they which follow the Lamb whithersoever he goeth. These were redeemed from among men, being the firstfruits unto God and to the Lamb.

And in their mouth was found no guile: for they are without fault before the throne of God.

I wanted to do something spiritual for the 12th variation since twelve is the most important number in dodecaphonic music and the matrix occupies 144 squares (12 x 12).

This has a parallel in the Bible, which stipulates that at the time of Revelation that Jesus Christ will return to destroy the Earth after saving only 144,000 people: 12,000 from each of twelve tribes.

Considering just pure data, in 2020 the Population Reference Bureau estimated that 116 billion human beings have walked the Earth since the very first homo sapiens
approximately 50,000 years ago (Kaneda & Haub, 2021). If Jesus only intends on saving 144,000 of them, that means he only considers 0.000124% of us worthy of redemption, and will consign the rest to an afterlife of eternal torment. I find this ghastly, morally incomprehensible result immensely frustrating.

As theologian Reinhold Niebuhr told his student Winnifred Crane Wygal on Halloween 1932, “The victorious man in the day of crisis is the man who has the serenity to accept what he cannot help and the courage to change what must be altered” (Shapiro 2014). It is not within my power or authority to change the Bible, but it is within my power to find my own way through the darkness.

Regardless of its dark subject matter, this is the “pop single” variation meaning it is the most tonally centered and commercially palatable. It is also a “minimalist” movement, in some ways a variation on my 2000 piece “T. Williams” from my Klavierstücke album. This minimalist aesthetic is featured here with a dodecaphonic back-drop.

Similar to how Revelations 7:1 describes the four corners of the Earth, there are four corners in the matrix. If we view the first pitch of row $P_0$ as the godhead of the matrix, then the bottom right corner is the spot furthest away from God. It is from this corner that the piece is generated.

This variation has some secret instructions for the performer, akin to the instructions in some of Erik Satie’s piano pieces, that punctuates the form. The first measure of the variation, mm. 236, asks, “Is this for the ones who were taken or for the ones who were left behind?” That is up to the player to decide.

Example 3.12.2. *The Cribbage Variations*, var. 12, mm. 326 - 329

Notice that both hands are sitting on B at the outset since both RI₁₀ and R₂ start on B. After the introduction, the piece begins to unfold as the hands travel across their assigned rows:
Example 2.12.3. *The Cribbage Variations*, var. 12, mm. 334 - 341

The puzzle is worked out until the climax of the variation at mm. 354 when both rows arrive on the pitch F. I took advantage of this by hammering it out in four octaves at **fff**. This is marked “with a great and sudden anger!” The player has to decide whether it is the anger of God annihilating most of humanity for a second time or the anger of those being annihilated.

Example 2.12.4. *The Cribbage Variations*, var. 12, mm. 354 - 358

Mm. 362 states that “you find the answer unacceptable” with the most chromatic part of the variation lasting from mm. 362 – 365 before finally concluding the sentence with “but you eventually make peace with it” at the beginning of the last section of the variation, which lasts until mm. 377.
Example 2.12.5. The Cribbage Variations, var. 12, mm. 359 – 377

The piece ends with a *ppp* solitary pitch because we all have to face our lives as individuals and decide for ourselves what it means. As Jean-Paul Sartre said, “Man being condemned to be free carries the weight of the whole world on his shoulders; he is responsible for the world and for himself as a way of being” (Sartre 1956, 553).

13. “Knock Knock Bach”

In 1966, composer George Rochberg composed a piece called “Nach Bach.” Then, in 2001, composer Christopher Doll composed a piece called “Nach Nach Bach.”
Naturally, I decided it was time to write “Knock Knock Bach,” especially since “Nach Nach Nach Bach” just seemed like it would be too silly a title for so serious a piece.

This variation continues the theme of making variations on compositions and/or compositional procedures utilized by other composers. It is a variation on Bach’s Fugue no. 2 in C Minor from *Das Wohltemperierte Klavier*. I was attracted to it because it had 31 measures and a subject that seemed like it could be easily converted into the twelve-tone idiom:

![Example 2.13.1. Subject from J.S. Bach’s Fugue no. 2 in C Minor from *Das Wohltemperierte Klavier*](image)

**Example 2.13.1.** Subject from J.S. Bach’s Fugue no. 2 in C Minor from *Das Wohltemperierte Klavier*

![Example 2.13.2. Subject from *The Cribbage Variations*, var. 13 (based on I₃)](image)

**Example 2.13.2.** Subject from *The Cribbage Variations*, var. 13 (based on I₃)

Since fugal writing often involves fragmenting phrases as an essential stylistic part of the interplay between the parts, this variation contains several incomplete row statements. However, much effort was made to have as many complete ones as possible. For the most part, I followed J.S. Bach’s original form as analyzed by Ebenezer Prout in one of his final books, a wonderful 1910 treatise called *Analysis of J.S. Bach’s Forty-Eight Fugues*. Here is what I eventually came up with for “Knock Knock Bach:”
### Exposition

<table>
<thead>
<tr>
<th>Hn.</th>
<th>Subject</th>
<th>Countersubject</th>
</tr>
</thead>
<tbody>
<tr>
<td>C Tpt.</td>
<td>$I_3$</td>
<td>$R_6$</td>
</tr>
<tr>
<td>Tbn.</td>
<td></td>
<td>$I_9$</td>
</tr>
</tbody>
</table>

| mm. | 378 / 1 | 379 / 2 | 380 / 3 | 381 / 4 |

### Codetta

<table>
<thead>
<tr>
<th>Hn.</th>
<th>$P_1$ frag. / $P_3$ frag.</th>
<th>$P_1$</th>
<th>$I_1$</th>
</tr>
</thead>
<tbody>
<tr>
<td>C Tpt.</td>
<td>$I_1$ frag. / $I_10$ frag.</td>
<td>$I_{10}$ frag. / $P_10$ frag.</td>
<td>$R_4$</td>
</tr>
<tr>
<td>Tbn.</td>
<td></td>
<td></td>
<td>$I_3$</td>
</tr>
</tbody>
</table>

| mm. | 382 / 5 | 383 / 6 | 384 / 7 | 385 / 8 |

### Middle Section

#### First Episode

<table>
<thead>
<tr>
<th>Hn.</th>
<th>Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>$I_2$ frag.</td>
<td>$I_1$ frag.</td>
</tr>
<tr>
<td>C Tpt.</td>
<td>Sequence</td>
</tr>
<tr>
<td>$I_1$ frag.</td>
<td>$I_{11}$ frag.</td>
</tr>
<tr>
<td>Tbn.</td>
<td>Sequence</td>
</tr>
<tr>
<td>$R_{10}$</td>
<td>$R_0$</td>
</tr>
</tbody>
</table>

| mm. | 386 / 9 | 387 / 10 | 388 / 11 | 389 / 12 |

#### Second Episode

<table>
<thead>
<tr>
<th>Hn.</th>
<th>Middle Entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>$R_3$</td>
<td>$I_0$</td>
</tr>
<tr>
<td>C Tpt.</td>
<td>Sequence</td>
</tr>
<tr>
<td>$R_4$</td>
<td>$R_0$</td>
</tr>
<tr>
<td>Tbn.</td>
<td>$I_6$</td>
</tr>
</tbody>
</table>

| mm. | 390 / 13 | 391 / 14 | 392 / 15 | 393 / 16 |

### Final Section

#### Third Episode

<table>
<thead>
<tr>
<th>Hn.</th>
<th>Countersubject</th>
</tr>
</thead>
<tbody>
<tr>
<td>$P_3$ frag. / $P_5$ frag.</td>
<td>$P_3$ frag.</td>
</tr>
<tr>
<td>C Tpt.</td>
<td>Subject</td>
</tr>
<tr>
<td>$P_1$</td>
<td>$P_5$ frag.</td>
</tr>
<tr>
<td>Tbn.</td>
<td>$I_6$ frag. / $I_1$ frag.</td>
</tr>
</tbody>
</table>

| mm. | 394 / 17 | 395 / 18 | 396 / 19 | 397 / 20 |

#### Fourth Episode

<table>
<thead>
<tr>
<th>Hn.</th>
<th>Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>$CS$ con’t</td>
<td>$R_5$</td>
</tr>
<tr>
<td>C Tpt.</td>
<td>$S$ con’t</td>
</tr>
<tr>
<td>$I_3$ frag.</td>
<td>$I_5$</td>
</tr>
<tr>
<td>Tbn.</td>
<td>Sequence</td>
</tr>
<tr>
<td>$R_3$</td>
<td>$R_7$</td>
</tr>
</tbody>
</table>

| mm. | 398 / 21 | 399 / 22 | 400 / 23 | 401 / 24 |

53
Example 2.13.3. *The Cribbage Variations*, var. 13, fugue structure/analysis

Clearly, I was much more successful writing something contrapuntal here (by virtue of having succeeded) than my attempts at making “Muggins” contrapuntal. There are two principal reasons for this: the first being that balancing three parts was much easier than balancing five, the second being that I believe the ear hears this style of music more in its horizontal relationships than in its transient vertical relationships, so even when it gets “crunchy” in moments it still feels cohesive.

14. “75 Raindrops”

In this movement, I created a variation on some of the procedures Milton Babbitt used to create his *Semi-Simple Variations*. I was really into computers and BASIC programming when I was a little kid and I thought it would be fun to create music using binary code. So instead of trying again with a more accurate representation of Milton Babbitt’s time-point technique, I decided to try a different one of his techniques where he used serialized versions of binary code to determine when attacks happen in his piece.
First, I used the computer program Microsoft Excel to make decimal versions of the sixteen possible combinations of 1’s and 0’s and sorted them in numerical order. In order to have only 15 possible results, and in a departure from Babbitt’s method in *Semi-Simple Variations*, I determined that 0.0000 (quarter note rests) would be considered to be freely available. This way the music could have a little breathing room (especially after the last variation) and I could manipulate the total number of beats in the piece. Like “Babbitt Time,” I also assigned a numerical value to each note of the chromatic scale, again beginning with 1 instead of 0.

Example 2.14.1. Binary Value and Pitch Assignments for “75 Raindrops”

<table>
<thead>
<tr>
<th>#</th>
<th>Binary Value</th>
<th>Pitch</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.0000</td>
<td>-</td>
</tr>
<tr>
<td>1</td>
<td>0.0001</td>
<td>C</td>
</tr>
<tr>
<td>2</td>
<td>0.0010</td>
<td>D♭</td>
</tr>
<tr>
<td>3</td>
<td>0.0011</td>
<td>D</td>
</tr>
<tr>
<td>4</td>
<td>0.0100</td>
<td>E♭</td>
</tr>
<tr>
<td>5</td>
<td>0.0101</td>
<td>E</td>
</tr>
<tr>
<td>6</td>
<td>0.0110</td>
<td>F</td>
</tr>
<tr>
<td>7</td>
<td>0.0111</td>
<td>G♭</td>
</tr>
<tr>
<td>8</td>
<td>0.1000</td>
<td>G</td>
</tr>
<tr>
<td>9</td>
<td>0.1001</td>
<td>A♭</td>
</tr>
<tr>
<td>10</td>
<td>0.1010</td>
<td>A</td>
</tr>
<tr>
<td>11</td>
<td>0.1011</td>
<td>B♭</td>
</tr>
<tr>
<td>12</td>
<td>0.1100</td>
<td>B</td>
</tr>
<tr>
<td>13</td>
<td>0.1101</td>
<td>?</td>
</tr>
<tr>
<td>14</td>
<td>0.1110</td>
<td>?</td>
</tr>
<tr>
<td>15</td>
<td>0.1111</td>
<td>?</td>
</tr>
</tbody>
</table>

Then I transformed the entire matrix into numerical values from 1 - 12:
However, this method obviously could not and did not generate any number higher than a 12. I needed some way of generating results of 13, 14, and 15. I found a semi-simple solution and allowed 13, 14, and 15 to be acceptable integers in transposed rows. Results of sixteen or higher then had fifteen subtracted from them in order to keep the resulting numbers between 1 - 15. This was the result:

Example 2.14.3. The Cribbage Variations matrix converted to integers 1 - 15
I recognized that I still only had 12 unique integers per row, not 15, using this method. They just had a potential range of 1 – 15. Completion of a serialized 15 was not a goal. Furthermore, changing the converted row back to pitches would have changed the pitch content in a substantive way. That would have been a critical breach of rule #3 regarding row obfuscation and thus that possibility was not entertained.

I used Excel to locate a couple more rows that, when coupled with $P_0$, would result in a number of attacks divisible by 15. Those rows were $R_{11}$ and $P_4$. Obviously, the values would have worked out the same had I used $P_{11}$ and/or $I_4$ so I used a random number generator to determine which direction of the row I would utilize, and in which order they would appear.

Here is the resulting table, which I used to generate the movement. Note that the rhythmic row has slightly different values than the musical row. (The rhythmic and musical rows for $P_0$ are identical since there were no transpositions). The final row statements of each of the three rows are incomplete but they each have at least one or two complete row statements.
Example 2.14.4. *The Cribbage Variations*, var. 13 map

I also wanted the movement to have a number of beats divisible by 15. So I freely added some space between the attacks and phrases to make things feel more organic while also being more spacious and musical. This resulted in 75 attacks (or “raindrops”) over 45 beats. Regarding the orchestration, except for the “climax” towards the end of the movement when there is more surface rhythmic activity due to the higher integer values, I assigned the pitches to only one instrument at a time because of the contrast it would give to the prior and last future variation.
15. **“The Show”**

The show is the phase in cribbage that comes after the play phase where each player receives points for the contents of their hand. It is not unusual for the game to end during the show, so it felt appropriate for “The Show” to be the name of the final, fifteenth variation. There are other reasons why I liked “The Show” as the name of the final variation. First, for me, no matter the genre, and especially due to my decades working in the major music industry, music is ultimately a form of show business. Second, much of this piece has been about showing listeners and especially myself what I can accomplish with a twelve-tone matrix. Lastly, we all experience a show every day from the moment we get up in the morning to the moment we go to sleep…and sometimes we even experience shows in our sleep in the shape of dreams!

My goal for this final variation was to see how pretty I could make it. I felt inspired by Camille Saint-Saëns and the French impressionistic composers like Claude Debussy who came after him. I needed to find a way to generate extended triads within a diatonic collection in order to create something functionally impressionistic. Since all of the rows in the matrix contain all of the pitches, first I needed to decide what pitches I wanted. I chose C, E, F, A, G, and D since, triadically, it features both a major (C major) and minor chord (D minor). Sounded together, the pitches create a maj7(add9,add13) chord (F, A, C, E, G, D). There are many other chords that can be generated from those pitches. I combined rows RI_{11}, RI_{3}, RI_{4}, RI_{8}, RI_{6}, and RI_{1} to obtain them. I decided on RI because I wanted something that would lift the audience’s spirits and hoped they could feel themselves subconsciously rising through the rows to the heavens above.

The form is divided into three parts (see ex. 2.15.1). First, there is a short intro based on A material from mm. 421 – 428. Then is A from mm. 429 – 453 which has the
first five notes of each of the six rows. Then there is a contrasting B section from 454 – 466 (that is also in stark contrast to everything else in *The Cribbage Variations*) which has the next two notes of each of the six rows. Then there is the final A’ section from mm. 467 – 492 which has the last five notes of each of the six rows.

<table>
<thead>
<tr>
<th>mm.</th>
<th>RI₁₁</th>
<th>RI₁₃</th>
<th>RI₄</th>
<th>RI₅</th>
<th>RI₆</th>
<th>RI₇</th>
</tr>
</thead>
<tbody>
<tr>
<td>483 - 492</td>
<td>Bb</td>
<td>D</td>
<td>Eb</td>
<td>G</td>
<td>F</td>
<td>C</td>
</tr>
<tr>
<td>479 - 482</td>
<td>B</td>
<td>Eb</td>
<td>E</td>
<td>Ab</td>
<td>Gb</td>
<td>Db</td>
</tr>
<tr>
<td>475 - 478</td>
<td>G</td>
<td>B</td>
<td>C</td>
<td>E</td>
<td>D</td>
<td>A</td>
</tr>
<tr>
<td>471 - 474</td>
<td>Gb</td>
<td>Bb</td>
<td>B</td>
<td>Eb</td>
<td>Db</td>
<td>Ab</td>
</tr>
<tr>
<td>467 - 470</td>
<td>D</td>
<td>F#</td>
<td>G</td>
<td>B</td>
<td>A</td>
<td>E</td>
</tr>
<tr>
<td>464 - 466</td>
<td>(Eb)</td>
<td>(G)</td>
<td>(Ab)</td>
<td>(C)</td>
<td>(Bb)</td>
<td>(F)</td>
</tr>
<tr>
<td>460 - 463</td>
<td>(Db)</td>
<td>(F)</td>
<td>(Gb)</td>
<td>(Bb)</td>
<td>(Ab)</td>
<td>(Eb)</td>
</tr>
<tr>
<td>458 - 459</td>
<td>Eb</td>
<td>G</td>
<td>Ab</td>
<td>C</td>
<td>Bb</td>
<td>F</td>
</tr>
<tr>
<td>454 - 457</td>
<td>Db</td>
<td>F</td>
<td>Gb</td>
<td>Bb</td>
<td>Ab</td>
<td>Eb</td>
</tr>
<tr>
<td>445 - 453</td>
<td>F</td>
<td>A</td>
<td>Bb</td>
<td>D</td>
<td>C</td>
<td>G</td>
</tr>
<tr>
<td>441 - 444</td>
<td>E</td>
<td>G#</td>
<td>A</td>
<td>C#</td>
<td>B</td>
<td>F#</td>
</tr>
<tr>
<td>437 - 440</td>
<td>A</td>
<td>Db</td>
<td>D</td>
<td>Gb</td>
<td>E</td>
<td>B</td>
</tr>
<tr>
<td>433 - 436</td>
<td>(Ab)</td>
<td>(C)</td>
<td>(Db)</td>
<td>(F)</td>
<td>(Eb)</td>
<td>(Bb)</td>
</tr>
<tr>
<td>429 - 432</td>
<td>(C)</td>
<td>(E)</td>
<td>(F)</td>
<td>(A)</td>
<td>(G)</td>
<td>(D)</td>
</tr>
</tbody>
</table>

**Example 2.15.1.** Formal plan of *The Cribbage Variations*, var. 15

The A and A’ sections feature a pointillist-type of melody with each note representing a different (unspecified) star in the cosmos. Typically, the piano plays all of the relevant pitches which are orchestrated in the other parts. They mostly vary in terms of dynamics, instrumentation, inversion, legato vs. staccato, length, and presentation. However, the rhythm is usually static consisting of a presentation of a series of quarter notes. Through the piece there has been so much motion throughout and such an emphasis on rhythm that I wanted to emphasize other stylistic elements here instead. Furthermore, I believed it would make the B section of the variation even more
surprising. At the B section of the final variation, I finally pay tribute to that other titan of early-to-mid 20th century music composition: Igor Stravinsky.

Among my favorite Stravinsky works is his 1911 ballet *Petrushka*. My favorite part of the ballet is the beginning of the Fourth Tableau, “The Shrovetide Fair (Toward Evening).” It captured my heart and imagination immediately upon first listen and it still delivers a great deal of joy when I listen to it. The oscillating D major and E minor triads at both measured and unmeasured rates with embellishments is something I found extremely effective and imaginative (see ex. 2.15.2). It is a technique I have played around with a few times in improvisations (most notably in “The Brown Triangles” on Mike Keneally’s 2000 album *Dancing*) but since my procedure for this movement had a major and minor chord a second apart built into it, I thought this would be a good time to do it in a large-scale work. I also got a chuckle out of suddenly having an actual key signature in a twelve-tone work.
Example 2.15.2. opening bars of the Fourth Tableau of Stravinsky’s *Petrushka*
Example 2.15.3. *The Cribbage Variations*, var. 15, mm. 454 – 459

In mm. 454 - 457, the piano has the oscillating chords while the accompanimental parts in the strings and brass move from D♭ major to E♭ minor at a slower rate of one chord per measure. Looking at both Example 2.15.1 and 2.15.3, one will observe that I
built a six-note scale out of the available pitches (D♭, F, G♭, B♭, A♭, and E♭) for the melody in the woodwinds.

In the second phrase, from mm. 458 – 459, the notes E♭, G, A♭, C, B♭, and F are available (see Example 2.15.1). The woodwinds have the oscillating chords while the piano plays a jazzy accompaniment. The violin plays a scalar melody from the six available pitches inspired by the electric violin stylings of Jean-Luc Ponty while the viola plays a similar melody at a slower rate.

These two phrases then repeat in variation (different inversions, etc..) from mm. 460 – 465 followed by a transitional bar in mm. 466 which brings us to A’. A’ obviously has similar ideas to A although it feels slightly more intense to me.

Example 2.15.4. *The Cribbage Variations*, var. 15, mm. 487 – 492
The last six bars of the piece have a version of what music theorists sometimes refer to as a “triple hammer-blow” to signify the end of the piece, albeit a quiet, meditative one that will hopefully bring peace to the listener and give them a moment to imagine the scope and grandeur of the show the universe gives every day before coming back to themselves and continuing on with their evening.\textsuperscript{23}

\textsuperscript{23} A quiet, contemplative ending is what music theorists Hepokoski & Darcy would call a “first-level default” in my music. Almost all my major works and albums have this kind of ending.
Chapter 3: Contextualizing *The Cribbage Variations*

In a phone conversation with composer and percussionist Peter Jarvis, Milton Babbitt reportedly said, “When I write music, I write the music that I would most like to hear that hasn’t already been written.”

There were dozens of quotations I was considering as a start to this section, but I have chosen this one for two reasons. First and foremost, Babbitt’s presence has loomed large not only over this project but over the entire field of music composition as a separate scholarly discipline, especially in America. Second, it is pretty close philosophically to why I decided I wanted to write a twelve-tone piece to begin with: I wanted to write something different than what I had written before.

Of all the things I have read in my music history books over the years, one thing in particular that always stuck with me was something Martha M. Hyde said regarding the creation of Igor Stravinsky’s Neoclassical mid-20th century works: “Eclectic imitation treats the musical past as an undifferentiated stockpile to be drawn on at will” (Hyde 2003, 102). That is basically how I feel about the music that is available to me to explore and it is one of the reasons why there is so much stylistic contrast between my works.

With *The Cribbage Variations* specifically, I wanted to create a piece that conformed with the historical norms of both variation sets and twelve-tone music but that could also be enjoyed by casual classical music listeners. While I conformed to the letter of Schoenberg’s rules, when given the opportunity to create something tonal/traditional within that paradigm, I leaned into it, and much of the challenge with a few of the variations was to see how “in” I could make them. I thought it was

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24 This story was related to me by Peter at a lunch on July 9th, 2019.
interesting that the variations that conformed to a general listener’s expectation of a piece were the same variations that disrupted Schoenberg’s intention to explore harmonies outside that milieu.

One way to find success in any business is to identify a product or service that is being underutilized or does not yet exist, find customers for that product or service, and then market it to them. While analyzing twelve-tone works as a graduate student I was always disappointed when the composers presented pieces as being twelve-tone but then obfuscated the row or adjusted pitches solely in the name of musical choice. This was often distracting in a way similar to looking at Al Hirschfeld illustrations and searching for “Nina” instead of looking at the picture. I wanted to manufacture a twelve-tone product that was fairly straightforward in its presentation so an analyst looking at the piece would not get bogged down by pitch class concerns and spend their time looking at other stylistic elements. Furthermore, the piece needed to be potentially entertaining to audiences and enjoyed by listeners who have an appreciation for classical music but are not necessarily experts in the field.

Growing up a Zappa fan who became interested in classical music, I thought the logical next step was to study composers such as Stravinsky, Boulez, and Webern, who were among Zappa’s favorites. From there I also became interested in Charles Ives and Arnold Schoenberg, the latter of which invented the most prominent twelve-tone system. However, my understanding back then of how twelve-tone music worked was not sophisticated in the slightest.

In my 1997 piece “The Park Bench Canal,” I tried to write a jaunty twelve-tone row as a melody highlighting several dissonant intervals over the Gsus2 chord (♯3, maj7, 9, ♭9, 13, ♭13, ♯11, followed by more consonant intervals). Besides the fact that the F is
missing, the joke was that when the melody finally resolves to the tonic of G, the accompanying chord changes to an A♭sus2 which recontextualizes the G as a major 7th instead of an octave or unison (see ex. 3.1.1). In a way, though, this melody proves that you could have an almost twelve-tone melody that can be both remembered and whistled (something Schoenberg himself thought was possible).

Since my understanding was so basic, once I finished expressing “the row,” I had no idea what else to do with it, and already abandoned the idea of doing a twelve-tone piece by m. 10. It was not until my graduate studies that I learned about matrixes and how those musics operated. I studied a lot of twelve-tone music in my 30’s until I felt like I had a clear enough understanding to attempt to make a large-scale twelve tone work myself.

Example 3.1.1. “The Park Bench Canal” mm. 5 – 12

A well-crafted musical composition often involves a balance between unity and variety. Pieces should generally be unified enough for to feel consistent and varied
enough to stay interesting. There are plenty of interesting pieces that have sharp detours or non-sequiturs but for the most part, I think a successful composition should feel somewhat consistent with itself. *The Cribbage Variations* are an example of that. There are essentially four primary musical themes (the prime, retrograde, inversion, and retrograde inversion versions of the row) that bring unity to the work and those themes get transformed/combined/dealt with differently throughout the variations to bring variety. As described earlier, sets of variations have an inherent playfulness to them. The ability to try out lots of ideas instead of only a few is one reason why composers throughout the centuries have been so interested in creating their own sets of variations on different topics.

One can look at unity/variety as a pendulum where composers can choose to make their music more unified (like many of Steve Reich’s early minimalist works) or more varied (like many of John Cage’s experimental pieces). However, I would like to posit that there is another pendulum composers should consider and that is one between conformity and disruption.

Composers are a product of their time, place, and space. Many of them, when asked, will tell you that they draw inspiration for their music from either events in their life or newsworthy current and historical events.\(^{25}\) Even if they are approaching music from a fictional place they still often want to create stories and art that feels true to the listener. Furthermore, they grow up exposed to the culture around them which in turn influences their decisions. For instance, it would be rather anomalous for a composer under forty to not also have a relationship, sometimes a deep one, with the rock and hip-

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\(^{25}\) John Adams has built an entire career out of taking the pain and tragedies of other people and families without consent and turning it into fame and profit for himself.
hop music of their generation (and the generation of their parents) in addition to the classical music they were exposed to that got them interested in music composition.

Composers are also influenced by the musics of their peers and mentors. In the sense that all sentient beings are subject to impermanence and the laws of cause and effect, everything a composer hears, reads, or experiences is going to change their music and their relationship to it.

The current composers that I consider colleagues are mostly composers I work with and/or have close friendships with. Philosophically, I am closest to two other composers who have come out of Frank Zappa’s bands: guitarist Steve Vai and multi-instrumentalist Mike Keneally. They both mentored me when I was younger and have hired me to work on dozens of assorted projects with them. Vai, in particular, is currently working on a five-volume set of his orchestral music which will include an arrangement we made together of his piece “Ballerina 12/24.”

I also feel a deep affinity with my friend Eric Roth with whom I have worked on many projects with through the company his father Arnie Roth founded, AWR Music. We often talk about the importance of treating music as a truly democratic process, about the unfortunate exclusion of incredible so-called “jazz” composers from the canon (and our mutual desire to remove adjectives like “jazz” when describing those composers), and about new pieces that we discover and enjoy. His recent compositions include The RPG National Anthem Variations, a set of seven variations for solo acoustic guitar based on “The Main Theme from FINAL FANTASY” by our mutual colleague composer Nobuo Uematsu.

Another composer I feel close to is percussionist Peter Jarvis who worked at William Paterson University for over thirty-five years as an adjunct before being
unceremoniously let go. Jarvis worked extensively with Charles Wuorinen, Milton Babbitt, George Walker, Frederic Rzewski, and many others. He also worked with composers like John Cage and George Crumb as part of his New Music Series at William Paterson University and taught prominent newer composers like Tyshawn Sorey. He has tons of great stories from his first-hand experience with these composers and there are not many people who love music more than Jarvis does. Sometimes he tells me that I give off the same energy that these great composers used to and I understand full well what a nice compliment that is. I was very unsettled when he was let go: it was strange to me that academia did nothing to protect a musician who worked directly with so many of the composers that we study diligently in programs today.

I also like to support composers by commissioning them to write pieces for me and others. I recently commissioned a piece from Philip Schroeder, formerly of Henderson State University in Arkansas, whose album *Move in the Changing Light* I loved dearly. Over the years I’ve commissioned multiple pieces from Kimberly Osberg, an up-and-coming composer from Oregon who has beautiful ideas and a strong work ethic. I also love to support composers by buying their sheet music. Recent acquisitions include pieces by George Lewis, Lowell Liebermann, Missy Mazzoli, David Lang, Jennifer Higdon, David T. Little, Julia Wolfe, Sebastian Currier, Anna Clyne, Natalie Joachim, and many others. Before I left Montclair State University in 2021, I had the opportunity to teach an all-21st century music analysis class and I thoroughly enjoyed that experience. I think it is important to support new composers to keep the art moving forward and I hope to commission many more pieces in the future from all kinds of composers.
My thoughts on conformity are two-fold. For instance, in the major music industry, successful pieces are ones that are capable of generating millions of dollars of revenue either through radioplay/streaming income, ticket sales, third party licenses for media projects, and/or merchandising. The value of the piece is its literal monetary value with the best possible outcome being the creation of an evergreen song which continues to generate income for many decades after it hits. However, this value is often not generated by the song itself but by the immense amount of dollars that the music industry spends on independent radio promoters, marketers, and branding. Ultimately, songwriters in that world often need to conform to what the artists & repertoire executives decide music should be if they want to make it. This often means conforming to and imitating the music that is already on the radio and dressing in the styles that are in all the fashion magazines.

In academia, successful pieces are ones that bring a lot of prestige to the composer and to their institution either by winning awards like the Pulitzer Prize or the Grawemeyer Award, by having performances by prominent ensembles in major metropolitan areas, or by inspiring academic articles by professors at large research universities. The value of the piece is not its monetary value (many pieces from the film scoring or video game scoring industries generate substantial revenue but are not considered art music even if vaguely “classical” in nature or even if the piece would be otherwise considered sophisticated enough). Its value is its prestige value, meaning how much value academics give it based on their perceived contribution of the work to the world of art. In the same way that in popular music is controlled by the major record labels, academic composers are expected to conform to the tastes, fashions, and predominant political views of the Ivy League and affiliated schools.
One primary difference between these two worlds concerns the very definition of the word “composer.” While most academics would be loath to call even an extremely successful songwriter like Taylor Swift a composer, the music industry does not discriminate based on genre. The U.S. Copyright Office, major music publishers, the performing rights organizations, and the mechanical licensing collectives all consider all creators of music “composers.”

It is honestly unclear to me exactly what the definition of “composer” is to an academic type. In the past the designation was used to differentiate between creators of so-called “classical” music and other musicians, unfortunately often a by-product of either blatant racism/sexism or racist/sexist undertones. While a thousand examples come into my mind, I would hope that today most academic composers would listen to an album like Charles Mingus’s *The Black Saint and the Sinner Lady* and agree that Mingus was a composer who was engaged with both a literal written tradition and a tradition of direct performance and improvisation.

I also think that some academic composers would consider musicians like Paul McCartney or John Lennon to be composers, even knowing how much producer George Martin had to do with shaping the overall sound of The Beatles, and that some of this designation, at least on an individual level, has to do with personal preference. On the other hand, I have run across academic composers who would not consider Frank Zappa to be a “composer” even though he composed over a thousand instrumental works and his music was accepted by and conducted by Pierre Boulez, a seminal figure in the mid-to-late 20th and 21st century classical music worlds.

Generally, I suspect that the definition of “composer” requires either academic credentials through advanced degrees in the “classical” or “new music” worlds or by
having one’s music performed regularly by academic ensembles. In other words, “composer” in academia is a designation that has to be earned by something more than simply creating one or more pieces of music through a digital audio workstation with some “sick beats” in your room.

I myself lean more towards the industry definition of a “composer.” I would automatically and immediately include in this definition any musician who self-identifies as a composer regardless of genre and regardless of my personal feelings about the quality of their music. I do not believe that it is my place or business to tell others what art is or is not or what their art should or should not be, even/especially if they are my actual students.

While most composers/musicians of either the music industry or academic type find success by conforming to the norms of their institutions (Bach and Katy Perry, for example), success can be found by those who almost wholly disrupt those norms. For instance, Björk has had an incredibly successful career delivering her hybrid of electronic dance music and “new music” (for lack of a better term) by disrupting the norms of both those worlds. Other examples that come immediately to mind include Erik Satie, Frank Zappa, Charles Ives, Ornette Coleman, Carla Bley, Yoko Ono, the band Sonic Youth, and many others. Bands like the Beatles or Radiohead found staying power and popular critical acclaim in first conforming to industry genre norms before spinning off into more disruptive experimental excursions once they had acquired a large enough audience.

Ironically, I think a composer like Milton Babbitt, whose music was certainly disruptive from an industry standpoint, was a conformist in academia in the sense that, being both an originator of academic composition and a Princeton faculty member, other
academic composers were expected to conform to that style of music. Now that that style of music is out-of-vogue in academic communities, I think academic composers are expected to purposefully avoid it and/or dismissively/derisively mock it whenever possible.

So we are talking about two musical worlds and two paradigms within them: industry vs. academic, conformity vs. disruption. Unfortunately, I have not found the kind of success or acceptance from the academic world than I have found in the music industry. In that sense, my allegiance was made for me. I am a professional musician and music business professional who loves so-called “art music.”

In many ways, my career trajectory has been most closely aligned with two of the composers I admired the most when I was a teenager: Charles Ives and Frank Zappa. Both worked outside academic circles. Both were successful businessmen and entrepreneurs. While Zappa found success as a performer in the music industry, he was fully aware of his anomalous status in that regard. Both men in their autobiographies gave roughly the same advice to young, aspiring composers: get a job doing something else so you can support yourself and make the art you want (Ives 1972, 131; Zappa 1989, 162). That advice inspired me to get an undergraduate degree in Music Business/Management at Berklee College of Music instead of a degree in composition or performance and that degree has kept me gainfully employed ever since.

One thing that most (if not all) of the artists and composers I have mentioned in the previous pages have in common is a dogged determination to express themselves musically on their own terms regardless of the public perception or academic acceptance of their work, a stance that I find both inspiring and impressive. Frank Zappa, in particular, had a phrase he used to describe his compositional musical philosophy:
“Anything, anytime, anywhere – for no reason at all” or AAAFNRA for short (Zappa 1989, 163).

I suppose, in a sense, one could say that if Schoenberg emancipated the dissonance and Cage emancipated sound that Zappa emancipated composers from adhering strictly to a musical style. In that sense, I started off in a place where all genres were available for experimentation. My oeuvre so far has included pieces (like *The Cribbage Variations*) that fall in line with a fully notated tradition, unnotated solo piano improvisations in 20th century classical or modal jazz styles, pieces that were created as hybrid rock/jazz pieces and come from a partially improvised tradition wherein third party soloists can express themselves freely over a set of changes, and fully improvised group works in the vein of Ornette Coleman or Miles Davis’s electronic bands of the early 1970’s.

I will conclude with what I think is the great secret of show business: give the audience exactly what they want and what they will never expect at the same time. Conform and disrupt!
2) The Shuffle

Fl.

Ob.

B♭ Cl.

Hn.

C Tpt.

Tbn.

Pno.

Vln.

Vla.
slight rit.  

\[ \text{Jazz Noize} \quad \text{♩} = \text{c. 120} \]
4 Mid-December Winds

\( \frac{\text{Fl.}}{\text{Ob.}} \)  

\( \frac{\text{Bb Cl.}}{\text{Fl.}} \)

\( \frac{\text{Ob.}}{\text{Fl.}} \)

\( \frac{\text{Bb Cl.}}{\text{Fl.}} \)

\( \frac{\text{Bb Cl.}}{\text{Fl.}} \)

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\( \frac{\text{Bb Cl.}}{\text{Fl.}} \)
5 Babbitt Time!

\( \frac{66}{66} \)

\( \bullet = \text{c. 92} \)

Fl.

Ob.

Bb Cl.

Hn.

C Tpt.

Tbn.

Pno.

Vln.

Vla.

\( \text{pizz.} \)

\( \text{ff} \)

\( \text{sfz} \)
6 The Deal

Fl.

Ob.

B♭ Cl.

Hn.

C Tpt.

Tbn.

Pno.

Vln.

Vla.
At the Grave of Anton Webern

\( \text{Fl.} \)
\( \text{Ob.} \)
\( \text{Bb Cl.} \)
\( \text{Hn.} \)
\( \text{C Tpt.} \)
\( \text{Tbn.} \)
\( \text{Pno.} \)
\( \text{Vln.} \)
\( \text{Vla.} \)

\( \text{At the Grave of} \)

\( \text{molto espressivo} \)

\( \text{f} ^\text{pizz.} \)
8 The Play

\[ \frac{\text{\( \dot{\text{c. 160}} \)}}{\text{\( \text{f} \)}} \]

142

\begin{align*}
\text{Pno.} & \quad \frameset{142} \\
\text{Vln.} & \quad \text{\( \text{f} \)} \\
\text{Vla.} & \quad \text{\( \text{f} \)}
\end{align*}

148

\begin{align*}
\text{Pno.} & \quad \frameset{148} \\
\text{Vln.} & \quad \text{\( \text{f} \)} \\
\text{Vla.} & \quad \text{\( \text{f} \)}
\end{align*}

156

\begin{align*}
\text{Pno.} & \quad \frameset{156} \\
\text{Vln.} & \quad \text{\( \text{f} \)} \\
\text{Vla.} & \quad \text{\( \text{f} \)}
\end{align*}
Pno.

\[221\]

\[228\]

\[237\]

\[243\]

\[251\]

let ring
9) Level Pegging

\[ \dot{q} = c. 60 \]

Hn.\[ \]
C Tpt.\[ \]
Tbn.\[ \]

262

Hn.\[ \]
C Tpt.\[ \]
Tbn.\[ \]

265

Hn.\[ \]
C Tpt.\[ \]
Tbn.\[ \]

122
Muggins

\( \dot{J} \approx 132 \)

[Fl., Ob., B♭ Cl., Hn., C Tpt., Tbn., Pno., Vln., Vla.]

[RIP Doug Lunn
Feb 11, 2017]
Fl.

Ob.

B♭ Cl.

Hn.

C Tpt.

Tbn.

Pno.

Vln.

Vla.
Fl.
Ob.
B♭ Cl.
Hn.
C Tpt.
Tbn.
Pno.
Vln.
Vla.
The 144,000

\[ q = c \, 120 \]

Is this for the ones who were taken or for the ones who were left behind?
with a great and sudden anger!

you find the answer unacceptable
but you eventually make peace with it
13 Knock Knock Bach


381


383

149
14 75 Raindrops

\[ \frac{\text{Fl.}}{\text{Ob.}} = \text{c. 72} \]

\[ \frac{\text{Bb Cl.}}{\text{Hn.}} \]

\[ \frac{\text{C Tpt.}}{\text{Tbn.}} \]

\[ \frac{\text{Pno.}}{\text{Vln.}} \]

\[ \frac{\text{Vla.}}{\text{f}} \]
15 The Show

\( = \text{c. } 80 \)

- Fl.
- Ob.
- Bb Cl.
- Hn.
- C Tpt.
- Tbn.
- Pno.
- Vln.
- Vla.
slight rit.

Fl.

Ob.

B♭ Cl.

Hn.

C Tpt.

Tbn.

Pno.

Vln.

Vla.

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BIBLIOGRAPHY


