Two-Part Invention for Vibraphone by David Stock: An Analysis and Performance Guide

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TWO-PART INVENTION FOR VIBRAPHONE BY DAVID STOCK: AN ANALYSIS AND PERFORMANCE GUIDE

A Monograph
Submitted to the Graduate Faculty of the Louisiana State University and Agricultural and Mechanical College in partial fulfillment of the requirements for the degree of Doctor of Musical Arts in The College of Music and Dramatic Arts

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In Memory of David Stock
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I would like to thank my parents for all of their support during these challenging years of graduate school away from home. I would also like to thank my amazing wife Deborah Ribeiro for her constant support and encouragement. Most of all, I would like to thank my teachers Dr. Germanna Cunha, Francisco Xavier, Dr. Ney Rosauro and Dr. Brett Dietz for their amazing guidance and support throughout my academic career. I would also like to thank my committee members Dr. Inessa Bazayev, Dr. Griffin Campbell, Dr. Suzanne Stauffer and Dr. Brett Dietz for their patience and helpfulness throughout the process of writing this document. Last but not least; I would like to thank my good friends Joe and Samantha Moore, Sam Trevathan, Luciana Soares, James Alexander, Nancy and Rick Spiller and Thomaz Ribeiro who has helped me get through my days, my weeks and my years in this country.
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Two-Part Invention (2014) is David Stock’s only work for solo vibraphone. Although Stock has a vast amount of solo and chamber works for percussion instruments, his music is not well known in the percussion community. The primary goal of this document is to serve as a gateway to his percussion music. This document is intended to explore his music through an analysis that highlights the main features of his compositional process. It also explores the technical and musical demands within Two-Part Invention.

My research starts with a short bio on David Stock, highlighting the main accomplishments of his career as well as his passion for contemporary music. The analysis portion of this document examines the form, rhythmical features and harmony. In addition to my own personal study of Two-Part Invention, I studied the compositional techniques used by Stock particularly in his percussion writing, including pieces such as Duo Dynamic, U-Turn, Three Vignettes for Marimba, Rosewood Reflections, Shadow Music, Red Stick Ripples, Circling the Square and Double Bars. The performance guide concentrates on mallet choice, playing area, stickings, articulation and range issues. I provided sticking suggestions as well as pictures with the exploration of playing areas. This document includes a list of Stock’s works for percussion as well as an outline of my pedaling suggestions.
CHAPTER ONE: DAVID STOCK

David Stock is an American composer with an extensive list of works. He has been commissioned by world-renowned orchestras such as the New York Philharmonic, the Seattle Symphony Orchestra, and the Pittsburgh Symphony Orchestra. In 1976, Stock founded the Pittsburgh New Music Ensemble. Under his baton, the group was responsible for over two hundred premieres by well-known composers in the course of 23 years. He was a composer-in-residence with the Pittsburgh Symphony Orchestra and Seattle Symphony Orchestra. David Stock had devoted his life to promote new music.

Stock was born on June 3, 1939 in Pittsburgh, Pennsylvania, where he lived for the majority of his life. In 1962, he received his Bachelor of Fine Arts degree in trumpet from Carnegie Institute of Technology (Carnegie Mellon University). The following year, Stock received his Master of Fine Arts degree in composition from the same institution under the guidance of Nikolai Lopatnikoff and Alexei Haeiff. From 1960 through 1961, Stock went to Paris where he took composition courses at the École Normale de Musique with world-renowned composers such as Nadia Boulanger, Jean Fournet, and Arthur Vaurebourg. In 1973, Stock received a second master’s degree from Brandeis University in composition under the tutelage of Arthur Berger.

By the 1970’s, he realized the need to expose young musicians and audiences to contemporary music. With this in mind, Stock wrote two pieces called Zohar and Triflunema which were performed by the Pittsburgh Youth Symphony Orchestra. Stock was known for

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being passionate when talking about the subject of new music and where it stands in our society.

With this passion, he created a strategy called “rediscovery of the audience” which is in direct opposition to Milton Babbitt’s article “Who Cares if You Listen?” In David Stock’s obituary from the Pittsburgh Post-Gazette, Elizabeth Bloom claims he was “a composer and conductor who did more than any other individual to advocate for and perform new classical music in the city of Pittsburgh.” In one his many concert reviews written to the official Pittsburgh Symphony Orchestra blog, Stock expresses his concern with how the general audience perceives contemporary music, stating:

"Contemporary Music"- these two words strike fear and loathing into the hearts of so many concert-goers. Last weekend’s PSO concerts demonstrated just how out-of-date those fears now are. Two works of the 1990s, one by a 20th Century giant, the other by a living American, showed clearly that we have nothing to fear but fear itself. Jennifer Higdon’s blue cathedral is a fine example of the expressiveness, approachability, and, yes, sheer beauty of much of today’s music. It’s hard to imagine anyone not being drawn into the sound-world of this lovely piece unless his/her mind is completely closed. And Messiaen’s late in life Sourire evoked both [the] tenderness and the playfulness of Mozart, its dedicatee. These works, along with many the PSO has presented in recent seasons, should hopefully dispel any notions that "Contemporary" must equal ugly, complicated and hermetic.

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Stock was also devoted to encouraging the music of his own country. As an enthusiastic supporter of contemporary music written by American composers, he served as chairman of the Pittsburgh Alliance of Composers, directed the WQED-FM New Music Project and wrote for significant academic journals such as Perspectives of New Music. With the Pittsburgh New Music Ensemble, Stock repeatedly commissioned many of the most important American Composers, including established artists such as John Cage, Milton Babbitt, Witold Lutoslawski, William Kraft, David Lang, Michael Daugherty, and others. When discussing the importance of valuing American music Stock says:

When an American orchestra takes only European music on a tour of Europe, is this really representative of American culture? We have some of the greatest orchestras in the world here (with our Pittsburgh Symphony near the top); in addition, we have some of the finest living composers: John Adams, Steve Reich, Christopher Rouse, Joan Tower…the list is long. Don’t they stand for today’s American culture in a truer way when an American orchestra goes, for example, to Vienna, than yet another performance, no matter how excellent, of standard European fare of the past? And shouldn’t American orchestras be proud to play Ives or Copland abroad just the way Russian ones bring Prokofiev and Shostakovich to our shores?5

Stock’s music has been performed in concert halls throughout the United States, Europe, Asia, Australia, Central America, and South America. His major works include Kickoff, an orchestral work commissioned and premiered by the New York Philharmonic under the baton of one of the greatest conductors of the 20th century, Kurt Mazur. The premiere of this particular piece took place during the celebration of the orchestra’s 150th anniversary season. Another significant work from Stock’s repertoire is his Concerto for Violin, which the renowned violinist

Andrés Cárdenes premiered with the Pittsburgh Symphony Orchestra at the orchestra’s 100th anniversary under the baton of Lorin Maazel. Some of the other significant orchestral works by David Stock include *Inner Space* (1973) and *Joyful Noise* (1983). Some of his main works for chamber orchestra are *American Accents* (1983) and *Available Light* (1995). Stock has written six symphonies, ten string quartets and many solos and chamber pieces for a variety of instruments. Some of the most important pieces are *Triple Play* (1970), *Dreamwinds* (1975), *The Philosopher’s Stone* (1980), *Parallel Worlds* (1984), *Keep The Change* (1981), *Sulla Spaggia* (1985). Stock has also composed several film and broadcast scores. He has released many CD’s with his own works as well as commissions by prolific new music composers.

Throughout his career as an educator Stock served on the faculty of numerous schools of music including Cleveland Institute of Music, New England Conservatory, Antioch College, University of Pittsburgh, Brandeis University, and Duquesne University where he conducted the Duquesne Contemporary Ensemble from 1990 to 2009. Stock received a Guggenheim Fellowship as well as five Fellowship Grants from the National Endowment of the Arts, five Fellowships from the Pennsylvania Council of the Arts, and commissions and grants from Ella Lyman Cabot Trust, the Pederewski Fund for Composers, the Koussevitzky Music Foundation, the Barlow Endowment, Boston Musica Viva, the Cincinnati Symphony, the Seattle Symphony, the St. Paul Chamber Orchestra, Richard Stoltzman, Duquesne University, and the Erie Philharmonic. In 1992, Stock received the Creative Achievement Award from the Pittsburgh Cultural Trust for “outstanding established artist.”

As a guest conductor, Stock appeared with several orchestras both nationally and internationally. The international list includes Australia’s Seymour Group, Mexico’s Foro Internacional de Musica Nueva, Beijing’s Eclipse, Poland’s Silesian Philharmonic and Pound’s
Cappella Cracoviensis, and others. In his home country, Stock appeared as a guest conductor with the Pittsburgh Symphony, Seattle Symphony, the Los Angeles Philharmonic New Music Group, the Syracuse Society of New Music, the Minnesota Composers Forum, the American Dance Festival, Opera Theater of Pittsburgh, the New England Conservatory Contemporary Ensemble, the Chautauqua Symphony, the American Wind Symphony, the Baltimore Symphony, the Cleveland Chamber Symphony, and many others.

One of the main influences on Stock’s music is Hebrew liturgy. In an advertisement video of the Pittsburgh Symphony Orchestra, Stock discusses the Jewish influences on his music. He says:

For many years, I have been involved with Jewish music as part of my equipment for my concert pieces. It all started with a piece called Yerusha for clarinet and seven players, which has some klezmer elements, and also some music from the liturgy, if you will. And I thought, ok, I have done it once, I will never do this again, you know, it was a great thing to try. And then one thing after another came up that seemed to make me want to go back to it, back to the roots, you might say! Stock goes on to say that his third symphony, Tikkun Olam, was his next significant work with Jewish influences. This work was written to the Boston Modern Orchestra Project, after a specific request from the conductor to write a piece inspired by the Jewish culture. He composed his Cello Concerto shortly after and Stock claims that “the cello is such a rich voice and it has been used several times to emulate the voice of the Cantor in a Synagogue.” For that reason, Stock wrote the last movement of the piece as cantorial. His Sixth Symphony is another work

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representing his Jewish religious beliefs. The third movement of this piece includes tunes from the liturgy, such as *Schma Israel* and others.

In the latter half of his career, he began to write extensively for percussion. Stock states in an interview given to percussionist Brett Dietz, “because I think of myself as a very rhythmically driven composer, percussion has always been rather integral to my orchestral, or wind symphony, or any other kind of writing.” Stock states, “Shadow Music, a work written in 1964 and revised in 1979, was Stock’s first work for percussion ensemble. By the end of his life, Stock had written numerous percussion works including solo pieces, chamber works, and three concerti. Though Stock was a successful composer and a promoter of new music, his works for percussion are not yet known as part of the standard repertoire. When reviewing the CD entitled *In Motion: The Percussion Music of David Stock*, John Lane, states,

Stock’s music is lively and friendly, yet smart and well crafted. I hope this recording makes his percussion music more well-known and widely performed. I read a quote by Gerard Schwartz while writing this review, which sums up Stock’s music well: ‘[it] can relate to an audience without being sugary.’ Beginning with Stock’s first work for percussion, “Shadow Music,” In Motion is a snapshot of how an engaging composer has made use of percussion through a long and distinguished career.8

Stock had a life full of accomplishments both as a composer and as an important voice to the development of new music. The Pittsburgh New Music Ensemble is one of Stock’s greatest

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http://publications.pas.org/archive/Jan13/1301.70-7767
contributions to composers, musicians, and listeners involved with contemporary music. His compositions are acclaimed by some of the greatest orchestras worldwide. Stock died on November 2, 2015 at the age of 76, leaving us with an extensive list of works for a diverse range of ensembles and solo repertoire.
CHAPTER TWO: TWO-PART INVENTION, AN ANALYSIS

This chapter includes a theoretical approach to *Two-Part Invention* by David Stock. It provides a guide for better understanding of Stock’s exploration of rhythmical motifs and the basis of harmonic features. The analysis benefits performers who seek to better comprehend Stock’s style of writing. I will outline the form of both movements and discuss recurrent musical ideas. His percussion compositions usually contain fragmented rhythmic figures functioning as motifs. These short motifs interchange throughout the work, creating a diverse background to his melodic and harmonic ideas. There are some features in his percussion music that remain similar throughout his career and this work is no different.

Stock’s humorous play on words shows in the titles for his compositions. Compositions such as *Back to Bass-ics* for String Orchestra (1985), *Rockin'Rondo* (1987), and *Sax Appeal* for 4 Saxophones (1990) are just some of the titles that showcase his creativity. When studying *Two-Part Invention*, I found that the title does not do justice to the traditional meaning of this compositional style. The style two-part invention, also known as two-voice invention is usually associated with two-voice counterpoint exercises. The fifteen *Two-Part Invention* by Johann Sebastian Bach are some of the most popular works of this genre. Grover Dictionary of Music defines Invention as “usually a short vocal or instrumental piece with no very special defining characteristics apart from novelty of material or form.” Grover’s definition is more suitable to the ideas presented by Stock, since novelty of material and form is a significant quality of this

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9 Thomas Benjamin. “Counterpoint in the Style of J. S. Bach” *Schirmer Books, NY 1986*

composition. *Two-Part Invention* does not pay homage to the Baroque era in any way, therefore, I believe Stock refers to the word invention as creation. Since Stock names the first movement Part I, and the second movement Part II, it is clear that the “Two-Part” in the title represents the two movements of the work. The next portion of this paper discusses the form and the main rhythmic and harmonic features of both movements.

**PART I**

Part I is a fast, rhythmically driven movement with multiple repetitions of short ideas.

One of the main harmonic features of Stock’s music is its chromaticism. There is a consistent lack of key signature in his output. Because of that, it is difficult to achieve a successful analysis of Part I with conventional methods of music theory. Although the use of many different terminologies can make sense in some parts of this movement, it will be challenging to be consistent with the same terms throughout the piece. For example, there are many instances where one may notice the use of major and minor sonorities with the second, ninth, or eleventh of the chord added. However, these sonorities will precede or follow a tone cluster, an idea built on octatonic scales, or a short development of a certain set class. As studied later in this chapter, we will find that the harmonic feature that unifies this piece is the consistent exploration of intervals of seconds and thirds.

**FORM**

The form of this movement can be justified by studying the recurrences of the rhythmic patterns. If we look at mm.1-12, we will notice a symmetric arrangement through every four measures creating three sets of the same rhythmic pattern. Throughout this analysis this section is refer to as section A. Following, mm.13-18 is called section A1, since it is a consequence of
the previous section and it functions as a preparation to the subsequent measures. The next section, mm.19-31, is thirteen measures long and it is a transition to the largest section of this movement, section C. This transition, hereafter entitled section B, is based entirely on quarter notes featuring harmonic changes through every one to four measures. Stock’s main ideas are primarily developed through mm.32-100. Here, Stock works with short motifs that interchange among each other with no exact reoccurrence of its harmonic or rhythmic material. During this mid-section, most of the motifs repeat three times before introducing the next motif. The next section is a transition to the coda and it goes from mm.101-113. This is a repetition of section A. For the first time in the entire movement, an idea repeats with the same harmony and with similar rhythmic structure. The coda goes from mm.114-118 and it presents new materials that resembles a fusion of the motifs previously used. The following table summarizes the overall form of this movement.

<table>
<thead>
<tr>
<th>A</th>
<th>A1</th>
<th>B</th>
<th>C</th>
<th>A</th>
<th>Coda</th>
</tr>
</thead>
<tbody>
<tr>
<td>mm.1-12</td>
<td>mm.13-18</td>
<td>mm.19-31</td>
<td>mm.32-100</td>
<td>mm.101-113</td>
<td>mm.114-128</td>
</tr>
</tbody>
</table>

Figure 1: Form of Two-Part Invention, Part I

**RHYTHMIC FEATURES**

There are three main motifs that function as the basis of this movement. Stock modifies the rhythmic and the harmonic content of these motifs during Part I. Following we will discuss the basis of the three main motifs. Features of these motifs as well as its variation are discussed further in the analysis.
The first motif is the quarter note chords that drives the pulse throughout the work.

(See Figure 2)

\[ \text{Fast and lively (} \dot{=} \text{ ca. 126)} \]

\[ \text{f} \quad \text{poco dim.} \quad \text{mf} \]

Figure 2: *Two-Part Invention, Part I*, mm.1-4 - motif based on quarter notes.\(^\text{11}\)

The second main idea developed throughout Part I is the ascending eighth note gesture. (See Figure 3)

\[ \text{f} \quad \text{f} \quad \text{f} \]

Figure 3: *Two-Part Invention, Part I*, mm.36-38 - ascending eighth note motif\(^\text{12}\)

The last main idea developed on this movement is the use of dyads and triads in contrasting registers. (See Figure 4)

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\(^{11}\) David Stock, *Two-Part Invention*

\(^{12}\) Ibid
Figure 4: *Two-Part Invention, Part I*, mm.54-57 - dyads in far register

The quarter note motif remains predominant throughout this movement. The main characteristic of this motif is its static harmony supporting the driven pulsation of the quarter notes. Occasionally the quarter note pulsation creates a false impression of a compound meter. For example, even though from mm.9-17 the time signature is 5/4, at times it appears to fluctuate from 2/4 to 6/8. (See Figure 5)

Figure 5: *Two-Part Invention, Part I*, mm.9-12 - false impression of compound meter

The quarter note motif also creates a combination of downbeats and upbeats. Its duration ranges from one to four measures. It will often contain eighth notes that create an impression of pulse fluctuation from downbeats to upbeats. The first example of this variation is found at mm.32-35. (See Figure 6)

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13 David Stock, *Two-Part Invention*

14 Ibid
As discussed before, the second main idea developed throughout Part I is the ascending eighth note motif. This type of writing is a recurrent theme in Stock’s music as it can be found in various pieces of his output, including *Red Stick Ripples*. (See Figure 7)

Throughout *Red Stick Ripples* this motif is explored with the same characteristics as in *Two-Part Invention*. Here, six notes repeat four times with the same dynamic nuance and articulation. As in *Two-Part Invention*, this short motif is repeated throughout *Red Stick Ripples* with different harmonic structure every time it is presented. The main feature of this motif is the upward motion in conjunction with a crescendo.

Similar to the quarter note idea, the eighth note motif has its variations. Stock utilizes this motif six times during the course of this movement, and he never repeats it in the same way. It is first introduced during section A1. From mm.13-18 one finds the repeated ascending gesture

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15 David Stock, *Two-Part Invention*

16 David Stock, *Red Stick Ripples*
starting on the second eighth note of each measure. This happens in conjunction with the pulsing quarter note gesture. (See Figure 8)

![Figure 8: Two-Part Invention, Part I, mm.13-14 - Ascending eighth notes with quarter note motif.](image)

The most straightforward use of the eighth note motif is its second reoccurrence on mm.36-38 as previously shown in figure 3. The eighth note motif appears for the third time on mm.40-42. In this version, Stock emphasizes the beaming of the measure by accenting the fifth beat of the 7/8 measure. (See Figure 9)

![Figure 9: Two-Part Invention, Part I, mm.40-42 - eighth note motif with accents to emphasize beaming of measure](image)

The fourth time the eighth note motif appears, the ascending line ends with a descending interval of a minor third. (See Figure 10)

---

17 David Stock, *Two-Part Invention*

Figure 10: *Two-Part Invention, Part I*, mm.58-59 - ascending eight note gesture ending with descending motion.\(^{19}\)

This is a preparation for the next variation of the eighth note motif. The fifth time the ascending figure appears, a descending line with the same notes occurs. (See Figure 11)

Figure 11: *Two-Part Invention, Part I*, mm.84-85 – ascending and descending eighth note motif.\(^ {20}\)

The descending eighth note gesture is a consequence of the ascending motif. Notice that Stock unifies both ascending and descending line with a slur, converting it into one cell. The dynamic gesture of the descending line is the opposite of the ascending crescendo motif.

The last appearance of this motif is during the coda. Here the motif is for the first time not developed with eighth notes. Through a process of augmentation Stock modifies the motif to quarter notes on the upbeat. (See Figure 12)

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\(^{19}\) David Stock, *Two-Part Invention*

\(^{20}\) Ibid
The third main rhythmic idea Stock explores throughout the work is another signature of his writing. This idea is usually presented with accents in the strong partial of the beat together with weaker notes in far registers. Most importantly, it features two groups of notes in contrasting registers delineating the beaming of a measure. This same type of writing is also found in *Double Bars* as well as in many of his compositions. The first example of this motif is presented in mm.54-57 and it can be found at the beginning of this chapter in figure 4. This motif is consistently build upon dyads or triads. (See Figure 13)

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21 David Stock, *Two-Part Invention*

22 *Ibid*
This motif will be consistently explored with eight notes throughout this movement with the exception of mm. 52-54 and mm.62-64. Here, the motif goes through the process of augmentation and instead of eight notes Stock extends it to half notes. (See Figure 14)

![Figure 14: Two-Part Invention, Part I, mm.62-64 - augmentation of dyads in contrasting registers](image)

Next, an outline of an excerpt of section C is provided based on the rhythmic features discussed. The variations of the three main rhythmic motifs are developed throughout Section C. These variations are interchanged every one to four measures. When explaining his music to an audience, I like to use the following analogy: Stock likes to re-arrange the words of a sentence. For example, if we had the sentence “Bob went to the mall with his wife.” Stock will use multiple variations of this sentence, such as, “to the mall with his wife Bob went”, “wife to the with Bob mall” and so on. The following outline helps clarifying this analogy. The motifs are labelled a, b and c based on the order they were presented. (See Figure 15)

---

23David Stock, *Two-Part Invention*
HARMONIC FEATURES

The harmonic structure of this movement is based on intervals of seconds and thirds. Stock also utilizes the inversions of these two intervals in order to create different sonorities. Essentially, every harmonic or melodic gesture of this movement is built on combinations of these intervals, with the occasional use of fifths. In fact, these two intervals had a strong importance throughout Stock’s career. One can find them in pieces from as early as 1964. *Shadow Music* for Harp and Percussion exemplifies Stock’s early use of seconds and thirds as main compositional source. (See Figure 16)

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24 David Stock, *Two-Part Invention*
Notice that the vibraphone line starts with the Bb moving a minor third down to G. Then the G goes to an A, which would be a major second. However, Stock moves the A up an octave creating an interval of a ninth. Here, Stock hides the obvious motion of his favorite two intervals by moving some of the notes to different registers. If we rearrange the notes in the sequence as they appear to a closer register, we would have the following intervals. (See Figure 17)

\[
\begin{align*}
&\text{m}3 &\text{M}2 &\text{m}2 &\text{M}2 &\text{m}2 &\text{M}2 &\text{m}2 &\text{M}2 &\text{m}2 &\text{M}3 &\text{A}2 \\
&- &- &- &- &- &- &- &- &- &- &- \\
\end{align*}
\]

Figure 17: *Shadow Music* (1964), mm. 20-23 - reduction of vibraphone melody.\(^{26}\)


\(^{26}\) M = major, m = minor, A = augmented, 2 = second, 3 = third
As in *Shadow Music*, *Two-Part Invention* presents the same features of octave displacement within the intervals of seconds and thirds. As a consequence of the extensive use of these two intervals, a set theory analysis is consistent to some of the sections presented in this movement. Set classes such as (013) and (024) is the basis of most of the motifs. It is interesting to notice the transpositions among these set classes.

The first twelve measures of Part I, section A, serves as an introduction to the piece. The quarter note motif follows a harmonic pattern throughout this section. The tetrachord Ab, E, G and D starts *forte* and gradually *diminuendo* to *mezzo forte* through two measures of 4/4. Then the eighth notes join the quarter note motif, which remains the same, adding a C and a B, respectively, on the upbeat of each tetrachord. Mm.5-8 repeats the exact same rhythm and dynamic markings of mm.1-4. However, now the tetrachord builds on A, F, G#, D. Mm.9-12 is also a repetition of this motif. The difference here is that these four measures are in 5/4 and the chord is built on Bb, F#, A, D. An approach of this chord progression with set theory analysis enriches our perspective on this section. By using Joseph Straus concept of fuzzy transposition, we can observe the voice leading created by this chromatic motion.27 (See Figure 18)

If we look at this chord progression, we may notice that the pitch D remains the same while the three lower notes create an ascending chromatic line. The three lower notes can be simplified as in three sets of (014) that moves up by T1. However, the pitch D rejects the chromatic transposition requested by T1.

The harmonic structure of section A1 can be analyzed in the same manner. Stock uses three chords at mm.13-18. The first harmony goes from mm.13-14 and it consist of G, A, B and D, normal form {7, 9, E, 2} and set class (0247). The second harmony takes place at mm.15-16 and it presents the pitches F#, G#, B and E. Therefore, its normal form is {4, 6, 8, E} which makes this tetrachord another member of (0247). The last harmony of this section is presented at mm.17-18 with the pitches G, A, D, C. Hence, resulting in normal form {7, 9, 0, 2} and (0257). By looking at the set classes of these three harmonies, one will notice the similarities among these tetrachords. Following is a table with the transitions from one tetrachord to the next. (See Figure 19)
The transposition from the first harmony to the second is a simple process of $T_9$. However, in order to transpose the second harmony to the third we need to, once again, use Joseph Straus technique of fuzzy transposition. Throughout this process the transposition of the first to the last tetrachord only modifies one note, the pitch B moves to a C.

Notice that for both set theory analysis presented in this chapter the sets were only transposed through $T_9$, $T_1$ and $T_3$. If we translate these transpositions in terms of intervals, we would have intervals of seconds and thirds. This only comes to prove Stock loyalty with these two intervals, both harmonically and melodically.

In conclusion, Part I is developed with variations of three main rhythmic ideas. Throughout this movement these short motifs are rhythmically and harmonically modified every one to four measures. Stock’s style of writing encumbers an analysis with traditional methods of
music theory. Similar to most of his output, Part I is another creation of Stock that features the intervals of seconds and thirds. Because of the extensive use of these two intervals a set theory analysis is consistent in some excerpts of this movement.

**PART II**

As a contrast of the previous movement, Part II is calm and melodic. The indication “expressive, molto legato” shows the composer’s intention on creating a contrast between Part I and Part II. Similar to the previous movement, this analysis will primarily focus on the relationship of the main rhythmic motifs. It will also discuss features of the main harmonic and melodic changes. It highlights the main features of Stock’s writing, connecting this work to other compositions of his output. An outline of the overall form of Part II will also be provided.

**FORM**

The overall form of this movement is similar to Part I. Instead of large sections of music, creating a typical ABA form, Stock works with small fragments of music, transitioning from one idea to the next. Nonetheless, one can find larger sections that outlines the form in a more conventional method. Section A goes from mm.1-13 and it serves as an introduction where most of the ideas utilized throughout the work are first presented. The breath mark on m.13 suggests the end of Stock’s first section. The following measures are a development of the ideas presented on section A. Section B goes from mm.14-28 and it consists mostly of variations of the motifs previously introduced in Section A. Section C goes from mm.29-46 and it is entirely based on four notes chords that resemble rhythmic motifs of the previous sections. The coda goes from mm.47-50 and it presents new musical ideas that brings the work to a calm and peaceful end.
Figure 20: Form of *Two-Part Invention*, Part II

**RHYTHMIC FEATURES**

The first rhythmic motif is introduced in mm.1-4 and it is repeated later on. This motif follows the rhythmic pattern of short-short-long-short-long. The same rhythmical idea is repeated in m.14. The motion of the melodic line is the same in both measures. This motif consists of two sets of pitches, one in a higher register and the other below it. The pattern of this harmonic motion will be high-low-high-low-high. (See Figure 21)

![Figure 21: Two-Part Invention, Part II - a = m.1, b = m.14 – short-short-long-short-long motif.](image)

The next motif is presented in mm.6-8 and it is another signature of Stock’s writing. (See Figure 22)

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28 David Stock, *Two-Part Invention*
Figure 22: *Two-Part Invention, Part II*, mm.6-8 – common motif in Stock’s output\textsuperscript{29}

The main feature of this motif is that it starts with a rest and usually features a curve line that begins with a long upward motion followed by a short descending gesture. Stock usually writes this motif with notes of the same rhythmic value. He often utilizes this motif in other compositions of his output. In *Double Bars*, a duo for marimba and vibraphone, we can clearly see the use of this motif in both the marimba and vibraphone parts. (See Figure 23)

Figure 23: *Double Bars* - motif similar to mm.6-8 of *Two-Part Invention*\textsuperscript{30}

Another important motif of this movement is the descending eighth note gesture. It starts with a rest followed by a descending line of dyads or four note chords. Stock introduces this

\textsuperscript{29} David Stock, *Two-Part Invention*

\textsuperscript{30} David Stock, *Double Bars*
motif with two different articulations throughout the work. Often this motif will be marked as *staccato* or *tenuto*. However, Stock will also use this gesture with a slur, indicating a *legato* descending motion. Melodically, this gesture is also presented in two different versions. The first is found at mm.9-10 and m.34. Here, each note will be lower than the preceding note. (See Figure 24)

![Figure 24: Two-Part Invention, Part II – a = mm.9-10, b = 34.](image)

The second version features the repetition of one chord before descending to the next chord. (See Figure 25)

![Figure 25: Two-Part Invention, Part II- a = m.11, b = m.36](image)

The next motif is first introduced in m.8. The main characteristic of this gesture is the rhythmic pattern of short-short-short-long, and it will be extensively utilized throughout this movement. The melodic line of this motif will follow two different patterns. The first pattern

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31 David Stock, *Two-Part Invention*

32 Ibid
starts with an upward motion, followed by a downward motion and concluded with another upward motion. There are several instances of this melodic format throughout Part II. In Figure 26, you will find examples that helps us understand Stock’s transformation of rhythmic motifs. (Figure 26)

![Figure 26: Two-Part Invention, Part II – a = m.8, b = m.16, c = mm.29-30, d = mm.32-33.](image)

The second melodic pattern of this motif will be found in mm.27-28. It is a combination of two upwards motion followed by a descending gesture. (See Figure 27)

![Figure 27: Two-Part Invention, Part II – mm.27-28](image)

The gesture that goes from mm.19-26 is another strong feature of Stock’s writing. Here, an eighth rest precedes the staccato eighth notes. Stock often utilizes this gesture with a static

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33 David Stock, *Two-Part Invention*

34 *Ibid*
harmony. In this instance, we will notice the dyad B and C# functioning as the static motion with sporadic recurrences of thirds above or underneath this texture. (See Figure 28).

![Figure 28: Two-Part Invention, Part II, mm.19-26](image)

This combination of short rhythms starting with a rest and with a static harmony can be found in many of Stock’s compositions, including *Duo Dynamic*. In *Duo Dynamic*, the vibraphone plays the static motif while the violin plays a *cantabile* melody. (See Figure 29)

![Figure 29: Duo Dynamic, mm.16-21 – example of short eighth note gesture](image)

**HARMONIC FEATURES**

If we look at the melodic and harmonic structure of this movement, we will notice that the entire movement is, once again, built on Stock two favorite intervals, the second and the

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35 David Stock, *Two-Part Invention*

36 David Stock, *Duo Dynamic*
third. One may explain most of these chords with jazz nomenclature. However, by looking at the movement as a whole one will notice the extensive use of seconds and thirds as the source for all the musical ideas. Similar to the previous movement, Stock works with short appearances of motifs. The constant change of harmonic material challenges the listeners in their search for a tonal center. However, in this movement Stock manages to create a tonal center towards the final bars in order to end the music with the same chord he started.

If we look at m.11, we will find a consistent pattern among the notes of each chord. There is a descending gesture with chords that are mostly structured in the same inversion, an interval of a third placed above a second. The exception is the second chord where Stock writes a second above a third. (See Figure 30)

![Figure 30: Two-Part Invention, Part II, m.11 - descending gesture with chords built on seconds and thirds](image)

The first chord may be given a conventional name, such as Bbm(2). The second chord can be seen as a Gb(#11), the third chord as an Ebm(2), and so on. However, by looking at the overall structure of this movement it is easy to conclude that Stock had no intentions of naming these chords as such. Also, the melodic motion of the bass line is another example of Stock’s exploration of thirds. Here, the descending line Bb, Gb and Eb spells two falling thirds. In fact,

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37 David Stock, *Two-Part Invention*
every melodic interval between the four voices of each chord are moved down through intervals of seconds or thirds. The lack of a key signature and the consistent overall chromatic motion without a tonal center is an evidence that the harmonic structure is not based on these jazzy harmonies. Instead, he works with the many possibilities of the combination of his two favorite intervals.

The next chord with a different configuration of the ones just described will be found at m.16. The first chord of this measure can also be described as a Db7, however, this is another example of a chord built with seconds and thirds. (See Figure 31)

![Figure 31: Two-Part Invention, Part II, m.16 - example of chord built on intervals of second and third](image)

Notice that the interval created by the B and Db can be enharmonically transposed to a major second. The Db is enharmonically equivalent to a C#, which is a major second above the B of the chord, giving us another combination of the intervals of second and third. It is possible to reduce any chord of this movement into seconds and thirds when bringing its notes to a closer register. (See Figure 32)

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38 David Stock, *Two-Part Invention*
The highlighted chords are voiced more opened than the previous chords here discussed so far. When bringing the notes of these chords closer together, we will find clear examples of chords built on seconds and thirds. (See Figure 33)

The chord found in mm.42-43 is often used in Stock’s compositions. (See Figure 34)

Although it is also used in different inversions, Stock often maintain the same configuration as this one. This flat nine chord with the ninth in the bass sonority can be found in many of his works including: *Circling the Square for Marimba and SATB Saxophone Quartet, Three Vignettes for Marimba*, and others. (See Figure 35, 36)

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39 David Stock, *Two-Part Invention*
Figure 35: *Circling the Square*, mm.184 – reoccurrence of chord from mm.42-43

Figure 36: *Three Vignettes for Marimba, Slo-mo*, m. 22 – reoccurrence of chord from mm.42-43

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40 David Stock, *Circling the Square*, for Marimba and SATB Saxophone, (Maryland Heights, MO: Keiser Classical, 2008)

In Part II, Stock utilizes many of the rhythmic motifs he had used in many of his previous compositions. Similar to Part I, Stock works with interactions of short motifs in Part II. Often, rhythmic figures go through a process of augmentation to explore the capabilities of a simple short motif. The extensive use of the intervals of seconds and thirds, both vertically and horizontally, shows Stock’s true thoughts on his harmonic structure. With that in mind, we can now see this style of writing as one of Stock’s signature.
CHAPTER 3: TWO-PART INVENTION, A PERFORMANCE GUIDE

*Two-Part Invention* is one of Stock’s most recent works for percussion and it is his first vibraphone solo work. I began my collaboration with Stock on March 6, 2014 during one of his visits to Louisiana State University. He was a guest composer for the *Ion Project*, a celebration of Edgard Varèse’s monumental percussion ensemble piece, *Ionization*. Nine composers were challenged to write a piece with the same orchestration as *Ionization*. David’s piece, *Varesesation*, had its world premiere at the concert. After the concert, I approached David and shared my interest in his music, which led to our first collaboration, *The Duo Dynamic*, a piece for multi-percussion and violin. The piece was completed on April 20, 2014, a month and a half after we met. A couple of months later I sent an email to Stock asking if he had any marimba pieces that had not yet being recorded. I needed an extra piece to include on my solo CD. Stock responded to my email within two hours, saying:

Hi Gustavo,
Both my solo marimba pieces, written for Brett, are on my Percussion CD. When is the recording session? Maybe I could write something especially for you?
Let me know what you think.
Best Wishes,
David

After a couple e-mails back and forth, Stock suggested a vibraphone solo instead of a marimba piece as originally planned. Two-Part Invention for Vibraphone was finished on November 11, 2014 and I had the opportunity to premiere the piece on May 22, 2015 at the 2\textsuperscript{nd} *Encontro Percussivo UFPE* (Brazil).

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42 David Stock, e-mail message to the author, November, 2014.
This chapter will give an overview of the technical challenges throughout the piece. It will discuss the tempo markings, mallet choice, playing area, sticking suggestions, articulation and issues with range. This chapter will be a technical facilitator that will assist percussionists in realizing Stock’s music with conviction and a better understanding of what challenges they will face. Hopefully, this will increase the interest of more percussionists in Stock’s music.

The vibraphone is equipped with a pedal system that allows the performer to control the sustain of the sound. Compared to the short decay of a marimba or a xylophone bar, the aluminum bars of a vibraphone allows the notes of this instrument to sustain longer. Similar to a piano pedaling system, this will permit more than one note to ring simultaneously. Often, pieces written for vibraphone offer a pedaling guide as well as instructions to damp a specific note during a passage. This will avoid the issue of an unwanted note still ringing during a new harmony. Stock has left the pedaling of this piece up to the performer. I will provide a sample of my pedaling decisions, in the appendix.

PART I

The music provides the following tempo marking; “Fast and Lively” with the quarter note = ca. 126. As a result of the suggested tempo, accuracy is the most difficult aspect of this movement. The tempo is consistent throughout Part I with the exception of two measures during the coda. Even then, the lack of traditional terms such as rallentando or ritardando show Stock’s intentions of keeping the energy throughout this movement. Instead, Stock writes “hold back”, and this only applies to three chords in the course of two measures. An ideal interpretation of this movement should be intense and with energy. The rhythms and dynamics should be strictly followed with a mechanical approach to tempo. Subtle changes of character may be applied to each of the fragments of music as discussed in the analysis presented in the previous chapter,
however, these musical decisions should not affect the intensity of this movement. (See Figure 37)

Figure 37: Two-Part Invention, mm125-126 – hold back

MALLET CHOICE

The mallets should be carefully chosen in order to achieve clarity and articulation throughout the vibraphone. My suggestion for Part I is to use three medium-hard mallets in mallets 1, 2 and 3, and a hard mallet on mallet 4\(^\text{43}\). This allows the performer to better articulate some of Stock’s phrasings. For example, in mm.3-4 as well as throughout the twelve first measures the quarter note figure uses both hands with double vertical strokes. When the melodic eighth note line appears in the upper voice, mallet 4 is the only option for this gesture since the quarter note chords in the bottom uses mallets 1, 2 and 3. With a harder mallet on position 4 one can easily bring out the melody in the upper voice. (See Figure 38)

Figure 38: Two-Part Invention, mm.3-4 - Mallet choice.

\(^{43}\) Throughout this document, mallets will be numbered from 1 through 4, left to right
Similarly in mm.13-18, the eighth note motif is the most active voice and it should be performed with mallet 4 as much as possible. (See Figure 39)

![Figure 39: Two-Part Invention, mm.13-18 - Mallet choice.](image)

The performer must keep in mind that there are sections throughout the work on which mallet 4 is not used as the main voice. Therefore, one must make every effort to balance the fourth mallet to the rest when necessary.

**PLAYING AREA**

The fast tempo in conjunction with the constant chromatic changes creates a challenge to achieve accuracy. Rather than always performing in the center of the bar, it is important to consider different playing areas for some of the passages in this movement. The edge of both accidental and natural bars will be essential to an efficient performance. As opposed to a marimba or a xylophone, the plane configuration of the vibraphone keyboard allows us to perform in the edge of the natural bars. This facilitates the hand position when performing certain chords while not losing the desired sound. On the other hand, similar to a marimba or a xylophone, it is very important to strike the very edge of the bar in order to obtain a full sound. Playing close to the node will result in a dead sound. I will discuss excerpts where the edge of
the bar is helpful for a better performance and provide pictures to compare the hand position of
chords performed in the edge of the bar as well as in the center of the bar.

Notice the left-hand and right-hand motion from mm.4-5. (See Figure 40)

Figure 40: Two-Part Invention, Part I, mm. 4-5.

Considering the small interval between mallets 2 and 3, these transitions can be quite difficult if
performing in the center of the bar. (See figure 41)

Figure 41: mm. 4-5, center of the bars.

On the other hand, when performing in the edge of the bars the hand motion will be minimum.

(See Figure 42)
The chord that starts in m.67 can also feel uncomfortable if one attempts to perform in the middle of the bar. (See Figure 43)

![Figure 42: mm. 4-5, edge of the bars](image)

![Figure 43: Two-Part Invention, Part I, mm. 67](image)

The use of the edge of the bars will avoid an odd elbow position. (See Figure 44)
Figure 44: m. 67, center of the bars and edge of the bars, respectively

The same will be true in mm.114-119. (See Figure 45)

Figure 45: Two-Part Invention, Part I, mm.114-119

Throughout this section both hands have various transitions from accidentals to naturals. For example, the right hand goes from a Bb and a D to a B and a D while the left hand goes from a Cb and a G to a C and a G#. An excessive arm motion will be avoided if performed at the edge of the bars.

**STICKINGS**

It is challenging to find an optimal sticking for some of the sections of this movement.

Mm.13-16 requires a fast motion in the left hand. (See Figure 46)

Figure 46: Two-Part Invention, mm.13-16, Stickings

The downward movement from G to B is extremely difficult considering the speed and the dynamic of this section. The right hand also presents its challenges considering the fast interval change. In order to achieve accuracy, one must practice each hand separately. I offer a sticking for both left and right hand respectively. (See Figure 47)
The next excerpt is the most technically demanding passage of the piece. Mm. 88-91 is another section where I would recommend studying both hands separately. (See Figure 48)

Here mallets 3 and 4 play octaves in single alternating strokes while the left-hand plays octaves with double vertical strokes. (See Figure 49)
Another section of this movement worth studying the sticking is mm.70-72. Here, the left-hand plays octaves in single alternating strokes while the right hand plays double vertical strokes. The challenge presented in this section is the motion between the mallets 2, 3 and 4. Notice that the leap from the B, C and D to G, A and B requires dexterity considering the fast motion between these voices. In order to achieve accuracy, one must practice at a slow speed and gradually increase the speed with a metronome. (See Figure 50)
ARTICULATION

One of the problems when performing with the vibraphone pedaling system is the challenge to articulate a musical phrase properly. The initial attack of the note is no longer the only concern a percussionist must have. We also need to pay attention to the duration and the cut-off of the subsequent note. There are different ways to articulate a phrase using the many vibraphone dampening techniques. Following, I will discuss ways to perform sections that offer challenges with articulation.

The *forte crescendo* ascending gesture at mm.36-39 can be very difficult to achieve with consistency throughout. There is an accent in the first note followed by five ascending pitches. These are connected with a slur and phrased with a *crescendo*. (See Figure 51)

![Figure 51: Two-Part Invention, Part I, mm. 36-39 - articulation](image)

The right use of the pedal will be essential to articulate each note and achieve a successful phrasing. The pedal must follow the slur indication, connecting the pitches G to A. In order to start the gesture again, one must assure that all the previous notes are properly damped. The pedal should go down for the G and released before playing the A. Although the A will be slightly shorter than the previous notes, this avoids unwanted notes ringing in the subsequent gesture. Trying to release the pedal after the A would affect the next gesture, considering that the
notes will resonate even after completely damped. Therefore, consistency in the phrasing would not be achieved.

The combination of long-short sounds in mm.43-45 is another difficult section to articulate properly. The syncopation between the quarter notes and eighth notes are specifically marked as accented quartet notes, accented eighth notes and staccato eighth notes. (See Figure 52)

![Figure 52: Two-Part Invention, Part I, mm. 43-45](image)

There are three levels of pedaling one may use to distinguish these three sounds. For the accented quarter note, the pedal should be down allowing the bars to vibrate as much as possible. For the staccato eighth note, the pedal should be fully dampened to create a contrast with the previous quarter note. For the accented eighth note, the pedal will be in half pedaling position.

The jazz vibraphonist Errol Rackipov describes half pedaling as,

> Half pedaling is a technique in which the pedal is depressed just enough to let the bars ring. The damper (felt) barely touches the bars. The continuation of ringing is a little bit longer than if the bars are completely dampened and shorter than if the bars are completely left to ring.  

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Here the half pedaling will work as a transition from the staccato eight note to the open sound of the accented quarter note.

**RANGE ISSUES**

Stock’s commitment to his intense style of writing sometimes creates extremely difficult technical passages. The constant exploration of contrasting registers with highly rhythmic material will pose a challenge to performers of the highest level. Dr. Brett Dietz has been one of the most active performers of Stock’s percussion music. I have taken the following information from an email between Brett and myself.

GM: In your opinion, what are the main challenges when learning one of Stock's works for percussion?

BD: Finding ways to make the meter changes work. Sometimes he didn't give us enough time to move between drums or registers.45

It is extremely difficult to transit from mm. 87 to m. 88. Here, the right-hand moves from A and C to C# in an octave higher while the B in the left hand moves to two octaves higher. The left-hand has to travel a large interval whilst switching from an interval of fourth to a second with double vertical strokes. (See Figure 53)

![Figure 53](image)

Figure 53: *Two-Part Invention, Part I*, mm.87-88.

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45 Brett Dietz, e-mail message to percussionist, May 31, 2016.
In m. 124, we can find another example of this issue. Here, two eight note chords are placed two octaves apart. (See Figure 54)

Figure 54: Two-Part Invention, Part I, m.124 - range issue

This is another example of excessive motion with double vertical strokes. In both cases I would recommend to study these transitions slowly, paying attention to the body movement and trying to anticipate the chord after the leap.

The last gesture of this movement is one of the most difficult passages of this work. The two eighth notes in m.128 requires the right-hand to move an octave higher while the left-hand moves an octave lower. This is again another section with double vertical strokes, but this time in contrary motion. (See Figure 55)

Figure 55: Two-Part Invention, Part I, m.128 – range issue
For this section, I recommend a deep study of Gordon Stout’s *Ideo-Kinetics, A Workbook for Marimba Technique*.⁴⁶ Although the title suggests this is a book for marimba, the concept studied here can be applied to any other percussion keyboard instrument. His method works on the memorization of horizontal motion, by creating a point of reference and playing different intervals without visual assistance.

**PART II**

This next portion will outline the main technical difficulties of the second part of this composition. Similar to Part I, I will discuss mallet choice, playing area, sticking, articulation and range issues. I believe these are the most important technical aspects of this piece and the mastery of these concepts will enable fluidity in performance and interpretation.

The overall dynamic of Part II ranges from very soft to mid-range. Mezzo piano and mezzo forte are predominant dynamics throughout this movement. The first time a loud dynamic is sustained for more than two notes is during the last ten measures of the piece. In the beginning of the score Stock indicates the following tempo marking, “Flexible tempo” with the quarter note = ca. 72. This shows Stock’s lack of concern with a strict perception of tempo. The interpretation of this movement should try to convey a calm feeling with expressive melodic lines throughout.

The initial indications in the digitalized version of the score lacks to provide important information about this movement. As we can see in the manuscript, the vibraphone motor was intended to be on throughout Part II. Since Stock passed away before we found this issue, I make this observation in hope that this issue gets fixed before its publication. (See Figure 56)

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Stock’s handwriting is known for being difficult to read, as admitted by the composer in the following email correspondence,

THANKS-I'll be in touch with Thomaz about corrections. He did a great job, but my writing is often hard to read.
Maybe once you get it worked up, you can make a scratch recording & send it to me?
All Best Wishes,
David48

MALLET CHOICE

The calm and expressive mood of this movement can be considerably affected by the mallet choice. In Part II, I recommend using soft mallets in order to intensify the contrast between this movement and Part I. As it is known to any experienced percussionist, one of the problems with using softer mallets is to make the notes speak in the higher octaves of the vibraphone. However, if we look at the register of this movement we can see that very rarely

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47 David Stock, Two-Part Invention, Manuscript

48 David Stock, e-mail message to the author, June 26, 2014
Stock goes beyond the C4. Therefore, it is appropriate to use four soft mallets throughout this movement.

**PLAYING AREA**

Similar to Part I, there are chords in Part II that requires the use of the edge of the bar. This happens more frequently in this movement than in Part I. Notice the many instances where both hands move in double vertical strokes. For example, mm. 11, mm. 16-18 and mm. 29-47. (See Figure 57)

![Figure 57: Two-Part Invention, Part II – m. 11, mm. 16-18 and mm. 29-47.](image)
Notice the hand motion in the last two eight notes of m. 39. (See figure 58)

Figure 58: m.39 – last two eighth notes in the center of the bars

Here, the right hand looks very uncomfortable when performing these two chords in the center of the bar. This happens because of how close these notes are to one another. Also, looking at the motion of mallets 3 and 4, one will notice that they switch in between natural and accidental bars. Mallet 3 goes from a Eb to a C and mallet 4 moves from a G to an Eb. Once again, performing in the edge of the bar avoids this unnecessary arm motion. (See Figure 59)
The playing area previously discussed will make the sticking choices of this movement considerably easier. The slow tempo makes it possible to perform most of the piece in the center of the bar. However, by doing so one can create a very complex sticking, considering how chromatic and “crunchy” some of these chords are. For example, the first chord in m.11 can be performed with the following sticking. (See Figure 60)

Figure 60, *Two-Part Invention, Part II* – m.11 – Sticking
However, stickings like this would not be possible for the three sections discussed in the Playing Area portion of this guide. If we organize the stickings based on prioritizing the center of the bars, the excessive arm motion can affect the phrasing.

There are two sections of this movement that are worth considering specific stickings. In m.13, there are three chords in far registers written in eighth notes. This slightly difficult passage can be simplified with the following sticking. (See Figure 61)

![Figure 61: Two-Part Invention, Part II, m.13 - sticking suggestion](image)

With this sticking, mallets 3 and 4 can stay in the pitches B and A respectively while the left-hand plays the leap with double vertical strokes. It also allows an easier transition on the large leap from the last eighth note to the half note.

Another section that could be simplified with an alternative sticking is mm. 14-15. Similar to m. 13, we can find a sticking that allows the right-hand to stay in two pitches while the left-hand moves in double vertical strokes. This also avoids interval changes in both hands. (See Figure 62)
ARTICULATION

The articulation of mm.26-28 should be carefully studied. Here we can find staccato eighth notes performed in mezzo piano, long notes in the same dynamic, three crescendo eighth notes with a slur, a mezzo forte long note, and pianissimo eighth notes with a slur. (See Figure 63)

It is important to distinguish every nuance as much as possible. For the staccato eighth note, the pedal should be up in order to create a very short and rhythmic sound. Next, the pedal should go down letting the dotted quarter note vibrate. Here, balance in the dynamic level is important since the note with the pedal down will resonate more than the staccato notes. The performer should adjust the dynamic level accordingly. Next, the pedal goes down on the B and up right after playing the C and E. Although this last eighth note will not vibrate as much as the previous
notes, this will assure that the sound stops before the half note. The last gesture should follow the same idea as the previous crescendo eighth notes with a slur, except softer to create an echo effect.

The gesture with a forte-piano crescendo in m. 46 presents some challenges. The music indicates one should start a roll with an accent moving drastically to piano and then crescendo to fortissimo. (See Figure 64)

![Figure 64: Two-Part Invention, Part II, m. 46 - articulation](image)

The conventional way of performing this gesture in a marimba or a xylophone would be to strike the first note and then start the roll before the resonance from the initial attack is over. Since the vibraphone can sustain notes, this technique would not apply here. I suggest to strike the chord with the pedal down, immediately dampen the bars with the pedal and then rapidly bring the pedal down again for the beginning of the roll. This will assure the gesture is articulated as intended by the composer.

**RANGE ISSUES**

The issues with range in Part II is not as extreme as in Part I. However, there are couple of sections in this movement with uncomfortable leaps. The pickup of m. 18 is the first example. Here, both hands move up the keyboard in double vertical strokes. The left-hand goes from F and Ab to D and E and the right-hand moves from a B and Db to F and A. (See figure 65)
Notice the highest pitch of the first chords is under the lower pitch of the second chord. The challenge here is to connect those two chords smoothly. It is important to practice the body motion of this section in order to consistently achieve accuracy. I like to place myself in mid-range of those two chords. As I play the first note, I move to my right preparing myself to strike the last chord.

This next section explores the extremes of the instrument. The transition from mm. 39-40 presents a leap that covers nearly all the range of the instrument. Although we have an eighth note rest in between these two chords, it is still difficult to be accurate considering the large leap. (See Figure 66)

Notice that the interval in both hands will change. The left-hand goes from a major second, G and A, to a minor second, F and Gb. The right-hand moves from a minor third, C and Eb, to a perfect fourth, Bb and Eb. For this section, I recommend the study of Gordon Stout’s Ideo-Kinetics. At the same time, the performer should apply the concept of position awareness and body preparation as previously mentioned.
CONCLUSION

David Stock was an accomplished composer who had devoted his life to promote new music. His compositions have been performed by some of the greatest orchestras worldwide. Stock has written many works for percussion instruments, including solos pieces, chamber works and three concerti. Although Stock was an extremely successful composer, his percussion music has not found its way into our standard repertoire. In my opinion, Two-Part Invention clearly belongs with the uppermost pieces written for vibraphone. Its form and musical expressivity can clearly compete with any other pieces written for this medium.

Two-Part Invention was written in 2014 and it is Stock’s only work for solo vibraphone. The title of the piece is not associated with the baroque style of music Two-Part Invention. Instead Stock humorously uses the literal meaning of the words two-part invention. The first movement is written based on three main rhythmical ideas. These are short gestures that are presented in different variations throughout this movement. In the second movement, many of the rhythmical motifs can be found in several compositions of his output. Throughout this movement, Stock transforms some of the motifs through augmentation and diminution. The harmonic content of the piece can be simply brought down to intervals of seconds and thirds. Trying to make sense of traditional methods of music theory in this work will fail to be consistent throughout.

Two-Part Invention presents numerous technical challenges. These challenges include playing area, stickings, articulation and range issues. By studying the concepts just mentioned as well as discussing tempo markings and mallet choice, a better understanding of this piece is revealed.
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Stock, David. Shadow Music for Harp and Percussion

APPENDIX 1: PEDALING SUGGESTIONS

Two-Part Invention
for solo vibraphone

Part I

Fast and lively (\textit{~} ca. 126)

\begin{music}
\begin{musicxml}
\end{musicxml}
\end{music}

David Stock
## APPENDIX 2: SELECTED LIST OF WORKS FOR PERCUSSION

<table>
<thead>
<tr>
<th><strong>TITLE</strong></th>
<th><strong>INSTRUMENTATION</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>4 for 4</td>
<td>Clarinet, Piano, Trumpet and Percussion</td>
</tr>
<tr>
<td>Breathless</td>
<td>Saxophone and Percussion</td>
</tr>
<tr>
<td>Circling the Square</td>
<td>Marimba and SATB Saxophone Quartet</td>
</tr>
<tr>
<td>Double Bars</td>
<td>Vibraphone and Marimba</td>
</tr>
<tr>
<td>Double Take</td>
<td>Solo Alto Saxophone, Solo Percussion and Wind Ensemble</td>
</tr>
<tr>
<td>Double Team</td>
<td>Bassoon and Percussion</td>
</tr>
<tr>
<td>Duo Dynamic</td>
<td>Violin and Percussion</td>
</tr>
<tr>
<td>Earth Beat</td>
<td>Solo Timpani and Wind Ensemble</td>
</tr>
<tr>
<td>Elegy for John</td>
<td>Timpani Solo</td>
</tr>
<tr>
<td>Flying Time</td>
<td>Percussion Quintet</td>
</tr>
<tr>
<td>Four Corners</td>
<td>Marimba Quartet</td>
</tr>
<tr>
<td>In G</td>
<td>Piano and Percussion Solo</td>
</tr>
<tr>
<td>In Still Air</td>
<td>Flute and Percussion</td>
</tr>
<tr>
<td>Into the Whirlwind</td>
<td>Cello, Flute, Vibraphone and Percussion</td>
</tr>
<tr>
<td>Keep the Change</td>
<td>Any Five Treble Clef Instruments</td>
</tr>
<tr>
<td>Little Star</td>
<td>Glockenspiel Solo</td>
</tr>
<tr>
<td>M’bonda na Mabinda</td>
<td>African Drums and Brass</td>
</tr>
<tr>
<td>Percussion Concerto</td>
<td>Percussion Solo and Orchestra</td>
</tr>
<tr>
<td>Red Stick Ripples</td>
<td>Marimba Solo</td>
</tr>
<tr>
<td>Rosewood Reflections</td>
<td>Marimba Solo</td>
</tr>
<tr>
<td>Shadow Music</td>
<td>Harp and Percussion Quintet</td>
</tr>
<tr>
<td>Sizzle</td>
<td>Solo Percussion and 8 Winds</td>
</tr>
<tr>
<td>Starlight</td>
<td>Clarinet and Percussion</td>
</tr>
<tr>
<td>Strike, Swinging</td>
<td>Percussion Solo</td>
</tr>
<tr>
<td>Three Vignettes</td>
<td>Marimba Solo</td>
</tr>
<tr>
<td>Triple Crown</td>
<td>Cello, Piano and Percussion</td>
</tr>
<tr>
<td>Two-Part Invention</td>
<td>Vibraphone Solo</td>
</tr>
<tr>
<td>U-Turn</td>
<td>Percussion Quartet</td>
</tr>
<tr>
<td>Varèsesation</td>
<td>13 Percussionists</td>
</tr>
</tbody>
</table>
APPENDIX 3: FORM

Two-Part Invention
for solo vibraphone

A
Fast and Lively (≈ ca. 126)

Part I

A1

B

C

David Stock
VITA

Gustavo Miranda (b.1988) completed his Masters in Music degree in percussion performance at Louisiana State University. At the same institution, he held a position of Graduate Assistant where he led the Brazilian Percussion Ensemble. He served as director of the Louisiana Youth Orchestra percussion ensemble as well as an instructor of the Performing Arts Academy at LSU. Miranda received his Bachelor of Music degree from the Universidade Federal da Paraiba-(UFPB/Brazil).

As an educator, Miranda has taught master-classes in Brazil, including the I Circuito Cultural Universitario Internacional. He has also taught clinics and master-classes in Panama, at the Universidade de Panama, at the Conservatorio de Musica de Panama as well as in the Fundacion Musical de Panama. As a soloist, Miranda has performed with the Louisiana State University Symphony as well as with professional orchestras in Brazil, including the Orquestra Sinfonica da Paraiba and Orquestra Sinfonica do Recife. In 2008, he performed as a soloist with the Rosauro’s camp percussion ensemble in Orlando, Florida.

As an Orchestral percussionist, he has started his career with the talented Youth Orchestra of his hometown, the Orquestra Sinfonica Jovem da Paraiba. After that, Gustavo has played in several orchestras in Brazil and the United States including the Orquestra Sinfonica da Paraiba, Orquestra Sinfonica Virtuosi, Louisiana Philharmonic Orchestra and Baton Rouge Symphony. As a chamber musician, he is a member of the Black Sheep Percussion among with percussionist Dr. Joe W. Moore III, Sam Trevathan and Tim Shuster. Miranda is also a member of the PercsounDuo with the versatile percussionist Imark Nascimento (BRA).