

AN EXAMINATION OF SELECTED WORKS FOR PERCUSSION; CONCERTO FOR
MARIMBA AND WIND ENSEMBLE BY DAVID GILLINGHAM, XL PLUS ONE BY
ALVIN ETLER, MARCH FROM EIGHT PIECES FOR FOUR TIMPANI BY ELLIOTT
CARTER, 42nd STREET RONDO BY WAYNE SIEGEL, OCEANUS BY STEVE
HOUGHTON AND WENDELL YUPONCE

by

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Abstract

This is a report intended for musicians planning to perform any number of, or scholars seeking to enrich understanding of, the following compositions: Concerto for Marimba and Wind Ensemble by David Gillingham, XL Plus One by Alvin Etler, March from Eight Pieces for Four Timpani by Elliott Carter, 42nd Street Rondo by Wayne Siegel, and Oceanus by Steve Houghton and Wendell Yuponce.

Each work is analyzed in accordance with Jan Larue's method of style analysis. For some compositions, analysis of harmony has been omitted. For all compositions, the author has added a pedagogical realm of analysis, dedicated to notable performance considerations, interpretive possibilities, and technical considerations, to Larue's organizational scheme. Therefore, the approach taken in this document can be expressed as: Sound, Harmony, Melody, Rhythm, Growth, and Performance.

Table of Contents

List of Figures	vi
List of Tables	viii
Dedication	ix
Preface.....	x
CHAPTER 1 - Concerto for Marimba and Wind Ensemble.....	1
Biographical Information on the Composer	1
Theoretical Analysis	2
Sound	2
Harmony	5
Melody	8
Rhythm.....	9
Growth	12
Performance	13
CHAPTER 2 - XL Plus One	15
Biographical Information on the Composer	15
Theoretical Analysis	16
Sound	16
Harmony	17
Melody	18
Rhythm.....	19
Growth	20
Performance	21
CHAPTER 3 - March from Eight Pieces for Four Timpani	22
Biographical Information on the Composer	22
Theoretical Analysis	23
Sound	24
Timbre.....	24
Texture	25

Dynamics	26
Harmony	27
Melody	28
Rhythm.....	28
Growth	30
Performance	31
CHAPTER 4 - 42 nd Street Rondo	32
Biographical Information on the Composer	32
Theoretical Analysis	33
Sound	33
Melody	33
Rhythm.....	35
Growth	36
Performance	37
CHAPTER 5 - Oceanus	38
Biographical Information on the Composers.....	38
Steve Houghton.....	38
Wendell Yuponce.....	39
Theoretical Analysis	40
Sound	41
Timbre.....	41
Texture	42
Harmony	43
Melody	44
Rhythm.....	45
Performance	48
Sources Consulted.....	49

List of Figures

Figure 1.1 – Mvt. I, mm. 127-131: Warm Brass Chorale.....	3
Figure 1.2 – Mvt. I, mm. 127-131: Scoring in Layers	4
Figure 1.3 – Mvt. I, mm. 29-33: Enharmonic Spelling of Dominant Ninth to Tonic.....	6
Figure 1.4 – Mvt. III mm. 37-38: Minor-Major Seventh.....	6
Figure 1.5 – Mvt. II, mm. 1-13: Chaconne	7
Figure 1.6 – Mvt. I, mm. 20-43: Theme One.....	8
Figure 1.7 – Mvt. II, mm. 29-32: Nexus Motive	9
Figure 1.8 – Mvt. III, mm. 230-236: Intervallic Compression	9
Figure 1.9 – Mvt. III, mm. 1-20: Theme One	10
Figure 1.10 – Mvt. I, mm. 212-215: Rhythmic Augmentation of Theme One.....	11
Figure 2.1 – Forty-One Instruments in Three Groups	16
Figure 2.2 – Rhythmic Figures Accompanied by Rolls.....	17
Figure 2.3 – Tone Clusters on Vibraphone (0,3,4 – 0,2,3,5 – 0,1,2 – 0,1,2,3 – 0,1,2,3,4)	18
Figure 2.4 – Relative Pitch Creates Melodic Contour	18
Figure 2.5 – Ascending Melodic Contour Builds Tension Followed by Release.....	19
Figure 2.6 – Metered Accelerando and Subsequent Metered Decelerando	20
Figure 2.7 – The Author’s Instrument Setup: Stage Right	21
Figure 2.8 – The Author’s Instrument Setup: Stage Left.....	21
Figure 3.1 – mm. 22-25: Flipping the Mallets	24
Figure 3.2 – mm. 1-2: Notation of Right Hand Head/Left Hand Butt.....	25
Figure 3.3 – mm. 69-71: Muting the Timpani	25
Figure 3.4 – mm. 66-68: Homophonic Texture, Right Hand Melody/Left Hand March	25
Figure 3.5 – mm. 43-45: Textural Dissonance	26
Figure 3.6 – mm. 33-34: Meticulous Dynamic Indications	26
Figure 3.7 – mm. 7-8: Independent Dynamic for Hands	27
Figure 3.8 – mm. 80-81: Cadential Implication.....	27
Figure 3.9 – m. 3: Flourish.....	28

Figure 3.10 – mm. 39-45: 3/8 Meter and Metric Modulation Mask New Tempo	29
Figure 3.11 – mm. 5-6: Four in Melody/Three in Accompaniment	30
Figure 3.12 – mm. 79-81: Entire Codetta	31
Figure 4.1 – m. 21	34
Figure 4.2 – m. 21: Cowbell Melody	34
Figure 4.3 – m. 21: Tom Melody	35
Figure 4.4 – m. 21: Bongo Melody	35
Figure 4.5 – m. 33: Polyrhythm	36
Figure 5.1 – m. 27: Drumset Entrance	42
Figure 5.2 – m. 33: Figures Begin	42
Figure 5.3 – mm. 104-127: Modal Cycles	44
Figure 5.4 – mm. 148-157: Typical Melodic Style	45
Figure 5.5 – mm. 60-61: Rhythmic Displacement and Syncopation	45
Figure 5.6 – mm. 80-81: Eighth-Note Based Hemiola	46
Figure 5.7 – mm. 214-215: Sixteenth-Note Based Hemiola	46
Figure 5.8 – mm. 158-186: Snare Drum Motive and Subsequent Embellishments	47
Figure 5.9 – m. 129: Eighth Notes in Groups of Four	48
Figure 5.10 – mm. 137-138: Diminution of Eighths to Sixteenths	48

List of Tables

Table 1.1 – Formal Diagram of Mvt. I.....	12
Table 1.2 – Formal Diagram of Mvt. II	13
Table 1.3 – Formal Diagram of Mvt. III.....	14
Table 3.1 – Textural Outline of the Work.....	26
Table 3.2 – All Instances of Metric Modulation.....	29

Dedication

This report is dedicated to my family, Marvin, Rhonda, and Kurt Whitman, and to my teachers, Mr. Scott Plank, Mr. Ron Keezer, Mr. Robert Baca, Dr. Jeffery Crowell, Mr. Dave King, Mr. Joe Morello, Dr. Kurt Gartner, and Dr. Frank Tracz.

Preface

In instances where pitch range is discussed, the document follows the Helmholtz system of pitch identification. The reader must be familiar with this system to fully grasp the analysis. This document was prepared as an accompaniment to a percussion recital presented by the author on March 31, 2008.

CHAPTER 1 - Concerto for Marimba and Wind Ensemble

Biographical Information on the Composer

David Gillingham was born in 1947 in Waukesha, Wisconsin.^{1,2} He grew up on a farm situated near Rosendale, Wisconsin. When he was sixteen, his family relocated to a home in town. Gillingham's aunt was an organist, and he recalls that his family would sit around a pump organ and sing as she played hymns.³ As a boy on the farm, Gillingham had his first piano lessons, and he recalls spending a great deal of time improvising at the keyboard. Nonetheless, Gillingham admits to having "never thought that would be a career."⁴ Gillingham only aspired to be a music educator.

During his high school years, Gillingham began playing euphonium with his school band. After graduating from high school, he attended the University of Wisconsin at Oshkosh as a Music Education major. He graduated with a B.M.E. in 1969 and decided to enlist, since he knew he would be drafted. He was accepted into the 5th Army Band, and eventually ended up in the 266th.⁵ Gillingham says, "I really got into composition, and also played organ over there [in Vietnam]. On Sunday mornings I played at three different chapels."⁶ In 1971 Gillingham was discharged and returned to Oshkosh to enroll as a master's student in Music Education. He attended for a short while, but dropped out to begin a four-year stint as a middle school band director. After four years he returned to UW-Oshkosh, and received his Master of Music

¹ David Gillingham gilli1dr@cmich.edu, RE: Wisconsin/Marimba Concerto [Email to David Whitman whitman@ksu.edu], 22 February 2008.

² It should be noted, that Bradley incorrectly identifies Gillingham's city of birth as Eau Claire, WI in his 2000 Ph.D. dissertation.

³ David Gillingham, "Composer Spotlight: David Gillingham pt. 1," Podcast by C-Alan Publications., Interview by Nathan Daughtry, <<http://www.c-alanpublications.com/podcasts/gillingham-interview1.mp3>> (accessed February 2, 2008).

⁴ Ibid.

⁵ Ibid.

⁶ Raydell Cecil Bradley, "A Study of the Use of Programmatic and Liturgical Themes in Selected Wind Ensemble Compositions of David Gillingham," (D.M.A. diss., University of Washington, 2000), 8.

Education degree in 1977. He immediately pursued a Ph.D. in Composition from Michigan State University, which he completed in 1980.

Gillingham studied composition with Roger Dennis, Jere Hutcheson, James Niblock, and H. Owen Reed.⁷ Gillingham writes that he “grew up in a Methodist tradition, but was an active church organist in several Presbyterian and Methodist churches.”⁸ Liturgical music and strong ties to the church have been fixtures in his life and are reflected in his music. In addition to the marimba, he has written concerti for clarinet, alto saxophone, trumpet, bass trombone, euphonium, brass quintet, woodwind quintet, and piano.⁹

Theoretical Analysis

The following is a theoretical analysis of Gillingham’s *Concerto for Marimba and Wind Ensemble*, which was commissioned by a consortium of schools and performers headed by Professor Marc Wooldridge of Northwestern College in Orange City, Iowa.¹⁰ The work was completed in 2006, and underwent minor revisions prior to publication on January 1, 2008. The premiere performance of *Concerto for Marimba and Wind Ensemble* occurred on November 10 2006.¹¹

Sound

In *Concerto for Marimba and Wind Ensemble*, Gillingham employs heavy use of layering in the ensemble. Gillingham has identified this as a typical characteristic of his approach to scoring for wind band, analogous to an organist who pulls stops at the keyboard.¹² His organ-like

⁷ Salzman, Timothy, ed., *David Gillingham*, vol 1, *A Composer’s Insight: Thoughts, Analysis and Commentary on Contemporary Masterpieces for Wind Band*, by Raydell Bradley and J. Bradley McDasvid (Galesville, MD: Meredith Music Publications, 2003), 47.

⁸ David Gillingham, RE: Wisconsin/Marimba Concerto, 22 February 2008.

⁹ David Gillingham, “Composer Spotlight: David Gillingham pt. 2,” Podcast by C-Alan Publications., Interview by Nathan Daughtry, <<http://www.c-alanpublications.com/podcasts/gillingham-interview1.mp3>> (accessed February 2, 2008).

¹⁰ David Gillingham, *Concerto for Marimba and Wind Ensemble*, (Greensboro, NC: C. Alan Publications, 2008), i.

¹¹ Marc Wooldridge, “IWU Music Faculty,” <<http://cas.indwes.edu/academic-divisions/Music/faculty/wooldridge.htm>> (accessed April 4, 2008).

¹² David Gillingham, “Composer Spotlight: David Gillingham pt. 1.”

treatment of the ensemble results from his experiences as a church organist, as well as his early experiences with the instrument in his home. An example of layering occurs in measures 45-49 of the first movement, shown in figure 1.2. In this instance, the ensemble is separated into five distinct layers. Flutes provide rhythmic accompaniment, muted trumpet provides melody, low brass instruments provide harmonic and textural foundation, piano provides color through cascading contrary motion and distinct timbre, and solo marimba accompanies the melody with rhythmic arpeggiation.

Frequently, Gillingham writes chorale-style passages for the low brass instruments.¹³ These passages create warm homophonic textures, and demonstrate the influence of hymns on his music. Measures 127-131 illustrate this tendency (figure 1.1). Here, the entire brass section provides the chorale, while percussion and piano provide color and ambiance.

Figure 1.1 – Mvt. I, mm. 127-131: Warm Brass Chorale

The image displays a musical score for measures 127-131. The top section contains the brass instruments: three trumpets (labeled '1st Tpt.', '2nd Tpt.', '3rd Tpt.'), three horns (labeled 'Hn. 1st', 'Hn. 2nd', 'Hn. 3rd'), three trombones (labeled 'Tbn. 1', 'Tbn. 2', '3rd Tbn.'), an euphonium ('Euph.'), and a tuba ('Tuba'). The bottom section contains percussion: Solo Marimba ('Solo Mba.'), Piano ('Pno.'), and Percussion 1 ('Perc. 1'). The score is in 3/4 time and features a warm brass chorale texture. The brass instruments play a homophonic, chordal passage. The piano part features cascading contrary motion, and the percussion provides color and ambiance. The measure numbers 127 and 131 are circled at the beginning of their respective staves.

¹³ Ibid.

Figure 1.2 – Mvt. I, mm. 127-131: Scoring in Layers

6

Concerto for Marimba and Wind Ensemble-Mvt. I

The image displays a musical score for the first movement of a concerto, specifically measures 127 through 131. The score is organized into three distinct layers of instrumentation, each beginning at measure 45. The top layer features a Percussion part (Perc.) and two Marimba parts (Cb. 1 & 2, Bm. 1 & 2). The middle layer includes three Trumpet parts (Bb Trpt. 1, 2, 3), three Horn parts (Hr. 1 & 2, Hr. 3 & 4), three Trombone parts (Tbn. 1, 2, B. Tbn.), an Euphonium (Euph.), and a Tuba (Tuba). The bottom layer consists of a Solo Marimba (Solo Mar.) and a Piano (Pno). The score is written in 2/2 time and includes various musical notations such as notes, rests, and dynamic markings like *mf*. A large number '45' is placed at the beginning of each layer to indicate the start of the section. The Percussion part has a large '2' above it, and the Solo Marimba part has a large '5' above it.

Gillingham utilizes idiomatic devices to provide variety and nuance to the composition. Both straight and cup mutes are specified for brass. In the first movement, stopped horns provide the soloist with a colorful rhythmic accompaniment (beginning at measure 141). During the second movement, he calls for the use of dead-strokes (strokes in which the mallets remain on the bar after contact) and two bass bows in the solo marimba part, which also employs soft, medium soft, medium hard, and hard mallets at various points in the work.

Also, Gillingham creates color and affect through his writing for the ensemble percussionists. Gillingham says, “I’m really drawn to the percussion sound [*recte* sounds] for colors and affect, and it seems to be a frontier that isn’t closed. It [the frontier of percussion] continues to expand every single day . . . I think it blends so well, and it’s a life-saver in the band.”¹⁴ Suspended cymbal rolls provide brightness of timbre, brake drums from automobiles provide unique metallic sounds, and membranophones create dark accompaniment and bombastic emphasis. The blending of percussion and ensemble to which Gillingham refers is achieved throughout the work.

Harmony

The three movements of *Concerto for Marimba and Wind Ensemble* are in G Minor, B-flat Minor, and D Minor, respectively. Frequent chromatic harmony is used to add color and tension. Figure 1.3 (showing piano reduction and solo marimba) shows the opening phrase of theme one concluding with a half cadence on a V^9 . The third of the chord is enharmonically spelled as a G flat rather than an F sharp and suggests polychord, a device to which Gillingham is attracted.¹⁵

Additionally, Gillingham utilizes the minor-major seventh chord extensively. Figure 1.4 shows this chord in use during the exposition of the third movement.

¹⁴ Ibid.

¹⁵ Salzman, 48

Figure 1.3 – Mvt. I, mm. 29-33: Enharmonic Spelling of Dominant Ninth to Tonic



Figure 1.4 – Mvt. III mm. 37-38: Minor-Major Seventh



Much of the harmonic motion in the first and second movements is based upon the chromatic-median relationship. The first significant use of this relationship is introduced in the second theme of movement one, measures 45-49 (figure 1.2). Here, the first four chords (G Minor, B-flat Minor, D Minor, and F Minor) demonstrate the relationship, which occurs throughout the first and third movements as the theme is developed and recycled (the third movement reworks earlier themes). Furthermore, the relationship is utilized extensively to facilitate modulation during developmental sections and to generate harmonic interest in transitions.

Movement two is a chaconne; therefore a single harmonic progression is utilized throughout. This progression is shown in figure 1.5, as it is introduced as a chorale by the solo marimba.

Figure 1.5 – Mvt. II, mm. 1-13: Chaconne

II.

Chaconne ♩ = 56

In the chaconne progression, the second measure is a sequential reiteration of the first. A direct modulation to D-flat Major and imperfect authentic cadence follows. The consequent phrase modulates back to B-flat Minor. Although it has been analyzed as a direct modulation in figure 1.5, it is possible that the listener may perceive either the E-flat Minor chord or the C-flat Major chord as pivot chords. Both chords are subdominant in function. Here the Neapolitan is in the atypical root position. The phrase includes an eighteenth-century style perfect authentic cadence, a diminution of harmonic rhythm, and a second-inversion B-flat Minor chord.

Melody

Three melodies are manipulated in this composition, which requires a five-octave marimba to perform. The first theme from the first movement is disjointed, angular, and motivic. It is presented in its entirety in figure 1.6.

Figure 1.6 – Mvt. I, mm. 20-43: Theme One

20 Quick with restlessness $\text{♩} = 132$

26

31 ff f 33

37 ff

The musical score for Theme One consists of four systems of music, each with a treble and bass staff. The first system (measures 20-25) begins with a tempo marking of 'Quick with restlessness' and a metronome marking of 132. The second system (measures 26-30) features a dynamic marking of f and includes an 8va octave sign. The third system (measures 31-36) starts with a dynamic marking of ff and includes a boxed measure number '33'. The fourth system (measures 37-43) also features a dynamic marking of ff . The score is written in a key signature of two flats and a 2/4 time signature.

The initial motive (subsequently referred to as the “nexus motive”) can be seen in measure 22. Here, the primary triad is spelled in second inversion, and is followed by the leading tone, tonic, mediant, and supertonic in sequence. Gillingham utilizes the nexus motive throughout the concerto. In the case of major harmony, subdominant and mediant replace mediant and supertonic as the final two pitches. Figure 1.7 presents the nexus motive superimposed over the chaconne in the second movement.

Figure 1.7 – Mvt. II, mm. 29-32: Nexus Motive

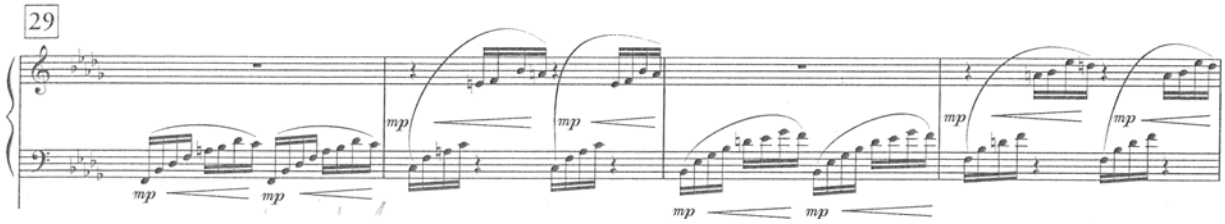


Figure 1.8 shows the original motive and subsequent manipulation through intervallic compression during the marimba cadenza in the third movement.

Figure 1.8 – Mvt. III, mm. 230-236: Intervallic Compression



The second primary melody is introduced as the second theme in the first movement, and can be seen in figure 1.2 (muted trumpet). The chorale-style statement of the chaconne in movement two is a manipulation of this melody. The melody is also present in the cadenza-like marimba introduction to the first movement and the marimba cadenza in the third movement.

The third melody is introduced as the first theme in movement three. It is shown in figure 1.9, and is presented in D Minor. More flowing than the theme one from the first movement, it is characterized by triadic material that quickly descends through much of the range of the marimba. Additionally, this melody is the only source of new material in the third movement, which is cyclic, incorporating thematic material from the earlier movements.

Rhythm

Although *Concerto for Marimba and Wind Ensemble* is representative of Gillingham's hymn style of composition and organ style of scoring, there is a great deal of rhythmic activity in the piece. During the first movement, the soloist performs eighth notes with one hand and half-note triplets in the other, creating a polyrhythm of eight against three. Instances of triple-based rhythms in the piano and duple-based rhythms in the ensemble present a more fundamental

polyrhythm as well. While the ensemble rhythms consist of mainly whole, half, quarter, and eighth notes, rhythmic subtleties such as these emphasize Gillingham’s ability to maintain rhythmic interest. Nonetheless, Gillingham insists that rhythm consistently poses a challenge for him.^{16,17}

Figure 1.9 – Mvt. III, mm. 1-20: Theme One

Very fast $\text{♩} = 152$ & lively

The musical score consists of five systems of piano notation. The first system (measures 1-5) starts in 4/4 time with a forte dynamic. The second system (measures 6-9) continues in 4/4. The third system (measures 10-12) changes to 3/4 time. The fourth system (measures 13-15) changes to 2/4 time. The fifth system (measures 16-19) returns to 3/4 time. The score is characterized by intricate rhythmic patterns, including polyrhythms and complex phrasings, with various articulations and dynamic markings throughout.

¹⁶ David Gillingham, “Composer Spotlight: David Gillingham pt. 1.”

¹⁷ Gillingham somewhat contradicts himself, claiming to have learned rhythmic inventiveness from H. Owen Reed (Salzman, 48).

Figure 1.10 – Mvt. I, mm. 212-215: Rhythmic Augmentation of Theme One

The image displays a musical score for measures 212-215, illustrating rhythmic augmentation of Theme One. The score is divided into two systems. The first system includes parts for Flute 1, Flute 2, Clarinet in B-flat 1 & 2, Bassoon 1 & 2, Trumpet 1, Trumpet 2, Trumpet 3, Horn in F 1 & 2, Trombone 1, Trombone 2, Trombone 3, Euphonium, Tuba, and Cymbals. The second system includes parts for Trombone 1, Trombone 2, Trombone 3, Horn in F 1 & 2, Trombone 1, Trombone 2, Trombone 3, Euphonium, Tuba, and Cymbals. The score features a 5/4 time signature at the beginning of measure 212, which changes to 4/4 for measures 213 and 214, and returns to 5/4 for measure 215. The music is characterized by layered scoring, with various instruments playing different rhythmic patterns that augment the main theme. Dynamics such as *ff* and *f* are indicated throughout the score.

Another rhythmic subtlety occurs at measure 212 (figure 1.10) in movement one. Here, Gillingham writes an augmented iteration of theme one for the ensemble in another clear instance of layered scoring.

Growth

The concerto is written in the standard three-movement form of fast-slow-fast. The first and third movements are in sonata-rondo form, and the second is a chaconne with eight variations. Table 1.1 presents a formal diagram of the first movement, Table 1.2 presents a formal diagram of the second movement, and Table 1.3 presents a formal diagram of the third movement.

Table 1.1 – Formal Diagram of Mvt. I

Measures	Macro Form	Micro Form	Key Area
1-19	Slow Introduction		G Minor
20-44	Exposition	Theme One	G Minor
45-51	Exposition	Transition	G Minor
52-59	Exposition	Theme Two	G Minor
60-66	Exposition	Transition	G Minor
67-86	Exposition	Theme One	G Minor
87-104	Development		G Minor
105-110	Development		F Major and Minor
111-132	Development		B-flat Minor
133-150	Development		F-sharp Minor
151-162	Development	Retransition	D Major
163-187	Recapitulation	Theme One	G Minor
188-199	Recapitulation	Theme Two	E Major
200-211	Recapitulation	Transition	To G Minor
212-233	Recapitulation	Theme One	G Minor
234-245	Coda		G Major

Table 1.2 – Formal Diagram of Mvt. II

Measures	Section	Method
1-2	Timpani Introduction	Timpani Pulsation
3-10	Chaconne in Original Form	Marimba Chorale
11-18	Variation I	Low Brass
19-28	Variation II	Oboe, Horns, Marimba
29-36	Variation III	Cascading Woodwinds
37-44	Variation IV	Cascading Brass
45-80	Variation V	Virtuosic Marimba
81-84	Transition	Piano
85-97	Variation VI	Arco Marimba
98-105	Variation VII	Brass
108-118	Variation VIII	Arpeggiated Marimba, Alto
119-127	Coda	Somber Marimba

Performance

This work, as with many concerti, places significant technical demands on the soloist. Quick and expansive arpeggiated figures require the performer to carefully consider all sticking possibilities. The many chorale style sections require a great deal of expression and finesse in order to affect the listener as Gillingham intended. Even the most experienced marimbist may need to review his or her approach to playing groups of three notes and groups of eight notes in the same space of time. While playing such a complicated figure in performance, the performer must be clear in his or her presentation, lest they create confusion or hesitation in the ensemble.

Table 1.3 – Formal Diagram of Mvt. III

Measures	Macro Form	Micro Form	Key Area
1-19	Exposition	Theme One	D Minor
19-31	Exposition	Theme Two	D Minor
32-35	Exposition	Transition	D Minor
36-52	Exposition	Theme One	D Minor
53-61	Development		D Minor
62-84	Development		F-sharp Minor
85-98	Development		G Major
99-106	Development		D Minor
107-116	Development		Modulatory
117-124	Development		D Minor
125-140	Development		Modulatory
141-162	Development		Modulatory
163-164	Development	Retransition	A Major
165-180	Recapitulation	Theme One	D Minor
181-195	Recapitulation	Theme Two	D Minor
196-204	Recapitulation	Dominant Preparation	D Minor
206-236	Recapitulation	Cadenza	D Minor
237-258	Coda		D Minor/D Major

CHAPTER 2 - XL Plus One

Biographical Information on the Composer

Alvin Derald Etler was born in Battle Creek, Iowa on February 11, 1913. Hoxie writes, “By the time he [Alvin Etler] graduated from high school, he had already written a number of compositions, including a suite for wind quintet. This work was performed in New York by . . . a prominent group at the time, through the influence of Percy Grainger.”¹⁸ After high school, Etler attended Case Western Reserve University in Cleveland, Ohio, where he studied composition with Arthur Shepherd from 1931-1936.

Etler performed as an oboist with the Indianapolis Symphony Orchestra for two seasons (1938-1940) and subsequently toured as oboist and composer with the American Wind Quintet. Consecutive Guggenheim Fellowships in 1940 and 1941 mark a transitional period in Etler’s career, where composition and teaching become his primary emphasis.¹⁹ From 1942-1946 Etler taught wind instruments and conducted the University Band at Yale. During his first two years there, he studied composition with Paul Hindemith.²⁰ He also taught briefly at Cornell University and the University of Illinois, before taking a position at Smith College in Northampton, Massachusetts. He remained in Massachusetts until he died of pneumonia on June 13, 1973.²¹

Since 1940, Etler has received considerable recognition for his works, and Boatwright considers him to be one of the “best known” students of Hindemith.²² Etler received a total of three Guggenheim Fellowships, the third being awarded in 1963. His compositional style began somewhat conservatively, but increasingly utilized twentieth-century techniques as he matured.²³

¹⁸ David Jonathan Hoxie, “Music for Viola and Harpsichord Written After 1945 by American Composers: A Lecture Recital,” (D.M.A. research paper, Arizona State University, 1997) 29.

¹⁹ Michael Mechna, Kurt Stone, Nicolas Slonimsky, ed., “Etler, Alvin (Derald),” *Baker’s Biographical Dictionary of Musicians*, Vol. 2 (New York: Schirmer Books, 2001) 408.

²⁰ Howard Boatwright, “Paul Hindemith as a Teacher,” *The Musical Quarterly*, 50 no. 3 (1964): 279-289.

²¹ Paul M. Sheldon, “A Look at the Career of a Significant Twentieth-Century Composer of Music for Wind Instruments,” *Woodwind World-Brass & Percussion*, 18 no. 6 (1979): 10.

²² Howard Boatwright, 287.

²³ Paul M. Sheldon, 9.

Theoretical Analysis

The following is a theoretical analysis of *XL Plus One*, by Alvin Etler. The National Association of College Wind and Percussion Instructors commissioned *XL Plus One* in 1969, and the work was published in 1970. The terms of the commission were a multiple percussion solo of approximately ten minutes in length.²⁴ It is one of the last works Etler composed prior to his death in 1973, and possesses many of the twentieth-century characteristics that exemplify his mature stage of compositional output.

Sound

Composed for forty-one percussion instruments, *XL Plus One* provides a great deal of variety in timbre, even for a multiple percussion solo. Timbre is the primary organizational element utilized in the piece, with instruments being divided into categories of skin, wood, and metal. A complete listing of instruments by category, excerpted from the score, is shown in figure 2.1.

Figure 2.1 – Forty-One Instruments in Three Groups

INSTRUMENTS		
<u>Skin</u>	<u>Wood</u>	<u>Metal</u>
Indian Drum (large)	Temple Blocks (5)	Tam Tam (large)
Snare Drum	Wood Blocks (4)	Suspended Cymbals (4)
Tom Toms (3)	Guiro	Crash Cymbal
Tunable Tom Toms (4) } Pitch Graded	Xylophone	Brake Drums (3)
Bongos (4) Pitch Graded		Triangles (3)
Tympani		Antique Cymbals (1 pr. any pitch)
		Vibraphone

Throughout much of the piece the focus is on a single timbral group. The work occasionally calls for the performer to utilize instruments from different timbral groups in quick succession, although these instances usually function as transitions. Etler exercises further control over timbre by specifying the use of hard mallets, sticks, soft mallets, a small triangle beater, rubber-covered mallets, and medium-hard timpani mallets.

²⁴ Randall E. Faust, "Composer Profile: Alvin Etler," *NACWPI Journal*, 42 no. 1 (1989): 33.

Etler creates textural contrast by notating the simultaneous execution of rolls and rhythmic figures. Figure 2.2 shows an instance of this in which the temple blocks (upper) are accompanied by rolls on the xylophone (lower).

Figure 2.2 – Rhythmic Figures Accompanied by Rolls



The xylophone creates a sense of polytexture. The rhythmic consistency affected by the continuous rolling technique functions as accompaniment to the temple blocks (heterophony), while the rhythm of the ascending pitches has a contrapuntal function (polyphony). The ability for the xylophone to simultaneously affect both dense and sparse rhythm is an idiosyncrasy of the instrument. In exploiting this, Etler reveals his compositional skill and depth of knowledge. The majority of the work, however, is monophonic, and dominated by a linear compositional approach.

Harmony

The majority of the piece employs instruments of indefinite pitch. The two exceptions to this are the xylophone and vibraphone. The xylophone portion of the work utilizes a twelve-tone style of composition in which groups of two tone rows are separated by transitions utilizing instruments of indefinite pitch. The twelve-tone technique is not strict, as each row contains only eleven pitches.

The vibraphone portion of the work contains a series of tone clusters. Etler asks the performer to permanently depress the pedal, which results in the clusters sounding together. Octave transposition is utilized to mask the tone clusters and provide melodic contour. A few of the clusters are shown in figure 2.3. Pitch-set class analysis reveals extremely weak relationships

between the clusters (they occasionally contain a single whole-step, and so are not all 0,1,2 etc.), suggesting that Etlar was primarily concerned with color, dissonance, and tension.

Figure 2.3 – Tone Clusters on Vibraphone (0,3,4 – 0,2,3,5 – 0,1,2 – 0,1,2,3 – 0,1,2,3,4)



Melody

Extreme contrast in timbre and relative pitch between the low range of the skin instruments and the high range of the wood instruments creates interesting melodic contour. Figure 2.4 shows an example of wave-form rising and falling and the use of stepwise motion combined with ascending and descending leaps.

Figure 2.4 – Relative Pitch Creates Melodic Contour



The chromatic tone clusters created in the vibraphone section of the work seen in figure 2.3 generate a great deal of melodic interest through contour as well. The twelve-tone style xylophone passages generate tension as they slowly ascend. This tension is subsequently released in quick descending skin transitions, as shown in figure 2.5.

Figure 2.5 – Ascending Melodic Contour Builds Tension Followed by Release

The image shows a musical score for two percussion parts: Wood and Skin. The Wood part is written on a treble clef staff and features a melodic line that starts with a series of eighth notes, followed by a group of twelve sixteenth notes, and then a group of nine sixteenth notes. The Skin part is written on a bass clef staff and provides a rhythmic accompaniment. The score includes dynamic markings such as *cresc.* and *f*, and a tempo marking of *XL Plus One*. The overall contour of the melodic line is ascending, building tension, and then releasing it.

Rhythm

The rhythm in *XL Plus One* is predominantly duple in nature, with the sixteenth note being the primary note value utilized. Both meter and measure are absent in the work, and the tempo is slow throughout. Aside from a few instances of free pulse, fermata, ritardando, or accelerando, the quarter note is either equal to sixty or forty beats per minute.

Painter, in his Ph.D. dissertation, identifies the thoughtful development of a rhythmic motive.²⁵ Etlar creates excitement and tension through metered accelerando, shown in figure 2.6. In this instance the metered accelerando is followed by a subsequent metered decelerando. This creates a rhythmic contour that parallels the melodic contour shown in figure 2.5.

Figure 2.5 also illustrates a fine example of rhythmic stress stemming from fluctuations in melodic contour. In the thirty-second notes of the example, the eighth-note sense is strengthened as the line abruptly rises and falls. The same phenomenon, moments later in the groups of twelve and nine sixteenth notes, masks the true pulse as contour works against the pulse that has been established in the thirty-second notes.

²⁵ Noel Thomas Painter, "Exploring Contour Associations Through Transformation Networks: Identification and Classification of Contour Relations in Modern Multiple Percussion Music," (Ph.D. diss., University of Rochester, 2000) 196.

Figure 2.6 – Metered Accelerando and Subsequent Metered Decelerando

The figure displays three systems of musical notation for a percussion ensemble, divided into Wood and Skin sections.

- System 1:** Features a Wood part with a triplet of eighth notes and a Skin part with a complex rhythmic pattern. The Skin part begins with a dynamic marking of *f* (forte), followed by *p* (piano), and then a *Cresc. poco a poco* (Crescendo poco a poco) instruction. The Skin part includes fingerings 5, 6, 7 and hand designations R (Right) and L (Left).
- System 2:** Shows the Wood part with a melodic line and the Skin part with a dense, multi-layered rhythmic texture. The Skin part includes fingerings 9, 11, 13 and hand designations L and R. A dynamic marking of *ff* (fortissimo) is present.
- System 3:** Features the Wood part with a melodic line and the Skin part with a rhythmic pattern. The Skin part includes fingerings 12, 9, 3 and a *decresc. poco-a-* (Decrescendo poco a poco) instruction. A triplet of eighth notes is marked with a '3' above it.

Growth

The primary organizational element of the work is timbre. The piece begins in the skin area with a long roll on the snare drum that exhibits great dynamic contrast. This snare drum roll leads into the notated accelerando shown in figure 2.6. Xylophone, vibraphone, and timpani sections follow. The timpani, paired with suspended cymbals, provide the closing material. In a formal capacity, the timpani do not function in conjunction with the skin instruments. Following this section is a short codetta, featuring the return of the snare roll. Each large section is connected by transitory material, in which multiple timbral areas are explored.

Performance

XL Plus One is a massive undertaking for the performer, in that a great deal of time and energy must be spent situating the instruments efficiently. Since the instruments create a ring around the performer, music must be placed in various locations among the instruments. Stick and mallet switches must be well rehearsed, and all body movements should reflect the musical context in which they occur.

Figure 2.7 – The Author’s Instrument Setup: Stage Right



Figure 2.8 – The Author’s Instrument Setup: Stage Left



CHAPTER 3 - March from Eight Pieces for Four Timpani

Biographical Information on the Composer

Elliott Cook Carter Jr. was born in New York City on December 11, 1908. Eli Carter, Elliott's paternal grandfather, started a lace importing business after the civil war and subsequently left the company in the control of Elliott's father. Consequently, Elliott was born into wealth, and enjoyed a quality education. *The Musical Quarterly* critic Richard Goldman wrote in 1957 that Carter, "is one of the few musicians, indeed one of the few persons of our time, who may still, in the Jacques Barzun's sense of the phrase, be called an educated man."²⁶

As a child Carter attended the Horace Mann School, a private college preparatory school that was an experimental extension of Columbia University. Although Carter took piano lessons in his youth, he did not enjoy them.²⁷ Instead, Clifton Furnace, a teacher at Horace Mann, deserves much of the credit for cultivating young Carter's interest in music through trips to contemporary music concerts. Furness introduced Carter to Charles Ives, who encouraged Carter to pursue a career in music. During these years at Horace Mann (1920-1926), Carter and Ives engaged in many discussions about music. When Carter graduated from Horace Mann, Ives wrote Harvard a recommendation letter on Carter's behalf.²⁸

Carter was accepted to Harvard, where he studied English Literature, receiving his bachelor's degree in 1930. He remained at Harvard to pursue graduate studies in Music, much to the chagrin of his parents, who wanted him to enter the family business. At that time he studied harmony and counterpoint with Walter Piston, and composition with Gustav Holst. On recommendation from Walter Piston, Carter relocated to Paris to study composition with Nadia Boulanger at Ecole Normale de Musique following his second graduation from Harvard in 1932. Carter remained in Paris until 1935, at which time he returned to the United States to launch his career.

²⁶ Richard Franko Goldman, "The Music of Elliot Carter," *The Musical Quarterly*, 43 no. 2 (1957): 152.

²⁷ Elliott Carter, "American Mavericks from American Public Media," Interview by Alan Baker, <http://musicmavericks.publicradio.org/features/interview_carter.html> (accessed March 24, 2008).

²⁸ Elliott Carter and Jonathan W. Bernard ed., *Collected Essays and Lectures, 1937-1995* (Rochester, NY, University of Rochester Press, 1997) 108.

Carter's oeuvre consists of nearly 120 compositions, thirty-five of which have been written in the 21st century. He has held faculty positions at St. John's College, Peabody Conservatory, Columbia University, Queens College, Yale University, the Juilliard School of Music, the Massachusetts Institute of Technology, and Cornell University. Additionally, he has been awarded honorary doctorates from the New England Conservatory, Swarthmore College, Princeton University, Harvard University, Yale University, Oberlin College, Boston University, and Cambridge University. He has been the recipient of two Guggenheim Fellowships, the Prix de Rome, and two Pulitzer Prizes for Music. Numerous titles, awards, and honors have been bestowed upon him for an influential career as a composer, teacher, and essayist.

Theoretical Analysis

The following is a theoretical analysis of *March* from Elliott Carter's *Eight Pieces for Four Timpani*. Of the *Eight Pieces*, six were written in 1949²⁹ and functioned as experiments in compositional technique. In an interview following a performance of his works, Carter says, "The *Eight Pieces*, you see, were written to develop notions of metric modulation as a sort of experiment. Because I then wrote my big *First Quartet*, which uses all the little metric modulations that you find here in the *Eight Pieces*, on a simplified basis. So this was a kind of sketch for a string quartet – if you can believe it!"³⁰ The string quartet to which Carter refers is his *String Quartet No. 1*, which established his reputation as a major composer in Europe by winning first prize in the Concours International de Composition pour Quatuor à Cordes. *March* is one of the original six pieces. It was premiered at the Junior Council of the Museum of Modern Art in New York, New York on May 6, 1952, but was not published until 1966.³¹

²⁹ Carter gives this as the year of composition in his interview with Patrick Wilson, although most sources (including Doernig) identify it as 1950.

³⁰ Elliott Carter, "Elliott Carter: Eight Pieces for Four Timpani," interview by Patrick Wilson (University of Southern California, 15 April 1983) *Percussive Notes*, 23 no. 1 (1984) 65.

³¹ William T. Doering, *Elliot Carter: A Bio-Bibliography* (Westport, Conn., Greenwood Press, 1993) 43.

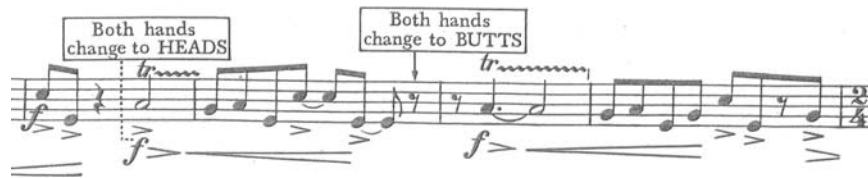
Sound

Timbre

The timpani produce a sound rich in overtones, which, in the case of *March*, results in an ethereal character. Furthermore, the pitches utilized (which remain constant throughout the work) sound comfortably within the ranges of the drums, resulting in excellent resonance on each timpano. These pitches are G, B, c, and e, and are generally played on drums of sizes 32 inches, 29 inches, 26 inches, and 23 inches, respectively. At the time of composition, however, drums of sizes 30 inches, 28 inches, and 25 inches were common, and may comfortably substitute for their contemporary counterparts.

As is the case with all membranophones, timbre is greatly affected by the implement with which the instrument is struck. In *March*, Carter specifies that the performer utilize “medium-hard sticks”^{32,33}. In order to achieve contrast in timbre throughout the piece, Carter frequently directs the performer to strike the instrument with the butt end of the mallets as in figure 3.1.

Figure 3.1 – mm. 22-25: Flipping the Mallets



In this instance the same end of the mallet is being utilized at the same time in both the right and left hands of the performer. However, throughout the vast majority of the piece Carter specifies that the right hand (notated with upward stems) strike with the head of the mallet while the left hand (notated with downward stems) strikes with the butt of the mallet (see figure 3.2). These various mallet orientations greatly expand the timbral possibilities of the instrument.

³² Elliott Carter, *Eight Pieces for Four Timpani* (New York, Associated Music Publishers, Inc., 1968), 21.

³³ While Carter utilizes refers to the implement as a *stick*, the author will use the more widely accepted term *mallet*.

Figure 3.2 – mm. 1-2: Notation of Right Hand Head/Left Hand Butt



In addition to mallet orientation, Carter creates further contrast in timbre through the action of muting the membranes of the timpani. The muted timpano creates a more staccato sound with less duration to the decay of each note. Moreover, a stroke executed on a muted timpano will be perceived as being quieter than a similar stroke executed on the same timpano with no mute. Figure 3.3 shows the first instance of muting in the piece.

Figure 3.3 – mm. 69-71: Muting the Timpani



Texture

Through the exploitation of variations in timbre, Carter clearly establishes a multiplicity of voices. In the opening and closing sections of the piece, the left hand performs a march-like accompaniment while the right hand performs a more legato melody. The homophonic nature of these sections is reinforced by the staccato markings in the left hand accompaniment and legato markings in the right hand melody, and is shown in figure 3.4.

Figure 3.4 – mm. 66-68: Homophonic Texture, Right Hand Melody/Left Hand March



A middle section, which begins at measure 39, utilizes the same contrast in timbre between each hand that we can see in the opening and closing sections. In this instance, however, true polyphony is never quite realized. Instead, this somewhat polyphonic portion of the work

creates a sense of textural dissonance and tension, as the listener may perceive both monophonic and polyphonic qualities (see figure 3.5). True monophonic textures occur in *March* when both hands strike with the same ends of the mallets. Table 3.1 identifies five primary contrasting textural sections and when and how the textural changes occur.

Figure 3.5 – mm. 43-45: Textural Dissonance

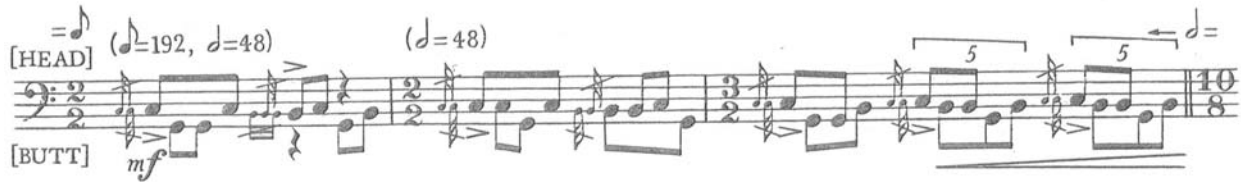


Table 3.1 – Textural Outline of the Work

Measures	Homophonic or Monophonic	Timbre
1-15	Homophonic	Right Head, Left Butt
16-38	Monophonic	Both Head or Both Butt
39-46	Elements of Both	Right Head, Left Butt
47-62	Monophonic	Both Head or Both Butt
63-81	Homophonic	Right Head, Left Butt

Dynamics

March offers a great deal of dynamic contrast and interest to the listener, and Carter has taken great care to make his dynamic intentions very clear. He has meticulously indicated which notes are to be emphasized through the use of accents, and even provided dynamic markings for individual notes. These two qualities leave very little to chance in the smaller dimensions of the piece, and instances of each are illustrated in figures 3.1 and 3.6.

Figure 3.6 – mm. 33-34: Meticulous Dynamic Indications



In the opening section, frequent crescendos and decrescendos are indicated. In one instance, Carter specifies that the right hand crescendo while the left hand continue playing a mezzo forte dynamic (also reinforcing the homophonic nature of the section), shown in figure 3.7.

Figure 3.7 – mm. 7-8: Independent Dynamic for Hands



Frequent and specific dynamic indications contribute to a reputation as a highly musical composition for solo timpani. In fact, while the composition is comprised of only 81 measures, Carter utilized 101 dynamic indications (not counting accents) within the work.

Harmony

While Carter utilized only four pitches in *March*, he clearly establishes a strong sense of tonality. The four pitches, G, B, c, and e, fit the key signature of C Major and spell a major I^7 chord in second inversion. The piece begins with c and e sounding together and ends on c, which is preceded by alternations of tonic and dominant followed by tonic and subtonic (figure 3.8), thus presenting a strong case for an authentic cadence and a tonality of C Major.

Figure 3.8 – mm. 80-81: Cadential Implication



Additionally, the incessant march accompaniment in the opening and closing sections alternates between c and G, the tonic-dominant motion that defines the traditional role of timpani

in the orchestra. Missing from the four pitches is a strong sense of subdominant harmony in the form of submediant, supertonic, or subdominant pitches.

Melody

It is difficult to compose extremely melodic material for timpani in light of the pitch limitations that the instruments present. However, the opening and closing polyphonic sections of *March* present melodic material utilizing the pitches B, c, and e. The range of the melody then is a perfect fourth, from B to e. The legato markings indicate that the pitches be thought of as connected, and imply a flowing quality to the line. This line is primarily composed of consecutive dotted-eighths, which is the main thematic material. During the monophonic sections of the piece, the range is expanded to include G. Due to the historical role of the timpani and the use of ornamentations and flourishes (see Figure 3.9) the work often has a fanfare-like quality.³⁴

Figure 3.9 – m. 3: Flourish



Rhythm

Perhaps the most intriguing of the contributing musical elements in *March* is rhythm, Carter's primary motivation for composing the work. In this piece, Carter utilizes the technique of metric modulation extensively. Table 3.2 identifies each instance of metric modulation, the pivot duration utilized, and the new rhythm generated. In each instance of metric modulation the listener does not perceive the metamorphosis until after it has occurred. This masking is often accomplished through the use of meter changes, as shown in figure 3.10, which ease the listener through the transition.

³⁴ James Blades, *Percussion Instruments and Their History*, 2d ed. (London, Faber and Faber Ltd., 1974), pp. 223-235.

Figure 3.10 – mm. 39-45: 3/8 Meter and Metric Modulation Mask New Tempo

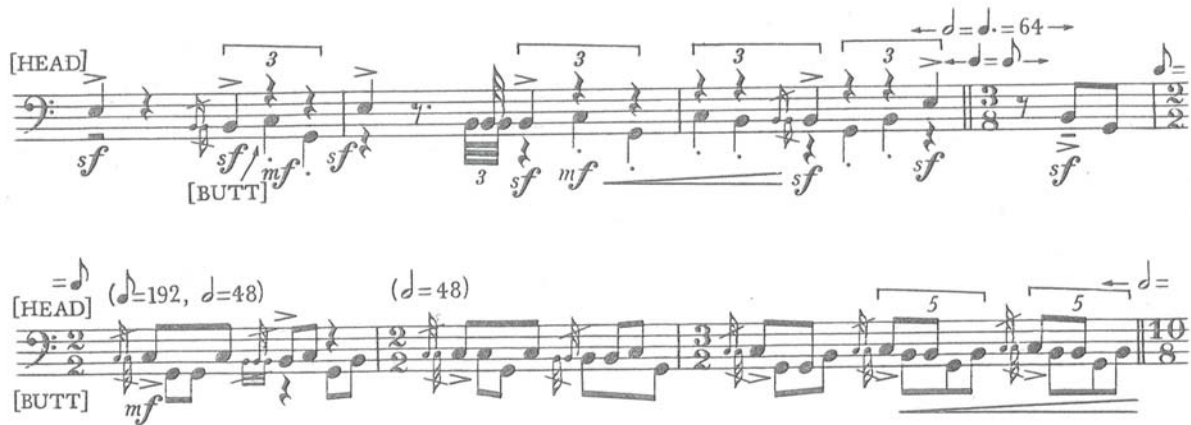


Table 3.2 – All Instances of Metric Modulation

<i>Measures</i>	<i>Pivot Duration of</i>	<i>Becomes the New Rhythm of</i>
15-16	Three Sixteenths	One Quarter Note
29-30	Five Eighths	One Half Note
37-38	Seven Sixteenths	One Half Note
41-42	One Quarter Note Triplet	One Eighth Note
45-46	Two Eighth Quintuplets	One Quarter Note
57-58	One Sixteenth Septuplet	One Sixteenth Note

The melodic interest generated by the right hand in the opening and closing march sections is polyrhythmic in nature (see figure 3.4). This polyrhythm comprises three notes in the left hand (accompaniment) against four notes in the right hand (melody) in an equal space of time. In this most frequent occurrence of polyrhythm the melodic interest is based on the dotted eighth note. However, in measures 5 and 6 (figure 3.11) Carter pits the value of a double-dotted quarter note against the value of a quarter note, creating a polyrhythm of four notes (melody) against seven (accompaniment).

Figure 3.11 – mm. 5-6: Four in Melody/Three in Accompaniment



Growth

Essentially, *March* is ternary in form. The expository section progresses to a developmental exploration of metric modulation rather than tonality. The recapitulation includes a return to material similar to the initial march-like statement.

The exposition, with the left hand providing the march and the right hand providing melodic interest (as in figure 3.4), increases in density as it develops. While the left hand remains constant with a steady march pulse, the melodic material becomes increasingly active until the beginning of the development and the first instance of metric modulation at measure 16. The rhythmic layering that Carter utilizes to provide a polyphonic texture, melodic content, and rhythmic interest is reminiscent of the music of Charles Ives. This influence of Ives on Carter is well documented,³⁵ and reflects the musical analytical nature of Carter's early contact with Ives.

The development, which begins at measure 16, is primarily monophonic in texture, and opens with a series of dramatic timpani rolls (figure 3.1). In these rolls, the performer must constantly alternate the orientation of the mallets. As in the exposition, the density of this rolling section gradually builds until the second metric modulation. At this point in the composition, Carter, through the use of two separate metric modulations, precisely increases the tempo of the quarter note from 105 beats per minute to 112 beats per minute. The third metric modulation ushers in a reduction in rhythmic density, which gradually returns. This gradual increase in density culminates in a succession of sixteenth notes (punctuated by fortissimo markings and accents) that immediately precedes the recapitulation.

At the recapitulation, Carter has returned to the original tempo. This time, however, the melody begins with a great deal of density. A process of gradually muting all four drums decreases the intensity of the piece as it approaches conclusion. Additionally, Carter closes the

³⁵ Jonathan W. Bernard, "The Evolution of Elliott Carter's Rhythmic Practice," *Perspectives of New Music*, 26 no. 2 (1988): 164-202.

recapitulation with a dynamic marking of *piano*. While the exposition includes a great deal of dynamic activity in the smaller dimensions of the piece, the recapitulation provides none. The final three measures serve as a brief codetta, in which monophony returns, rhythmic density increases, and dynamic level decreases (figure 3.12).

Figure 3.12 – mm. 79-81: Entire Codetta



Performance

Carter's *March* poses many performance challenges. Jan Williams, who worked closely with Carter on his *Eight Pieces*, identifies the final fermata (indicated as a roll), the process of muting the drums during the recapitulation, and the difficulties of managing the metric modulations as three challenges that must be addressed in performance.³⁶ Additionally, the performer must manage a great deal of quick stick-flip motions. Having experimented with mallets of various weights and under different performance situations, the author recommends utilizing a heavier implement to facilitate the flip. Finally, during the exposition and recapitulation, the performer should explore ways to make the multiplicity of voices as identifiable for the listener as possible. This can be accomplished through touch, grip, dynamic interpretation, and the character of stroke motion. Correctly realizing the homophonic texture will result in appropriate interpretation of the legato and staccato indications.

³⁶ Jan Williams, "Elliot Carter's 'Eight Pieces for Timpani' – The 1966 Revisions," *Percussive Notes*, 38 no. 6 (2000): 16-17.

CHAPTER 4 - 42nd Street Rondo

Biographical Information on the Composer

Wayne Siegel was born in Los Angeles, California on February 14, 1953. Although he studied composition and philosophy at the University of California at Santa Barbara, he completed his Bachelor of Arts in Aarhus, Denmark at the Royal Danish Academy of Music, where he studied composition with Danish composer Per Nørgård and Karl Rasmussen.³⁷ After graduating from the Royal Academy, he received a three-year grant in composition from the Danish Art Council and began working as a freelance composer. He held the position of Administrative Director of the West Jutland Symphony Orchestra and affiliated chamber ensemble, the Esbjerg Ensemble, from 1984 to 1986. In 1986 he was appointed Director of the newly founded Danish Institute for Electroacoustic Music (DIEM) in Aarhus. In 2003 DIEM became under the auspices of the Royal Danish Academy of Music, resulting in Siegel's appointment as Professor of Electronic Music.³⁸

Siegel's composition output consists primarily of chamber music and works for live electronics, and many of his acoustic compositions incorporate electronic elements. Additionally, Siegel has composed two works for orchestra, a work for symphonic winds, and an opera. As an American composer in Europe, he admits to feeling "less bound to European traditions than other composers in Denmark,"³⁹ and acknowledges that his work reflects "a strong sway towards American minimalist aesthetics."⁴⁰ Siegel has composed commissions for (among others) the Kronos Quartet, Singcircle, clarinet virtuoso Harry Sparnaay, Danish Music Theater, Safri Duo, the Danish Saxophone Quartet, the Danish Chamber Players, the Zealand Symphony, and the Aarhus Symphony Orchestra. He has written many works involving dance. A particularly interesting composition, *Netværk*, was written for an ensemble consisting of four composers and four computers.⁴¹

³⁷ Marshal writes that Siegel graduated from UCSB, however, Siegel himself indicates otherwise.

³⁸ Wayne Siegel, "Wayne Siegel's Webpage," <<http://www.daimi.au.dk/~wsiegel>> (accessed March 24, 2008).

³⁹ Ibid., [biography tab, paragraph 9].

⁴⁰ Ibid., [biography tab, paragraph 2].

⁴¹ Ibid.

Theoretical Analysis

The following is a theoretical analysis of *42nd Street Rondo*, a chamber piece scored for two percussionists and commissioned by the Danish Percussion Group. The title refers to the corner of 42nd Street and Broadway in Manhattan, New York, and as Siegel writes in the program notes, he originally imagined the work being performed at that location.⁴² The work is reminiscent of the hustle and bustle of a busy metropolitan street scene. The Safri Duo, a Danish percussion duet, has most frequently performed the work.

Sound

The work is written for four bongos, four toms, and four cowbells, with each performer playing two of each instrument. Siegel specifies hard mallets in the score, which results in a powerful metallic sound from the cowbells, a pointed energetic sound from the bongos, and an articulate attack from the toms. Both players utilize all three types of instruments throughout the majority of the work (the first few measures and a brief respite for Player One are the only exceptions). There is great contrast in sound between each of the three types of instruments, and Siegel composes for them in such a way as to create a complex polyphonic fabric that is sustained throughout the duration of the work. Much of the dynamic interest of the piece occurs naturally in the form of accents as each instrument contrasts with another. The dynamic indications used are *piano*, *forte*, and *fortissimo*, and are terraced. The work is void of any specified crescendo, decrescendo, or other form of gradual dynamic shift except for the final measure, which is marked as a crescendo to the end of the piece.

Melody

Throughout the composition, only one player strikes a tom or cowbell at any given time (the two exceptions to this are measures 33 and 35, which are clear departures from the rest of the work). The result is two separate continuous melodic constructs that work together in contrapuntal fashion. The first melodious construct is the combination of all four cowbells, and the second is the combination of all four toms. A third melodious construct exists with the combination of all four bongos (this construct is unique, and will be discussed later). The contour and character of the melodies created varies depending upon the relationship of one player's

⁴² Wayne Siegel, *42nd Street Rondo* (Aarhus, Denmark: Wayne Siegel, 1984) 1.

cowbells, toms, and bongos to the other's. While Siegel specifies that each performer have a high and low pitch of each of the three types of instruments, he does not specify the pitch relationships between the players' respective instrument combinations. The author prefers to give Player Two the highest and lowest of each instrument. For instance, the high cowbell of Player One will be lower than the high cowbell of Player Two, higher than the low cowbell of Player One, and higher than the low cowbell of Player Two, which will be the lowest of all four cowbells. The author recommends a similar relative melodic relationship between the frequencies created by the bongos and toms as well.

The notation system utilizes a three-line staff. Noteheads touching the top line indicate cowbells, noteheads touching the middle line indicate bongos, and noteheads touching the bottom line indicate toms. In each instance, the note resting above the line indicates the higher pitched of the two instruments. Player One is reading the top staff, and Player Two is reading the bottom staff (figure 4.1).

Figure 4.1 – m. 21



The cowbells create the melody shown in figure 4.2. Here, the spaces on a standard five-line staff are utilized to show the high-low relationships of the four cowbells.

Figure 4.2 – m. 21: Cowbell Melody



The toms create the melody shown in figure 4.3. Here the spaces on a standard five-line staff are utilized to show the high-low relationships of the four toms.

Figure 4.5 – m. 33: Polyrhythm



Yet despite this, the listener will perceive a polyrhythm in the combined sounds of both sets of cowbells. Player One will affect a feeling of three and Player Two will affect a feeling of two when this measure is realized in performance.

Growth

Each of the 36 measures of 42nd *Street Rondo* is meant to be repeated “several times.”⁴³ The exception to this is measure 31, which Siegel designates as being one time only, both in written word and through the absence of repeat signs enclosing the measure (all other measures contain repeat signs). It is the intent of the composer that the players cue the measure changes. Additionally, each measure brings a change in at least one of the player’s parts, and that player is responsible for cueing the measures in which his or her part changes. In the case that both parts change, both players must agree upon when to change. To aid the performers, Siegel designates each measure as either A, B, or AB, where Player One decides when to progress from an A measure, Player Two decides when to progress from a B measure, and both players decide when to progress from an AB measure.

The steady eighth note rhythms combined with this heavy usage of repetition result in a composition that is minimalist in character. Player One’s rests in measure 19 may come as a surprise to the audience. The first instance of sixteenth note introduction in measure 25, however, does not distract from the flow of the piece. Rather than facilitating a build to the climax at measure 33, the gradual additions of sixteenth notes *foreshadow* measure 33. It is through this departure from minimalism that affect is achieved.

In measure 34 both players return to eighth note patterns taken from the beginning of the piece. The final two measures, 35 and 36, are repetitions of 33 and 34. This time, however, the

⁴³ Ibid.

return to eighth notes is marked *piano* with a gradually crescendos to the final note. The return to earlier material in measures 34 and 36 bolsters the rondo quality of the piece.

Performance

The hard mallets specified by Siegel are well suited to outdoor performance (in a location such as the corner of 42nd street and Broadway in Manhattan). In a small venue, however, the performers may consider using a medium-hard mallet or wooden stick to prevent the volume level from becoming uncomfortably loud for the audience. The meter of 7/4, intense rhythmic activity, and constant repetition demand a great deal of concentration by the performer. It may, then, be in the best interest of both players to develop a preconceived notion of approximately how many times the measures should be repeated, insofar as the pressures of providing each other with cues may be somewhat alleviated. Finally, although the dynamics appear to be simplistic, the many shapes and contours passed around the six instruments provide a great deal of possibilities in the areas of phrase and shape.

CHAPTER 5 - Oceanus

Biographical Information on the Composers

Steve Houghton

Stephen Ross “Steve” Houghton was born on March 29, 1954 in Racine, Wisconsin. He began his music studies as a well-rounded percussionist, performing keyboard and concert percussion instruments in the high school symphonic band, orchestra, and jazz band. Houghton’s father, a high school band director, provided him with a firm background in music education.⁴⁴ In the tenth grade he decided to become a professional musician, which led him to pursue music studies at the University of Wisconsin-Madison in 1973, where he was a student of Ron Fink. While in Madison, Houghton had the opportunity to hear the University of North Texas One O’Clock Jazz Band. This experience convinced him to transfer to North Texas the following year, where he immediately gained entrance into the band.⁴⁵ His experience at North Texas lasted only a year and a half, after which time he became the drummer for the Woody Herman Band.

Following a year and a half with the Woody Herman Band, Houghton pursued a career as a total percussionist. He has performed on countless studio recording sessions, appears on more than 100 albums, has been a featured performer with more than twenty symphony orchestras, and has released nearly a dozen albums of his own. As a jazz sideman he has performed with (among many others) Gary Burton, Christian McBride, Freddie Hubbard, Arturo Sandoval, and Joe Henderson. It is Houghton’s rich performance experience and educational background that has enabled him to become an influential educator. He has authored more than thirty educational books and videos, and has been elected President of the Percussive Arts Society, the world’s

⁴⁴ Steve Houghton, “Steve Houghton: Man with a Mission” Interview by Robyn Flans *Modern Drummer* 11 (Dec. 1987): 29.

⁴⁵ Ibid.

premiere professional organization for percussionists. Currently, Houghton is Professor of Percussion and Jazz and Chair of the Percussion Department at Indiana University.⁴⁶

Wendell Yuponce

Wendell J. Yuponce was born on October 16, 1958 in Rantoul, Illinois, where his father was stationed as an Airman in the United States Air Force. He was raised in Sacramento, California, where his father had moved after retirement. His first instrument was piano, although he did not enjoy taking the lessons. Yuponce states, “I avoided the piano lessons by having my brother take those lessons for me, the piano teacher not knowing anything other than [sic] the responsibility of teaching a kid at our address.”⁴⁷ In high school his first instrument was cello, which he eventually abandoned in favor of percussion (hoping to become a member of his brother’s band). Yuponce attended the Cornish Institute, now Cornish College, in Seattle, where he majored in Percussion Performance with a Jazz Drumset Emphasis, and selected piano as his minor instrument. In Seattle, Yuponce began experimenting with composition.⁴⁸ There he studied composition with Jim Knapp, Julian Priester, and Marius “Butch” Nordal. He graduated with a degree in Music Performance in 1983, and subsequently spent three years in Hawaii working as drummer on cruise ships.⁴⁹

After his time in Hawaii, Yuponce relocated to Los Angeles to pursue a career as a studio drummer, where he eventually became a graduate student in composition at California State University in Los Angeles.⁵⁰ As a graduate student, Yuponce studied big band arranging with Bob Curnow, commercial and big band arranging with David Caffey, and percussion with Steve Houghton. He left graduate school to pursue a career as a freelance composer, but continued

⁴⁶ Steve Houghton, “Houghton Music,” <<http://www.houghtonmusic.com>> (accessed March 18, 2008) [biography tab].

⁴⁷ Wendell Yuponce gbwhale@winfirst.com, RE: Note from Wendell Yuponce [Email to David Whitman whitman@ksu.edu], 30 March 2008.

⁴⁸ Ibid.

⁴⁹ Wendell Yuponce gbwhale@winfirst.com, RE: Note from Wendell Yuponce [Email to David Whitman whitman@ksu.edu], 6 April 2008.

⁵⁰ Wendell Yuponce gbwhale@winfirst.com, RE: Note from Wendell Yuponce [Email to David Whitman whitman@ksu.edu], 24 March 2008.

composition studies in an on-the-job fashion with Hollywood composer Richard Hazard.⁵¹ Since then, Yuponce has been active in composing for television and film. He has composed hundreds of scores for networks such as Warner Brothers, NBC, ABC, HBO, MTV, and Showtime. Additionally, he has written for the television shows *Unsolved Mysteries*, *Larry David: Curb Your Enthusiasm*, *Comic Justice*, *In the Heat of the Night*, the 1992 Summer Olympics, *Lifestyles of the Rich and Famous*, *Americas Most Wanted*, and *Saturday Night Live* (among many others).⁵²

Theoretical Analysis

The following is a theoretical analysis of *Oceanus*. The work was a collaborative effort between Houghton and Yuponce. Yuponce says, “Steve functioned as producer, guiding the concepts and how the piece should develop, while I would orchestrate and flesh out the motifs and ideas, first as sketches and finally realized as a recording.”⁵³ Below is an excerpt from the performance notes provided in the score.

This piece was designed as a showcase for a multi-percussionist capable of executing an advanced performance on both drumset and marimba. It was intended that through the construction and composition of this piece, the performer would be put through a series of challenges not unlike those placed upon a percussionist during an especially difficult recording session. ... In the spirit of developing and exploring ... expressive potentials, the music allows much latitude for expressive and creative interpretation. OCEANUS was conceived as a piece for percussionist and pre-recorded ensemble. ...⁵⁴

Thus, Houghton and Yuponce seem to be perfectly fitted to the composition of the work, insofar as Houghton has a great deal of experience *performing* challenging studio music and Yuponce has a great deal of experience *composing* challenging studio music. Houghton, also having an extensive teaching background, shapes the creation of a work that is also educational

⁵¹ Wendell Yuponce, RE: Note from Wendell Yuponce, 6 April 2008

⁵² Wendell Yuponce, “GB Whale Music,” ©James Runner Consulting, <<http://www.gbwhalemusic.com>> (accessed March 12, 2008).

⁵³ Wendell Yuponce, RE: Note from Wendell Yuponce, 24 March 2008.

⁵⁴ Steve Houghton and Wendell Yuponce, *Oceanus* (Van Nuys, CA: Studio 4 Productions and Alfred Publishing Co., Inc., 1991) i.

for younger percussionists. The end result is what Rick Mattingly, current editor of *Percussive Notes*, considers “a very worthwhile addition to percussion literature.”⁵⁵

Sound

Timbre

The three instruments called for in performance of *Oceanus* are drumset, marimba, and crotales. The drumset alone offers a great deal of contrast in timbre, as the performer is called upon to utilize traditional drumsticks, brushes, and timpani mallets. Notably, the timpani mallets are listed in the performance notes as required equipment, but are never called for in the notated music.⁵⁶ The brushes and (as a presumption) timpani mallets are utilized only in the opening and closing sections of the piece (measures 1-24 and measures 217-229). The performer is instructed to play “freely” and “improvise colors with cymbals”⁵⁷, providing ambiance and color. It is during these moments of ambiance that the music calls for crotales to be performed with the butt end of whatever implement the performer chooses. The crotales offer a great deal of contrast in timbre with the thin underlying texture and sense of stillness, and create an effect of bright shimmer.

The opening and closing freely sections are followed and preceded (respectively) by two drumset sections (measures 25-84 and measures 158-216). The drumset music is written in the manner of a studio drumset chart. In this style of notation much of the music is left up to the performer, who is primarily provided with important figures and a general representation of style and groove. The first measure of drumset music, shown below in figure 5.1, indicates that the ride cymbal is to be the dominant timbre. The notated jazz ride pattern indicates that the style of the music is a double-time jazz feel, and, as such, the performer should explore the style as much as possible without limiting his or her self to executing just the ride cymbal strokes indicated.

⁵⁵ Rick Mattingly, “Oceanus” Review of *Oceanus* by Steve Houghton and Wendell Yuponce, *Modern Drummer* 16 (Apr. 1992): 100.

⁵⁶ Steve Houghton and Wendell Yuponce, *Oceanus*, i.

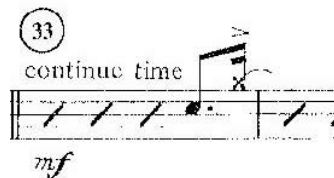
⁵⁷ *Ibid.*, 1,6.

Figure 5.1 – m. 27: Drumset Entrance



Below (figure 5.2) is shown the drumset notation that occurs six measures later, in measure 33.

Figure 5.2 – m. 33: Figures Begin



This method of notation should result in the ride cymbal being the dominant timbre from the kit, with frequent embellishments coming from all other instruments of the drumset.

The middle section of the work (measures 88-157), allows the performer to display his prowess on the marimba. Here the timbre is primarily consistent. The written music ranges from d to d^{iii} , spanning a total of three octaves plus one semitone. The performer, however, is not limited to this range alone, as measures 104-127 call for improvisation over provided chord changes. Therefore, the instrument and the whim of the performer are the final factors that determine the range covered during a given performance.⁵⁸

Texture

Oceanus presents three primary texture areas. In the opening and closing sections, the texture is sparse and mysterious. In these sections, tape accompaniment consists of ambient background sound, sparse bright punctuations with the character of crotales or bells, and sparse rhythmic figures performed by an electric bass guitar. Here, the musical fabric is thin and spacious, and the performer may shape it a great deal through his or her interpretation.

In the drumset sections the fabric thickens as the sparse bass guitar figures in the opening give way to a complete bass line, and a synthesizer provides melodic content. The drumset

⁵⁸ There is no limit to the range of a custom built marimba.

continuously adds punctuation to the rhythmic figures that occur, and the sections feature the drumset with plenty of solo opportunities and fills. The texture is primarily polyphonic, as the bass guitar generally provides accompaniment to melodic content in the synthesizer.

Occasionally, the fabric is reversed as the synthesizer provides a sonic foundation supporting melodic content in the bass guitar. Reintroduction of the drumset at measure 158 initiates a series of exchanges in which improvised drumset solo alternates with drumset and tape executing composed unison figures. The texture is somewhat sparse until a texture similar to that of the opening section returns at measure 194.

The marimba section presents the performer and tape playing in unison throughout, with the exception of the improvisational passage. Preceding the improvisation (measures 88-103), the marimba part is in unison with prerecorded vibraphone, creating a very rich timbre and lush texture. Once the improvisation is complete the marimba part returns to unison figures with the tape (measures 128-157), although synthesizer is now added. An accompanying bass pattern supports the entire marimba portion of the work. This bass pattern is performed by sampled sounds reminiscent of a marimba prior to the improvisation section, at which time it is passed to the electric bass guitar. The result is a homophonic texture throughout.

Harmony

Yuponce, commenting about the harmonic organization of *Oceanus*, says, “If you see the score [to the prerecorded tape] you’ll see largely singular modal (I am not using the word tonal which would imply ‘keys’) sections that shift within the piece.”⁵⁹ The chord changes shown in figure 5.3 are reflective of the Yuponce’s comment. Here the first few chords, while notated as D Major⁷, imply completely different modalities. D/B suggests B Aeolian and raising the subdominant (sharp eleventh) suggests D Lydian or A Ionian. The final minor-major seventh chord reflects B Melodic Minor. Subsequent chords explore modalities of A, G, and F, providing harmonic direction stemming from the descending motion. The concluding chord returns to B Dorian.

⁵⁹ Wendell Yuponce gbwhale@winfirst.com, RE: Note from Wendell Yuponce [Email to David Whitman whitman@ksu.edu], 7 April 2008.

Figure 5.3 – mm. 104-127: Modal Cycles

D Δ 7/B (opt. solo next 8 bars.)

D Δ 7+11/B

Bm Δ 7

112 A Δ 7 ad lib. solo

1 2 3 4

G Δ 7

5 6 7 8

B \flat Δ 7+11

9 10 11 12

Bm7

13 14 15 16

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Melody

The melodic content of the composition is highly syncopated, disjointed, and chromatic. Figure 5.4 present examples of many chromatic leading tones and syncopated rhythms. This melody is performed in unison with the tape.

Figure 5.4 – mm. 148-157: Typical Melodic Style

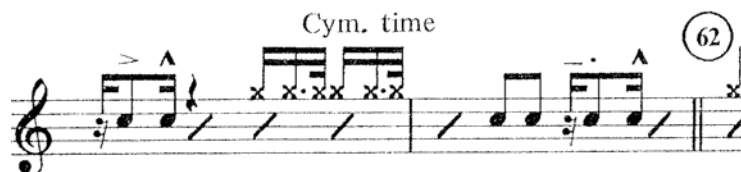


Since the melodies of the work are highly chromatic, tension and release is predominantly manipulated through range and contour. In this five-measure phrase, the melody begins with an ascending line and ends with a descending line. The descending line creates a sense of rest, despite continuous modal fluctuation.

Rhythm

Oceanus is a highly syncopated work. Both the marimba and drumset portions of the work contain numerous instances of the second and fourth beat partials in the context of an underlying sixteenth note pulse. Figure 5.5 illustrates this syncopation, as well as the use of rhythmic displacement. In this instance the syncopated figure is shifted from beat one in the first measure, to beat three in the second.

Figure 5.5 – mm. 60-61: Rhythmic Displacement and Syncopation



The composition also contains rhythmic figures based on eighth or sixteenth notes in groups of three, creating hemiolas. A skillful performer on drumset can capitalize on these

figures to distort the perception of the pulse. Figure 5.6 illustrates eighth-note based hemiola, and figure 5.7 illustrates sixteenth-note based hemiola. The eighth note example creates a sense that the pulse slows, while the sixteenth note example creates a sense that the pulse quickens.

Figure 5.6 – mm. 80-81: Eighth-Note Based Hemiola

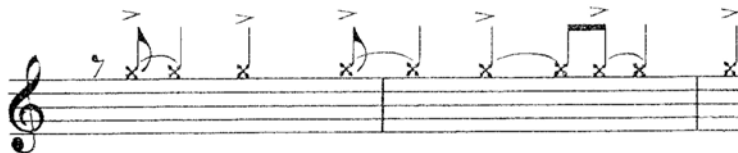


Figure 5.7 – mm. 214-215: Sixteenth-Note Based Hemiola



Measure 158 marks a section in which the tape and drumset player provide motivic development through unison rhythmic figures. The drumset player introduces the primary motive on the snare drum. While the snare drum motives are maintained, each of the three subsequent passages embellishes upon the motive in a unique way. Additionally, rhythmic density increases from one passage to the next. The four unison passages are shown in figures 5.8. Four-measure fills separate each passage. The snare drum is notated on the bottom space of the staff.

At measure 129, the marimba and synthesizer parts comprise unison eighth note triplets phrased in groups of four. Examples of this grouping are shown in figure 5.9 and 5.10. In figure 5.10 the grouping is rhythmically diminished, as the sixteenth-note triplet is manipulated.

The performer may employ a great variety of rhythmic techniques in *Oceanus*. Performers will provide their individual styles of rhythmic interest, as they improvise unique compositions with successive performances.

Figure 5.8 – mm. 158-186: Snare Drum Motive and Subsequent Embellishments

158 $\text{♩} = 132$
S.D.
mf

4 measure fill
p B.D.

4 meas, fill
mp Improvised tom pitches

4. meas. Fill
mf

186 *too loud!* Mambo
Fill *f*

Figure 5.9 – m. 129: Eighth Notes in Groups of Four



Figure 5.10 – mm. 137-138: Diminution of Eighths to Sixteenths



Performance

Performers must take care to balance all acoustic instruments with the prerecorded music. Amplification of acoustic instruments and personnel committed to the issue during the live performance may be helpful. During the drumset portions of the work, care should be taken to adhere to the ride cymbal as much as possible in order for the audience to properly perceive the accompanying track. Performers must not begin the performance until they are certain that the volume level of the click track is adequate.

Sources Consulted

Adams, Daniel. "Surface Area Contrast as a Compositional Element in Elliott Carter's Moto Perpetuo." [Analytical Essay, Unpublished]

"Alvin Etler." *The Musical Times*. 114 (Dec. 1973): 1269. [Obituary].

Barnhart, Stephen L. *Percussionists: A Biographical Dictionary*. Westport, CN: Greenwood Press, 2000.

Beck, John H., Ed. *Encyclopedia of Percussion*. New York: Garland Publishing, Inc., 1995.

Bernard, Jonathan W. "Elliott Carter and the Modern Meaning of Time." *The Musical Quarterly* 79, no. 4 (1995): 644-682.

_____. "The Evolution of Elliott Carter's Rhythmic Practice." *Perspectives of New Music* 26, no. 2 (1988): 164-203.

Blades, James. *Percussion Instruments and Their History*. 2d ed. London: Faber and Faber Ltd., 1974.

Boatwright, Howard. "Paul Hindemith as a Teacher." *The Musical Quarterly* 50, no. 3 (1964): 279-289.

Bradley, Raydell Cecil. "A Study of the Use of Programmatic and Liturgical Themes in Selected Wind Ensemble Compositions of David Gillingham." D.M.A. diss., University of Washington, 2000. [Available from University Microfilms Incorporated. Order No. 9975956].

Carter, Elliott. "American Mavericks: An Interview with Elliott Carter." Interview by Alan Baker. [Interview conducted July 2002 in New York City for broadcast by American Public Media.] <http://musicmavericks.publicradio.org/features/interview_carter.html> (accessed March 24, 2008).

_____. *Eight Pieces for Four Timpani*. New York: Associated Music Publishers, Inc., 1968. [Score]

_____. "Elliott Carter: Eight Pieces for Four Timpani." Interview by Patrick Wilson *Percussive Notes* 23 no. 1 (1984): 63-65.

_____. "An Interview with Elliott Carter." Interview by Jonathan W. Bernard. n.d. *Perspectives of New Music* 28, no. 2 (1990): 180-214.

Carter, Elliott, Jonathan W. Bernard, Ed. *Elliott Carter: Collected Essays and Lectures, 1937-1995*. Rochester, NY: University of Rochester Press, 1997.

Cherlin, Michael. Review of *Elliott Carter: Collected Essays and Lectures, 1937-1995* by Elliott Carter and Jonathan W. Bernard. *Music Theory Spectrum*. 23, no. 1 (2001): 90-98.

Cohn, Arthur. *The Literature of Chamber Music*. Vol. 2. Chapel Hill, NC: Hinshaw Music, Inc., 1997.

Doering, William T. *Elliott Carter: A Bio-Bibliography*. Westport, CN: Greenwood Press, 1993.

Etler, Alvin. *XL Plus One*. San Antonio: Southern Music Company, 1970.

Faust, Randall E. "Composer Profile: Alvin Etler." *NACWPI Journal*. 42 no. 1 (1989): 33-35.

_____. "Composer Profile: David Gillingham." *NACWPI Journal*. 38 no. 1 (1993): 42-44.

Gillingham, David. "Composer Spotlight: David Gillingham pt. 1." Podcast by C-Alan Publications. Interview by Nathan Daughtrey. <<http://www.c-alanpublications.com/podcasts/gillingham-interview1.mp3>> (accessed February 2, 2008).

_____. "Composer Spotlight: David Gillingham pt. 2." Podcast by C-Alan Publications. Interview by Nathan Daughtrey. <<http://www.c-alanpublications.com/podcasts/gillingham-interview1.mp3>> (accessed February 2, 2008).

_____. *Concerto for Marimba and Wind Ensemble*. Greensboro, NC: C. Alan Publications, 2008.

_____. gilli1dr@cmich.edu. RE: Wisconsin/Marimba Concerto [Email to David Whitman whitman@ksu.edu]. 22 February 2008.

Goldman, Richard Franko. "The Music of Elliott Carter." *The Musical Quarterly* 43, no. 2 (1957): 151-170.

Houghton, Steve. "Steve Houghton: Man with a Mission." Interview by Robyn Flans *Modern Drummer* 11 (Dec. 1987): 28.

_____. "Houghton Music." <<http://www.houghtonmusic.com>> (accessed March 18, 2008).

Houghton, Steve, Wendell Yuponce. *Oceanus*. Van Nuys, CA: Studio 4 Productions and Alfred Publishing Co., Inc., 1991.

- Hoxie, Jonathan David. "Music for Viola and Harpsichord Written After 1945 by American Composers: A Lecture Recital." D.M.A. research paper, Arizona State University, 1997. [Available from University Microfilms Incorporated. Order No. 9725300].
- Keefe, Simon P. Ed. *The Cambridge Companion to the Concerto*. New York: Cambridge University Press, 2005.
- Knussen, Sue, Elliott Carter. "Elliott Carter in Interview." *Tempo*. 197 (July 1996): 2-5.
- Larrick, Gary H. "Eight Pieces for Four Timpani by Elliott Carter: Analysis." *Percussionist* (Fall 1974): 12-15.
- _____. "Symphonic Percussion: Metric Modulation." *Percussive Notes*. 27, no 1. (1988): 46-49.
- LaRue, Jan. *Guidelines for Style Analysis*. 2d ed. Warren, MI: Harmonie Park Press, 1992.
- Layton, Robert Ed. *A Guide to the Concerto*. New York: Oxford University Press, 1996.
- Lindahl, Robert Gordon. "Brass Quintet Instrumentation: Tuba versus bass trombone." D.M.A. research paper, Arizona State University, 1988. [Available from University Microfilms Incorporated. Order No. 8907717].
- Lebrecht, Norman. *The Complete Companion to 20th Century Music*. rev. ed. London: Simon & Schuster UK Ltd., 2000.
- Lloyd, Llewelyn S., Richard Rastall. "Pitch Nomenclature." *Grove Music Online*. ed L. Macy. <<http://www.grove-music.com>> (accessed 17 March 2008). [format and URL requested by Grove Music].
- Mattingly, Rick. "Oceanus." Review of *Oceanus* by Steve Houghton and Wendell Yuponce. *Modern Drummer* 16 (Apr. 1992): 100.

- Marshal, Ingram D. "Siegel, Wayne." *Grove Music Online*. ed L. Macy. <<http://www.grove.com>> (accessed 17 March 2008). [format and URL requested by Grove Music]
- McCormick, Robert M. "Eight Pieces for Four Timpani by Elliott Carter: Analysis." *Percussionist*. (Fall 1974): 7-11.
- Mechna, Michael, Kurt Stone, Slonimsky, Nicolas. ed. "Etler, Alvin (Derald)." *Baker's Biographical Dictionary of Musicians*. Vol. 2. New York: Schirmer Books, 2001.
- Murray, Bain, William Bergsma, Paul Henry Lang, Alan Rich, Reginald Smith Brindle. "Current Chronicle." *The Musical Quarterly*. 44, no. 1 (1958): 82-101.
- Painter, Noel Thomas. "Exploring Contour Associations Through Transformation Networks: Identification and Classification of Contour Relations in Modern Multiple Percussion Music." Ph.D. diss., Rochester, NY, University of Rochester, 2000. [Available from University Microfilms Incorporated. Order No. 9963618].
- Papastefan, John J. "Contemporary Timpani Techniques." *Percussionist*. (Winter 1980): 75-87.
- Salzman, Timothy, ed. *David Gillingham*. Vol.1, *A Composer's Insight: Thoughts, Analysis and Commentary on Contemporary Masterpieces for Wind Band*, by Raydell [Cecil] Bradley and J. Bradley McDavid. Galesville, MD: Meredith Music Publications, 2003.
- Sheldon, Paul M. "A Look at the Career of a Significant Twentieth-Century Composer of Music for Wind Instruments." *Woodwind World-Brass & Percussion*. 18 no. 6 (1979): 9-10.
- Siegel, Wayne. "Wayne Siegel's Webpage." <<http://www.daimi.au.dk/~wsiegel>> (accessed March 24, 2008).

Stein, Don Allen. "The Function of Pitch in Elliott Carter's String Quartet No. 1." Ph.D. diss., St. Louis, MS, Washington University, 1981. [Available from University Microfilms Incorporated. Order No. 8122759].

Turabian, Kate L. *A Manual for Writers of Term Papers, Theses, and Dissertations*. 6th ed., rev. John Grossman and Alice Bennett. Chicago: The University of Chicago Press, 1996.

Williams, Jan. "Elliott Carter's 'Eight Pieces for Timpani' – The 1966 Revisions." *Percussive Notes*. 38 no. 6 (2000): 8-17.

Wooldridge, Marc. "IWU Music Faculty." <<http://cas.indwes.edu/academic-divisions/Music/faculty/wooldridge.htm>> (accessed April 4, 2008).

Yuponce, Wendell. "GB Whale Music." ©James Runner Consulting. <<http://www.gbwhalemusic.com>> (accessed March 12, 2008).

_____. gbwhale@winfirst.com. RE: Note from Wendell Yuponce [Email to David Whitman whitman@ksu.edu]. 7 April 2008.

_____. gbwhale@winfirst.com. RE: Note from Wendell Yuponce [Email to David Whitman whitman@ksu.edu]. 4 April 2008.

_____. gbwhale@winfirst.com. RE: Note from Wendell Yuponce [Email to David Whitman whitman@ksu.edu]. 24 March 2008.

_____. gbwhale@winfirst.com. RE: Note from Wendell Yuponce [Email to David Whitman whitman@ksu.edu]. 30 March 2008.