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UNIVERSITY OF OKLAHOMA
GRADUATE COLLEGE

AN INVESTIGATION OF THE RELATIONSHIP BETWEEN WIND AND PERCUSSION SCORING IN SELECTED TWENTIETH-CENTURY WIND ENSEMBLE LITERATURE: INTERPRETIVE OPTIONS FOR THE CONDUCTOR

A Document

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

degree of

Doctor of Musical Arts

By

Adam Francis Brennan

Norman, Oklahoma

2000

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AN INVESTIGATION OF THE RELATIONSHIP BETWEEN WIND AND PERCUSSION SCORING IN SELECTED TWENTIETH-CENTURY WIND ENSEMBLE LITERATURE: INTERPRETIVE OPTIONS FOR THE CONDUCTOR

A Document APPROVED FOR THE
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My deepest thoughts however, must be reserved for my wife Katherine and our own family. Our eldest son Max was born at the beginning of this project and since, we have witnessed the birth of our second son Ian, and most recently our daughter, Maggie Kate. While I worked at a new institution and wrote this document, Katherine spent countless hours alone caring for our children, one of whom has special needs, and never begrudged me any of the needed time. Without their love, sacrifice and support, I could never have completed this project. It is to them that I owe much of my musicianship, for they have shared the greatest joys, sorrows, hopes, and dreams of my life. Only music can come close to expressing my feelings for them, and I see them in every work of music that I am blessed to be able to perform. So it is with greatest joy, admiration, and love that I dedicate this document to the most precious gifts God has given me - my wife Katherine, our sons Max and Ian and our daughter Maggie Kate.

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ABSTRACT

The purpose of this study was to investigate the relationship between wind and percussion scoring in selected twentieth-century wind ensemble literature and to offer interpretive possibilities for conductors. The influence that percussion and wind performance have on each other was examined using selected musical examples. The critical question investigated was how can the ensemble conductor identify and interpret these influences to create a more cohesive, artful and musically enriching performance. The examination of performance options in selected excerpts provides the wind ensemble conductor with a resource for better understanding the interpretive implications of wind and percussion writing. An overview of the evolution of percussion in twentieth-century wind ensemble literature is offered to illustrate the evolving roles of these sonic elements. An increased rhythmic vocabulary was identified and discussed, and a three-dimensional approach to articulation and the use of mental imagery to aid interpretation was suggested.

CHAPTER 1

The purpose of this study was to investigate the relationship between wind and percussion scoring in selected twentieth-century wind ensemble literature and to offer interpretive possibilities for conductors. The influence that percussion and wind performance have on each other was examined using selected musical examples. The critical question to be investigated is how can the ensemble conductor identify and interpret these influences to create a more cohesive, artful and musically enriching performance. The examination of performance options in selected excerpts will provide the wind ensemble conductor with a resource for better understanding the interpretive implications of wind and percussion writing. Given the focus of this document on performance relationships between winds and percussion, an overview of the evolution of percussion in twentieth-century wind ensemble literature is offered to illustrate the evolving roles of these basic sonic elements.

Percussion writing has flourished in the twentieth century, not only in literature for the soloist or chamber percussion ensemble, but in the wind ensemble and orchestra as well. Repertoire for the wind ensemble in the past few decades reflects this expanding role of percussion in the large ensemble. Even as this document is being prepared, there is a formal study underway to identify significant excerpts of percussion taken from wind literature that would broaden the audition repertoire for the performing percussionist.[1]

[1] Research data is being gathered by James Latten at The Penn State University to identify percussion excerpts from the wind repertoire that are significant in their technical, musical, stylistic or historical perspective.

The status of the percussionist and the use of percussion instruments has evolved from a role of punctuation and support to purveyor and progenitor of the compositional process.

The performance demands on the percussionist have increased through this evolution, calling for ever-widening recognition and comprehension of these demands by not only the performer, but by the ensemble conductor as well. As a result of the number of instruments, diversified techniques and implements required of the modern percussionist, ensemble conductors face increasing complexity in interpretive options. While becoming more cognizant of new parameters of sound within the percussion family, it is equally important to understand how to relate percussion to the winds and vice versa. By recognizing how the percussion role has changed, we open our ears to a fertile field of sound that can broaden our interpretive choices for the entire ensemble.

Prior to 1900, percussion functioned primarily in a role of support and punctuation. Relatively speaking, it is a rare example prior to 1900 that illustrates the exotic flavor percussion could add to an orchestration. Igor Stravinsky expanded this role to include greater use of percussion color, greater rhythmic and metric complexity and a higher degree of motivic employment. These attributes can be best illustrated by the following ten works by Stravinsky completed in the period between 1910 and 1920: *Les Roi des Etoiles, Le Rossignol* (1908-14), *Le Chant du Rossignol, Renard* (1916), *Ragtime, Le Sacre du Printemps, Les Noces* (1912-23), *L'Histoire du Soldat* (1918), *Petrushka, and L'Oiseau de Feu.*[2]

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[2] Houston, Bob. "A Summary of the Percussion Writing of Igor Stravinsky." Percussionist vol 16, no. 1, Fall (1978) 10.

In *La Sacre du Printemps* Stravinsky's percussion scoring becomes an equal entity in the compositional process.

> It is with this work, perhaps more than any other Stravinsky composition, that one associates with percussion. But in actuality, the reason for this belief is based on the fact that in *La Sacre du Printemps* Stravinsky utilized the entire orchestra as a percussion section. Percussion instruments provided rhythmic complexity and generated tremendous power while contributing exotic color to the orchestration. The more subtle, intellectual application of percussion did not make its appearance in Stravinsky's writing until *L'Histoire du Soldat* and *Les Noces*. Perhaps nowhere else in orchestral literature has percussion been given such a wide scope of unbridled power as in *Le Sacre du Printemps*.[3]

Similar evidence of extensive percussion use can be seen in Gregory Youtz's *Fire Works* (1990). According to the composer's notes, the entire wind ensemble is used like a gigantic drum set.[4]

With percussion color reaching new historical proportions in literature it is important to examine the impact this scoring can have on wind performance techniques in the ensemble. Such an investigation may lead to the following questions: Has there been a role reversal between winds and percussion? Was there a ripple effect created by Stravinsky's unique use of percussion, and, if so, in what composers might this be seen? Just as percussion performance techniques have evolved historically according to ensemble function, this study will examine wind performance options that have arisen as a result of that changing role.

A dissertation by Craig T. Pare (1993) discusses advancements and achievements in twentieth-century percussion writing for bands. A further purpose of that study was to demonstrate that the cited works improved the status of percussion scoring, suggesting

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[3] Ibid., 11.

[4] Gergory Youtz. Fire Works. (TRN Music Publishers: 1988), preface to the score.

that the modern conductor and composer needs to have a better understanding for this family of instruments and their musical potential.[5]

Literature on the subject of percussion scoring includes journal articles and dissertations, suggesting the relative newness of this topic. Writings about the specific composers and pieces that will be included in this study have yielded more than sixty possible sources and numerous texts on orchestration provide insight regarding percussion use. None, however, deal specifically with the relationship between percussion and wind writing. Specific sources that provide valuable insight into the composers and works utilized in this study include those by Roger Nichols, Paul Griffith, Roger Cogan, Pozzi Escot, Sherman Van Solkema, Louise Norton Varèse, Carla Huston Bell, and Messiaen's own writing about his music, *The Technique of My Musical Language*.[6]

Some sources that provide direct information from the composers about the use of percussion and offer insight as to how the role of these instruments has changed during this century include those by Byron Adams, Frank Battisti, Jean-Charles Francois, Bob Houston, Jeffrey Renshaw, George Rochberg, Gunther Schuller, and Rudy Shackelford.[7]

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[5] Craig Pare, "An Examination of Innovative Percussion Writing in the Music of Four Composers: Vincent Persichetti – *Symphony for Band*, Karel Husa – *Music for Prague 1968*, Joseph Schwantner – *and the mountains rising nowhere*, Michael Colgrass – *Winds of Nagual*." (DMA Dissertation, College Conservatory of Music, University of Cincinnati, 1993), 83.

[6] Roger Nichols' *Messiaen*, Paul Griffith's *Messiaen and the Music of Our Time*, Robert Cogan and Pozzi Escot's *Sonic Design: The Nature of Sound and Music*, Robert Cogan's *New Images of Musical Sound*, Sherman Van Solkema's *The New Worlds of Edgar Varèse*, Louise Norton Varèse's *Varèse: A Looking Glass Diary* and Carla Huston Bell's *Olivier Messiaen*. (See Bibliography)

[7] Byron Adams' "*Karel Husa's Music for Prague 1968: An Interpretive Analysis*," Frank Battisti's "*Karel Husa: Keeping Ties with Tradition*," Jean-Charles Francois' "*Percussion Sound Structure*," Bob Houston's "*A Summary of the Percussion Writing of Stravinsky*," Jeffrey Renshaw's "*Schwantner on Composition*," George Rochberg's "*The New Image of Music*," Gunther Schuller's "*Conversation with Varèse*," and Rudy Shackelford's "*Conversation with Vincent Persichetti*." (See Bibliography)

A number of dissertations other than Pare's address analysis, scoring and interpretation that have implications for this project. These include Charles Bruning, Sterling Page Cossaboom, Cynthia Folio, Edgar Gangware, Donald Alan Morris, and Darell Elroy Wood.[8]

This study is unique in its exploration of the interpretive impact that wind and percussion scoring has on performance. While this study will examine works discussed by Pare, it will also consider works that predate and post-date this repertoire. Furthermore, it will examine this music from a different perspective. For example, the dissertation by Pare, while pointing to new instruments, new uses for traditional percussion, and the development of new playing techniques on percussion instruments, does not pursue the possible effect these innovations may have had on wind performing techniques in the wind ensemble.[9] In addition, a discussion of wind writing and performing as it relates to advancements in percussion scoring is not the focus of the Pare dissertation, leaving an opportunity to review the same works in a new manner.

Due to the expansion of percussion within the wind ensemble, new demands have emerged which include dealing with an ever-expanding number of instruments and techniques. This document will make the task of interpreting percussion parts as they

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[8] Charles Bruning's "*A Survey and Handbook of Analysis for Conducting and Interpretation of Seven Selected Works in the Standard Repertoire for the Wind Band*," Cossaboom's "*Compositional and Scoring Practices for Percussion in Symphonies Written for the Concert Band: 1950-1970*," Folio's "*An Analysis and Comparison of Four Works by Joseph Schwantner: and the mountains rising nowhere: Wild Angels on the Open Hills: Aftertones of Infinity: and Sparrows*," Gangware's "*The History and Use of Percussion Instruments in Orchestration*," Morris' "*The Life of Vincent Persichetti with Emphasis on his Works for Band*," and Wood's "*A Paradigm for the Study and Performance of Integrales and Hyperprism*." (See Bibliography)

[9] Pare does acknowledge the contributions of Stravinsky, Varèse, and Messiaen, but does not discuss their work. This is an area of study that could benefit from further investigation since important innovations in percussion scoring are generated by these composers. This fact may bring into question whether the composers cited in the Pare document are revolutionary or evolutionary.

relate to wind parts more tractable. The need for this kind of study is reinforced by Gary Cook in his text, Teaching Percussion.

> Throughout the second half of the twentieth century, composers of serious orchestral, band, and chamber music have given greater consideration to the inherent compositional potentialities of percussion instruments than at any time previously in the history of music. By progressively writing more imaginatively and abundantly for percussion, these composers have imposed increasing demands on musical organizations to provide a larger inventory of percussion instruments and more well-trained percussionists to perform on these instruments. The average school percussionist is now likely to be called upon to perform technically and musically demanding parts that are far beyond the capabilities developed through the average school music program. In order to address these demands of percussion writing, today's percussion students and teachers must adopt a system of study that develops musical understanding of percussion instruments, their techniques, and their literature.[10]

Taking Cook's assertion a step further, the conductor must not only address sounds produced by the percussion section, but must also explore how the sounds of the percussion and winds can better compliment, imitate, or be differentiated from each other. This study will bring needed attention to the expanding interpretive issues that relate to the treatment of wind and percussion sounds.

Five issues will be addressed: 1) understanding the scoring between winds and percussion in wind ensemble literature; 2) imitation of percussion by wind instruments; 3) scored imitation of winds by percussion instruments; 4) wind instruments in the percussive role of rhythmic punctuation and 5) percussion as primary to the compositional process.

This document will be divided into five chapters, each dealing with one issue. In the first chapter, the relationship between winds and percussion will be explored. In the second and third chapters, the question of imitation of percussion by winds and imitation

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[10] Gary Cook, Teaching Percussion (New York: Schirmer Books, 1988) 9.

of winds by percussion will be addressed. Specific music examples will be the focal point for addressing the following questions.

1. What is the nature of the imitation? Does it concern:
    a. rhythm?
    b. texture?
    c. color/sonority?
    d. articulation issues of attack, decay, sustain or release?
2. What is the possible effect? Does this concern:
    a. compositional augmentation or diminution of a passage?
    b. a change in extra-musical meaning that would alter articulation, color/sonority, or the general interpretation of a passage?
    c. the function of the material as to its progress or egress in the overall evolution of the work?
3. How do conductors better facilitate the performance of these passages? Do they:
    a. suggest implements to be used by the percussion section to better compliment or differentiate these passages from the wind sounds?
    b. suggest alterations in articulation by the wind and percussion players to compliment or differentiate them from one another?
    c. suggest changes in dynamic expression to highlight the changing colors and extra-musical meaning of the passage?

Answers to these questions will serve as an interpretive guide for the wind conductor.

The fourth chapter will deal with an increasingly complex rhythmic vocabulary, which is no longer relegated primarily to the percussion section, but seen more increasingly in the wind scoring of many compositions. A role reversal between percussion and wind scoring will be investigated, one in which wind instruments are increasingly called upon for rhythmic punctuation and support. Rehearsal suggestions will be offered to deal with these complexities and options offered to aid in interpretation.

A final chapter will examine the use of percussion not only as the generator of themes or motives, but also as a dominating force within fragments of works and within works as a whole, thus suggesting a principal role in the compositional process. In this chapter percussion examples will be cited that introduce themes or motives or represent

material not paralleled by winds. Interpretive implications for the sounds produced, instruments used, and implements employed will be offered.

The emulation of sonority, texture, and timbre between percussion and wind instruments will be discussed throughout the document. Examples will be cited that suggest an intent by the composer to have percussion sonorities, textures or timbres emulated by wind instruments and vice versa. Interpretive options will be given to the conductor regarding a musical approach to these areas of concern.

The study will include but not be limited to: Edgar Varèse's *Hyperprism*; Vincent Persichetti's *Symphony No. 6*; Olivier Messiaen's *Couleurs de la Cité Cèleste*; Karel Husa's *Music for Prague, 1968*; Joseph Schwantner's *and the mountains rising nowhere*; David Maslanka's *Symphony No. 2, Symphony No. 4* and *Morning Star*; Dan Welcher's *Zion*; and David Gillingham's *A Crescent Still Abides* and *Heroes Lost and Fallen.*

The above works are significant to the wind repertoire, particularly those by Persichetti, Husa and Schwantner.[11] Furthermore, all of these works contain innovative percussion writing and stand with the works of Persichetti, Husa, and Schwantner as benchmarks for the advancement of percussion scoring.[12] The works by Maslanka, Welcher and Gillingham yield excellent recent examples related to this study. In addition, their writing for percussion is clearly of an advanced level and is representative of the innovations in percussion scoring discussed in the document by Pare. The inclusion of works by Varèse and Messiaen extends the study to two significant

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[11] Jay W. Gilbert, "An Evaluation of Compositions for Wind Band According to Specific Criteria of Serious Artistic Merit: A Replication and Update" (D.M. Dissertation, Northwestern University, 1992.)

[12] Pare, ii.

composers for winds and percussion. While their works have been studied by numerous authors, they have not been examined within the parameters of this paper.

Edgar Varèse is included because of his percussion scoring. While Pare does not include any of his works in the body of his study, he does cite Varèse's prominent place in the advancement of percussion writing. Also mentioned in his introduction as works that combine wind and percussion are *Hyperprism* (1923), *Integrales* (1925), *Ecuatorial* (1934) and *Deserts* (1954).[13] To be sure, Varèse's *Ionization* (1931), the first work for percussion ensemble, would be cause alone to investigate his contributions to percussion writing. *Hyperprism* was chosen because it is Varèse's earliest work for winds and percussion and because the ratio of percussion to wind instruments foreshadows the later work of Joseph Schwantner, where the size and use of percussion instruments takes on unparalleled proportions.

Also, an example of Varèse's work is included because much of his career focused on the liberation of sound. Varèse was part of a movement that sought to free tone color from its traditional role of clarifying pitch and rhythmic structures to make it an independent structural element. His experimentation with and use of percussion obviously played a large role in his quest for the liberation of sound, as did his use of combinations of wind instruments. His musical prominence, influence among his contemporaries, and innovative uses for percussion ground this study to the beginnings of twentieth-century contemporary percussion usage.

Messiaen's *Couleurs de la Cité Celèste*, (1963) is included because of its unique percussion writing, rhythmic vocabulary and use of percussion instruments in a soli role.

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[13] Pare, vii.

The latter usage is similar to, but predates, the third movement of Karel Husa's *Music for Prague, 1968*. Messiaen's purpose in using specific instrumentation was to evoke specific colors relating to the programmatic elements of the work. While difficult to assess the success Messiaen had in evoking these colors, it is possible to discuss how the sounds relate to one another under the guidelines of this study. *Couleurs de la Cité Celèste* yields excellent examples for comparing and contrasting groups of wind and percussion instruments.[14]

While many other works could be cited in this study, the above examples effectively illustrate how percussion performance can directly influence wind expression and how wind performance can relate to percussion expression through elements of sonority, texture, rhythmic vocabulary, articulation, and imitation.[15].

Texture is defined in this study as an identifying quality, such as thickness or thinness, transparent or opaque. The term will describe sounds that result from wind and percussion instruments used either separately or in combination. Texture will be discussed within the context of a given work, though it may be related between works where appropriate.

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[14] In the preface to the score for *Couleurs de la Cité Celèste,* Messiaen states: "The form of the work relies entirely on the colors. Melodic or rhythmic themes and masses of sounds and timbres are transformed like colors."

[15] For example, *Winds of Nagual* by Michael Colgrass has been noted by Pare to be a masterwork for the band repertoire. The innovations in its percussion scoring cited deal primarily with two elements: specificity of instruments and implements, and the structural or reinforcing role the percussion plays in the composition. While it can be agreed that Colgrass is very specific in his requirements for instruments, mallets and sonorities, he is not so much revolutionary as he is evolutionary. A reference can be made to Igor Stravinsky's *L'Histoire du Soldat* (1918). In this chamber work, Stravinsky is very specific about the type of mallet to be used by the percussionist and what instruments are desired. Furthermore, the fact that the percussion in *Winds of Nagual* takes on a more supporting or clarifying role rather than dominating or having equal status in the composition is cause to question the inclusion of this composition in this study. In addition, the role of the percussion in Colgrass' work can be further pre-dated to works like *Symphonie Fantastique* by Berlioz. Therefore, the work by Colgrass will not be included in this study.

A composition's rhythmic vocabulary will be defined as either being high, moderate, or low in degree of rhythmic activity and complexity. It should be understood that rhythmic activity is considered relative to the context in which it is seen in a given composition. For example, high rhythmic activity depends on material that precedes and/or follows a given musical passage. The rhythmic vocabulary could be described as punctuating, ostinato, mood altering (for psychological effect), or motion directing (creating tension or release). Of particular interest will be areas where wind players take on a high degree of rhythmic activity. In these instances style of articulation will play a decisive role in the interpretation of the music.

Articulation for the percussionist then, will be related specifically to the type of instrument being played in a given passage, the wind environment surrounding it and where applicable, the implement recommended by the composer.[16] How implements and instruments employed might impact the wind performance will be presented. The need for conductor knowledge about specific implements and instruments in the percussion section will become more apparent in this discussion. Composer Samuel Adler refers to this increasingly difficult task.

> The range and variety of percussion instruments in use today defies description or categorization. Composers invent new effects, and as fast as they can describe them, percussionists with uncanny skill build an instrument capable of producing them. The present state of the percussion ensemble is, therefore, an open-ended matter.[17]

Associated with articulation will be the subject of imitation and emulation. These elements lie at the heart of this project. It is difficult to separate imitation from

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[16] Where the composer makes no recommendations for implements to be used, a choice will be suggested. Regardless, an interpretation of the relationship between wind and percussion performers will be offered, based on one or more interpretive possibilities.

[17] Samuel Adler. The Study of Orchestration. (New York: W.W. Norton Co.,1982), 328.

emulation, as imitation often implies or leads directly to emulation. Discussing these elements individually, however, reveals more options for interpretation.

Imitation is defined as the recurrence of motivic, melodic, rhythmic, or thematic materials between wind and percussion instruments. These may occur in close proximity or may be disjunct in their placement. Imitation is often obvious, created through compositional repetition of some musical element, either in whole or part. Such scoring may imply a need on the performer's part to emulate the sounds, timbres and sonorities of a given musical segment.

Emulation of instruments will be considered as a technique employed to recreate sounds of a previously scored instrumentation. This technique will go beyond the mere repetition of materials and will deal more specifically with subjective styles of articulation, dynamic nuances, inflection, and quality of sound. Emulation in this context can be viewed much in the same way as the conductor uses vocalization of a passage as a model for players to mimic.

Interpreting how passages might relate (imitative or emulative) is critical to developing a clear imprint of a given work. A discussion of how issues of imitation and emulation can impact musical meaning will be presented. The above interpretation of emulation and imitation can imply that this subject could be discussed not only within a given work, but between a variety of works, allowing performers to borrow from techniques and interpretation gained from other experiences with wind and percussion repertoire.

It should be noted that while performance analysis is the primary goal of this document, it is not intended that the analysis be comprehensive in each work cited. Only

examples that illustrate the issues presented in this study will be analyzed. Through these examples, conductors may a find a method that can be applied to other works.

A number of conclusions are anticipated. First, a more equalized role between the wind and percussion in the compositional process will be revealed. Second, how percussive sonorities can be emulated and imitated by wind instruments and vice versa will be offered. Third, a heightened awareness for the use of percussion instruments and wind instruments in the compositional process will be highlighted. Fourth, the need for conductors to continue to expand their interpretive abilities will be presented.

The chronology of the selected works will illustrate an evolution of percussion writing in twentieth-century wind literature. Examination of wind and percussion writing in these works may yield an extended vocabulary for conductors, providing alternate methods of interpreting wind and percussion combinations.

An interpretive guide will establish general maxims that reflect a closer correlation between percussion and wind expression. It will also suggest that the influence of percussion is felt not only by the wind performer, but by the composer, listener and educator as well. The relationship between wind and percussion performance demands greater attention and understanding by the conductor. The importance of taking greater care in the education of the composer, percussionist and conductor can been seen as axiomatic.

Chapter 2

The Relationship Between Wind and Percussion Instruments

The idea that percussion instruments function to support wind instruments is based historically on usage, and it is in this supportive role that we most often associate percussion instruments. Because of these traditions most conductors, keenly aware of blend and balance, primarily concentrate comments regarding volume to the percussion. Further direction may focus on style of attack or where to place the stroke on the instrument. To achieve a desired balance conductors commonly ask percussionists to listen to a particular wind instrument or group of wind instruments, the reverse being rare. In contrast, when conductors ask wind players to listen to the percussion, they likely refer to timing or rhythm rather than balance. Such instruction can relegate the percussion to the status of ensemble metronome, leaving missed opportunities for more musical outcomes.

More importantly, what conductors ask their performers to do in the above circumstances deals more with emulation than imitation. Blend, balance and timing have to do with ensemble sensitivity to attack, volume, inflection, direction of line and release and can be dealt with equally well in the percussion. Conductors who approach percussion in these terms can explore more possibilities through emulation of wind sonorities. But before one can determine if emulation should take place, understanding simple imitation and the implications that may be drawn from such occurrences is

necessary. Finding instances of imitation and determining the degree of emulation inferred can only be discovered from careful score study that considers structural elements, sonority, timbre and attack. Donald Barra reminds conductors of the less artistic results without this step.

> It is a cliché in our profession that a performer can accurately reproduce all of the notes of a composition and still produce very little music. It is generally understood that the reproduction of sounds is only the first step in any serious interpretive effort. To produce significant results, the performer must bring to light those expressive qualities and dynamic characteristics that are contained *within* the structure. His ultimate goal must be to translate the musical symbols into vibrant, meaningful patterns of motion that will reach directly to the heart and mind of the listener and trigger his intuitive positive response.[18]

After a formal exploration of the score, it is recommended that comparative analysis between wind and percussion parts begin with a thorough examination of the percussion. Viewing the percussion parts as a separate musical entity will aid the conductor in seeing them as a more integral and equal part of the compositional process. Given this perspective, a conductor will more likely develop a deeper understanding for the score and possible interpretive choices.

Areas of high percussion activity are of primary importance for examination. Of secondary interest will be areas of thin texture. Both areas may be divided into two parts: tuneful percussion usage and indefinite pitch percussion usage. Each part needs to be studied for rhythmic design, harmonic design and phrase structure, and the interplay of the two elements. Analysis should concentrate on rhythmic design, harmonic design, phrase structure and the interplay of those elements. Other areas can similarly be examined, also independent of the wind parts. Once an overview of the percussion parts

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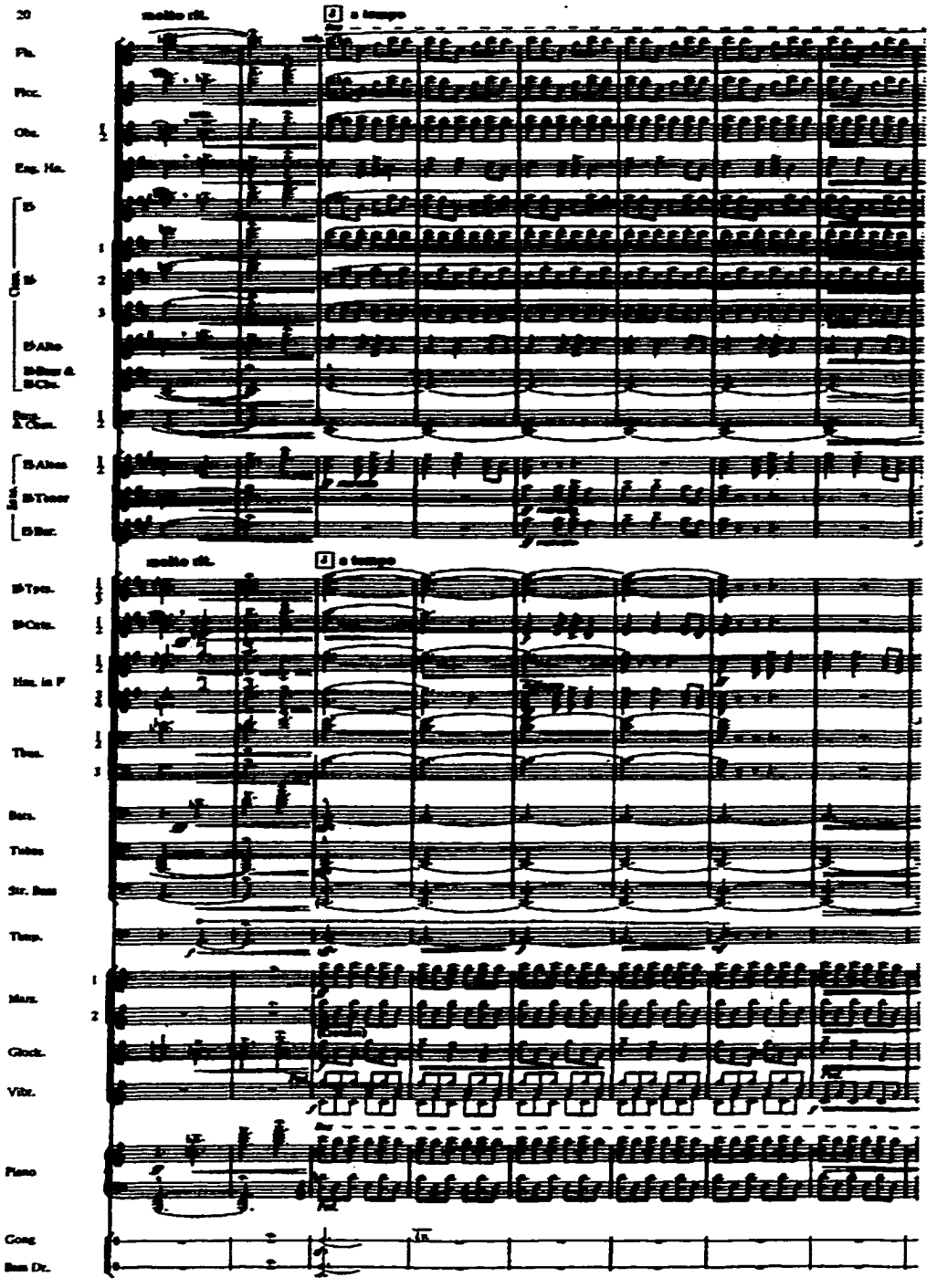
[18] Donald Barra. The Dynamic Performance: A Performers Guide to Musical Expression and Interpretation. (London: Prentice Hall, 1983), vii.

is complete, the conductor returns to each passage, comparing rhythmic design, harmonic design and phrase structure to reveal common ground between the percussion and wind parts.

When such comparison is complete, the conductor may identify the role each percussion part assumes. Some instruments may add dramatic effect through colorful cymbal crashes, bass drum rolls or attacks. Others may provide clarity, highlighting a given instrument or passage as in a bell part that coincides with a flute or piccolo line either in part or whole. The role may be supportive with the part more *to the stern* as opposed to the Grainger-ism *to the fore* as in the rhythmic punctuation of a snare drum part in a given passage, clearly non-soloistic in nature and not of primary importance to the musical line. The parts may function as primary to the compositional process. In these cases the given instrument is clearly the leading voice or is at least an equal entity in the production of the musical idea as in passages where pitched percussion initiate or complete a melodic/harmonic statement. Percussion of indefinite pitch may also fulfill this role, especially if the instruments utilized have an implied melodic contour. Of course, any instrument or group of instruments can fulfill multiple roles, either in the same passage or between passages in a given piece.

It is imperative that a role determination be made, as the instrument function can impact dynamic response, style of articulation, mallet choice and phrasing. In the case of percussion fulfilling the role of dramatic color, how that color is portrayed directly relates to the line that precedes it. For the conductor, there are three basic choices. The first choice allows the intensity in the wind parts to determine the intensity of response in the percussion. Example 2.1 illustrates the logic of this choice since the

Example 2.1: Ron Neslon's *Mediaeval Suite: "Homage to Perotin"* mm. 185-192



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percussive element is part of the accompanimental color of the upper woodwinds. The percussion color would seem out of place if it were too soft or too loud. The difficulty of this approach is that it relies upon the performer to determine the appropriate response and does not account for physical considerations such as where the percussionist is placed in the setup and what acoustical considerations may influence what is heard. An accurate balance may be made by the conductor and would include determination of desired tone quality.

The second choice is to make the wind players aware of the upcoming entrance by the percussion and the necessity to build appropriately to this point of arrival. The winds' goal is to prepare the phrase climax, creating musical tension and casting the percussion entrance as a point of release. This approach may heighten performance consistency in that it defines the function of the musical passage, giving the performers a meaningful reference. While less vague than the first choice, its focus is on the crescendo made by the winds, primarily motivated by the anticipated volume of the upcoming percussion color.

While both alternatives lead to a more cohesive climax, a third option is suggested. In order for the percussion to provide a more artistic impact and the winds to create the desired tension, a psychological concept of the phrase must be presented and understood. Developing a psychological concept of a passage of music requires guidance from the conductor. When a concept is revealed, however, the forces combine to create a deeper emotional meaning. Understanding the psychology of the music lies therefore at the heart of interpretation and the basis for such understanding requires the development of listening skills.

Example 2.1 illustrates only the page of score where the percussion enters. It would be narrow-sighted to make a musical decision without understanding what precedes and follows this passage. Furthermore, performers need an awareness of the mood that is being displayed, the formal importance of the phrase and the psychological impact at its climax. *Ritardando, crescendo* and articulation are also influenced by the psychology or inner meaning of the music. Responsibility for the shape and timing of the passage rests primarily with the conductor. Conveying this information through conducted gestures aids in guiding expression, but ultimately, the conductor and players must listen, evaluate and collaborate in reaching a clear gesture that results in a psychological impact.

Listening is an active and constant task in a musical ensemble that must be distinguished from hearing. Meaningful listening requires that both the performer and conductor evaluate sounds not only for blend, balance and intonation but more importantly, for their expressive qualities.[19] When the performer and conductor combine this process with an understanding of each instrument's role and relationship in the compositional process, they are better able to communicate the composer's intent. Author Erich Leinsdorf discusses communicating the intent of the composer and being true to the musical meaning.

> There is always the danger that the overheated imagination of the score-studying musician will find more in the score than the composer put there. But in fact we can usually find more evidence of genius in great music the more we search. Although the discoveries a diligent conductor makes may pass by audiences unnoticed in performance, they inevitably deepen his understanding. Moreover, the satisfactions of the search make his lot an enviable one.[20]

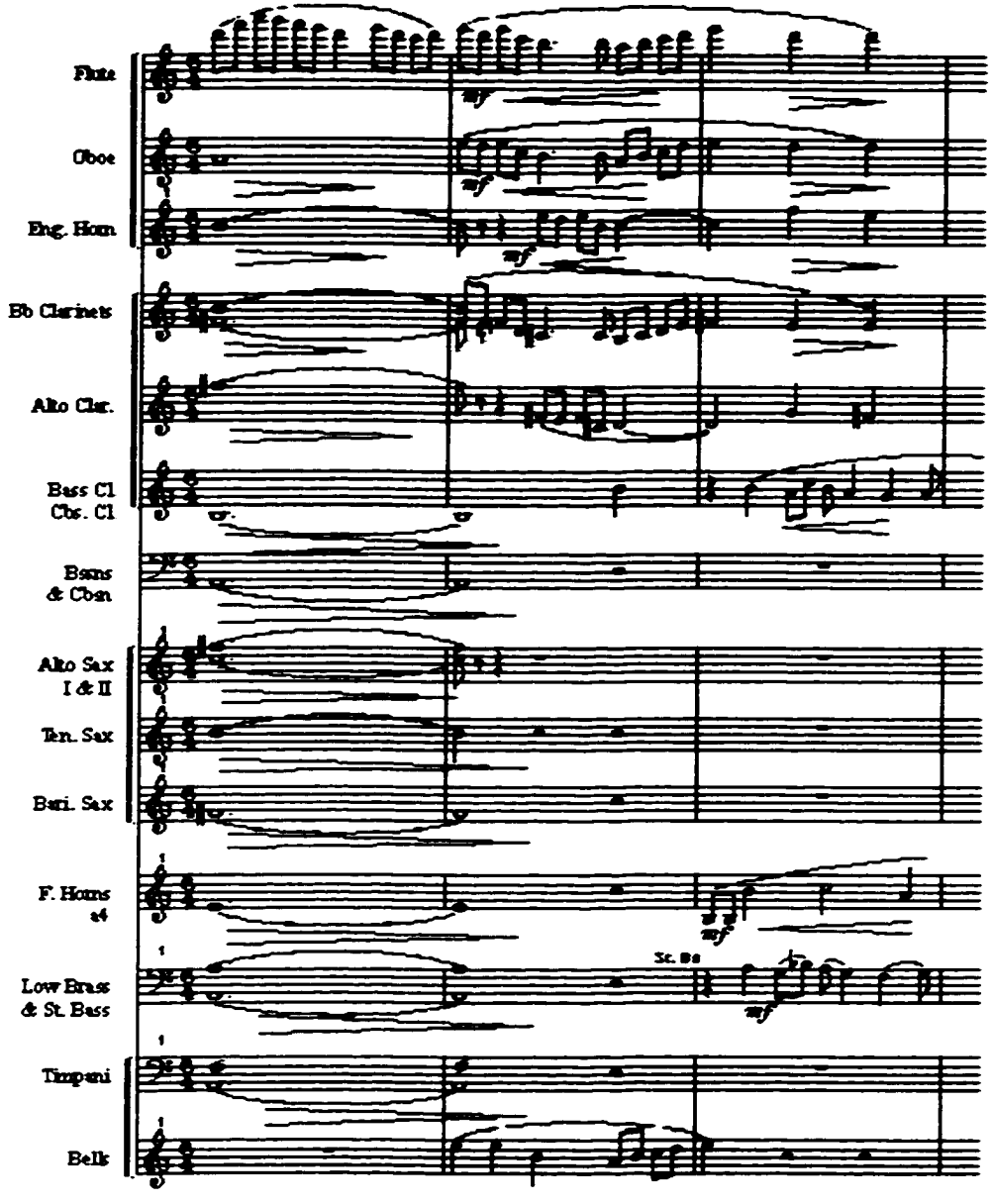
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[19] Edward Lisk. The Creative Director: Intangibles of Musical Performance. (Ft. Lauderdale, FL.: Merideth Music Publications, 1996), 25.

[20] Erich Leinsdorf. The Composer's Advocate: A Radical Orthodoxy for Musicians. (London: Yale University Press, 1981), 27.

And what of percussion that fulfills a clarifying role in the score? Here, the conductor is faced with different options. Example 2.2a illustrates a mallet percussion part in combination with a solo flute. The conductor must determine how to best blend these two sounds. He most often will deal with volume and, secondarily, choice of mallet in an effort to allow the flute part to be prominent. By viewing the percussion part in its traditionally supportive role the opportunity for a more artful performance may be missed. The subtlety and gentleness of the melodic line and the high tessitura of the flute part suggest that the mallet instrument sound be full, warm and lightly articulated. The bells add a shimmer or crystal-like quality to the line. In fact, when carefully balanced and blended, this combination creates a new sound, not readily distinguishable as flute and bells. To achieve this new sound, the flute performer emulates not only the color of the bells, but the attack, body and decay of each note. The percussionist, considering the lyric, smooth flow of the flute part would emulate the *legato* nature of the flute, choosing a mallet that does not emphasize the attack of the note but provides full resonance.

Example 2.2a: Ron Nelson's *Medieval Suite*, movement III, "Homage to Machaut,"mm. 17-19. The use of bells in a supporting or clarifying role.

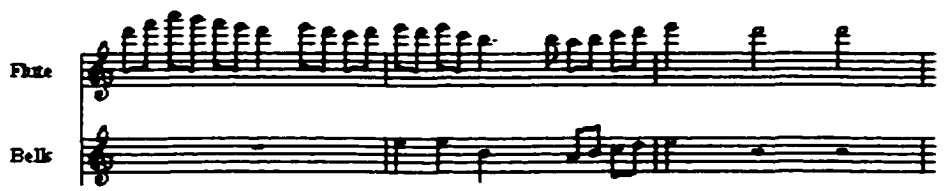


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The concept of creating a new single sound through the combination of two or more different instruments is crystallized in *Zyklus No. 9* by Karlheinz Stockhausen. The composer specifically calls for simultaneous attacks of two instruments to create new sounds.[21] Stockhausen's concept is also rooted in the music of Edgar Varèse whose interest in vertical sounds rather than horizontal, created new combinations of sounds.[22]

Example 2.2a illustrates bells functioning to clarify the flute part. As a point of discovery this role determination is adequate, but it is inadequate to identify the purpose of the bell part solely as one of clarification. The conductor's responsibility is to explore the many ways these sounds influence one another and to offer an appropriate performance choice in this musical context. This can be done a number of ways. Consider only the flute and bells from the previous example without the written dynamics and slur indications in the flute part. (See Example 2.2b)

Example 2.2b: Ron Nelson's *Medieval Suite* movement III,"Homage to Machaut," mm.17-19.



If the dynamic for the flute was *mezzo piano* or less, and the articulation employed was slurred, one might assume that the bell part would be played with a medium to soft mallet in a dynamic beneath the flute. We might also assume that the flute would be dominant in the texture, not allowing the articulation of the bells to

[21] Karlheinz Stockhausen. Nr.9 Zyklus. (London: Universal Edition, 1960), Performance notes.
[22] Louis Norton Varèse. A Looking Glass Diary, vol. 1. (New York: W.W. Norton and Co., 1972), 211.

obscure the smoothness of the flute line. This assumption makes musical sense since the bells perform only a sketch of the melody. Furthermore, one might consider playing the bell part with a *legato* stroke, angled toward the top of the mallet ball at the point of attack to diminish the brightness of contact. With this interpretation, the bells would merely support or clarify the flute line. Given the composer's dynamic of *piano* with no crescendo in bells, this seems logical. However, one is left to observe that the two simultaneous sounds do indeed create a homogenous sound. If the sounds are too readily recognizable as separate instruments, an important possibility of expression is overlooked.

Another approach to blending the flute and bells from the previous example allows for the reversal of the instrument's perceived role or to allow th eflute to ad color to the bells. Interpreting the slur indication in the flute part as a phrase marking, it could be inferred that a light, nearly imperceptible articulation could be executed by the flutes or even a portion of the flute section. Such a light attack would simulate the natural contact sound of the bell mallet. If the flute takes on this role, it melds with the bell sound adding warmth and resonance while the attack inherent in the bells gains prominence. With the flutes emulating the bell attack a clinging quality emerges in the line. To be effective, the conductor and flute player must listen carefully and evaluate the attack, body and sustain of the bells to determine a possible style of flute articulation.

It is not intended that this option be used to completely alter the obvious articulation written by the composer. Some alteration of articulation may be warranted to achieve a more artful blend of the two instruments. When two or more flute players perform the same passage, one can continue in the style of a slur while the other adds the

light tongue. The effect of the slur is retained while more energy is given to the performance. Example 2.2c illustrates the suggested revision of articulation in this case. The accents indicate a slightly stronger tongue and highlight the important motion creating elements of the passage.

Example 2.2c: A possible articulative interpretation of the flute part based on the sound of the bells being emulated.



There is precedence in vocal music for this interpretation. Consider a slur over a syllabically set vocal text. The slur in this setting is a phrase indication and does not indicate a softening of diction. Even in a melismatic setting, if text or syllable changes are injected into the passage, no softening of diction is implied by a slur. In a similar manner, the slur over the flute passage may be interpreted as a phrase marking, allowing the flute to interpret articulation. It may be assumed the enunciation of this line should blend with the other instruments performing it, and so emulation of the bells is logical. This interpretation may also be implied by the chant-like nature of the passage. The desired result is a light, connected articulation that adds a pointed quality to the expression.

As in any interpretation, compromise is needed if the creation of new sounds is to be achieved. The player's responsibility is to understand first the meaning of the musical line and then to develop the required technique to execute it. Understanding other instruments, anticipating how they might perform the passage and the willingness to be influenced by other sonorities can be fostered from the podium. The conductor who is

able to foster such evaluative skills within the ensemble will achieve a more artful performance.

Acknowledging the combinatorial result of the parts is crucial, as is determining which of the parts might best represent the psychological meaning. Having made such a determination, the conductor would incorporate these concepts into a desired musical expression. Relying upon the aesthetic response, the drama or scene suggested by the music or an existing program, often is a good place to start.

When percussion instruments are used in a role primary to the compositional process, the conductor should investigate the impact on the wind section. In cases where pitched percussion state themes, there can be correlation between attack, decay and overall style of line.[23] Because of the relative clarity of melodic lines, such associations are only moderately difficult to accomplish.

There are other considerations that impact the interpretation of the line. The conductor might consider proximity of the percussion statement to repetition by the winds, either partial or complete. When a statement of theme by winds immediately follows a percussion statement, there is greater need for emulation. The converse is also true. This is due to a heightened recognition of the how the statements relate. We listen to music in a linear fashion so that as events unfold we form relationships after the fact. Musical statements repeated between winds and percussion in close proximity are often developmental, with timbre changes being sufficient to affect musical meaning. To increase expression in these situations, the conductor considers explicit and implicit

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[23] We are not considering issues of release here since percussion sonorities are not often "released" in the manner with which we associate winds. While issues of release certainly exist, particularly when the percussionist makes use of rolls, it is more often issues of decay of sound in the percussion family that should be considered and compared to the wind player.

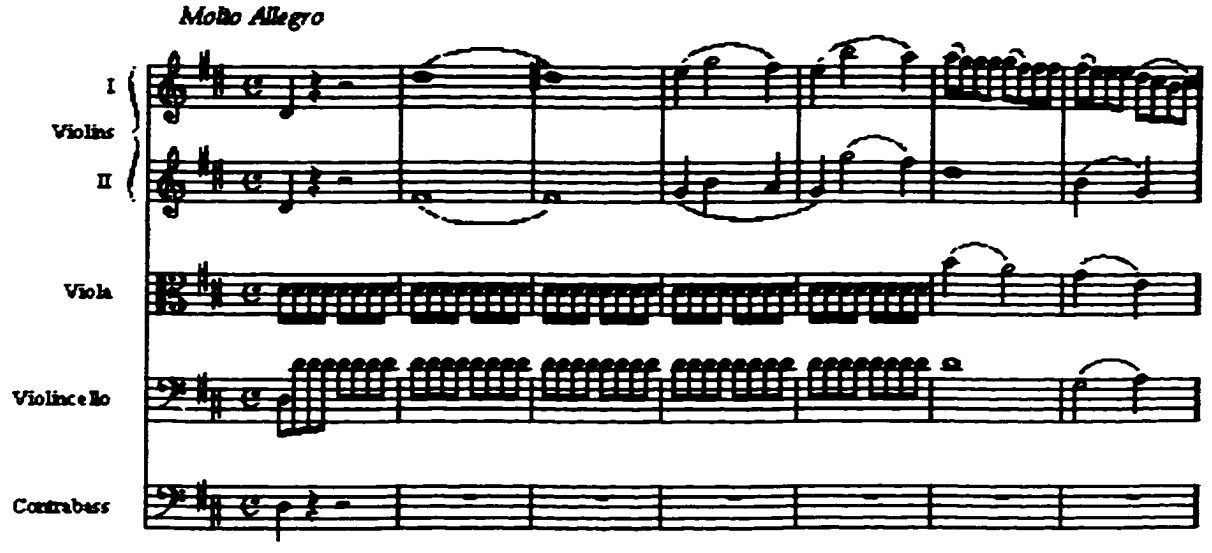
articulation, paying special attention to separation of tone, inherent inflection of line and type of percussion instrument used in the statement (i.e. xylophone, marimba, vibes, bells, crotales, etc.). When distance between these repetitions is increased, other possibilities for interpretation may present themselves. Such differences may be the result of development or evolution of themes and can be discovered through analysis.

Mozart masterfully reworked themes and motives, particularly in his operas, so that slight changes in musical character could reflect or anticipate dramatic changes to the staged characters. In examples 2.3a and 2.3b two statements of a theme used in the opera *Don Giovanni* (1787) are outlined. Their differences reflect the changes that have taken place through the course of the opera and are typical of Mozart's ability to manage his musical materials.

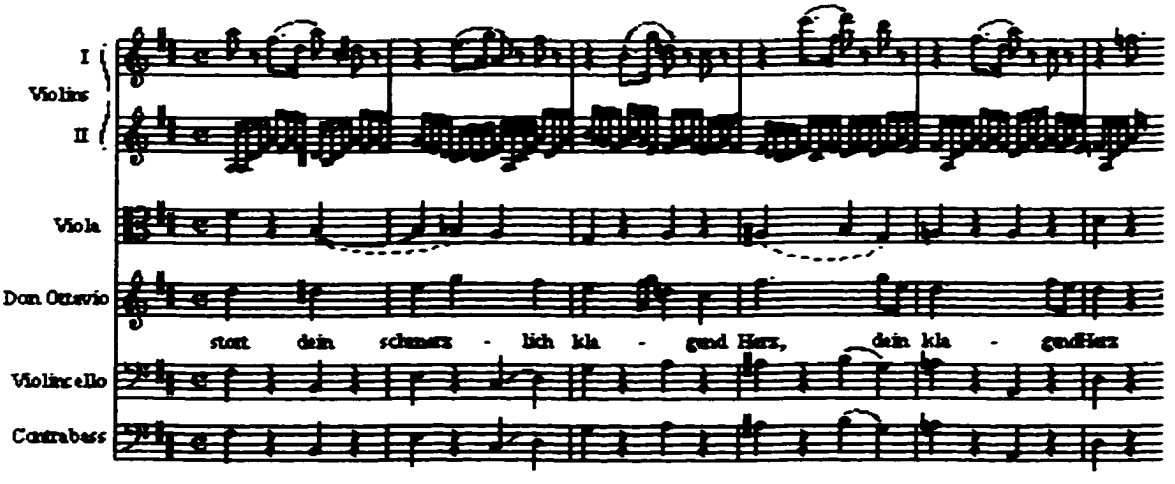
Example 2.3a is from the allegro section of the opera overture, which after an ominous opening, shifts from that darker to a more mischievous mood. This section follows sonata form reminiscent of a Haydn symphony. The material in example 2.3a is part of the first theme, and suggests Don Giovanni's somewhat pushy and swaggering character. Example 2.3b illustrates how Mozart makes use of this theme later in the opera. Note the differences in the accompanying figures as well as the drifting chord progression (in the key of D major at this point, though a modulation to d minor is about to take place). That these changes can occur between winds and percussion may seem obvious, but they are often missed when percussion parts are not considered in this manner. Many conductors, able to identify subtle changes in thematic musical meaning among winds are uncomfortable considering percussion in the same light. There is no

doubt, however, that aesthetic experience in performance is enhanced when all elements are considered equally.

Example 2.3a: *Don Giovanni*, by W.A. Mozart. Opera Overture, mm. 81-87. First theme from the Molto Allegro section.



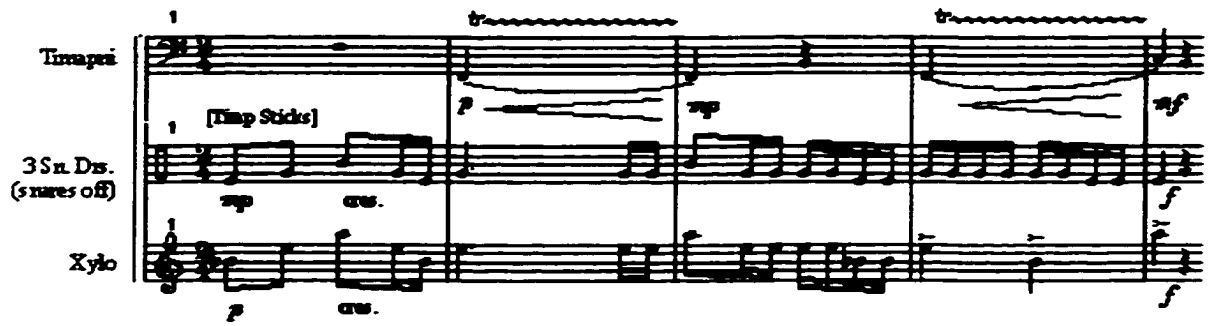
Example 2.3b: *Don Giovanni* by W.A. Mozart. Second Act, No. 19 Sextet, mm. 41-45. The character of Don Ottavio makes use of material first heard in the Opera Overture.



Though a lack of pitch may make this task more difficult, when indefinite-pitch percussion state themes, the responsibility of the conductor remains the same. This may be clarified through Vincent Persichetti's *Symphony No. 6*. Example 2.4 illustrates the

symphony's allegro theme as first stated by percussion. The theme, derived from the opening adagio where it is scored in the low winds in measure 3, appears in the three snare drums in measure 21. The xylophone reinforces the theme, though not through pitch content, while the contour of the snare drum part mimics the theme. The clarinets restate the theme beginning in measure 25. (See Example 2.5.)

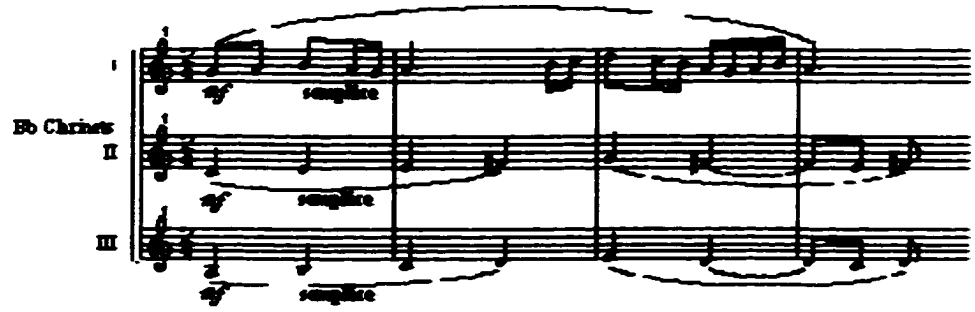
Example 2.4: Vincent Persichetti's *Symphony No. 6*, mm. 21-25. Allegro theme from movement 1.



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The slurred articulation in the clarinet may initially suggest no correlation between the parts beyond the shared rhythmic structure. Such an evaluation might suggest that the function of the percussion is to affect the tempo change and create a different psychological environment, one that contrasts the brooding opening adagio. As important as these factors are, the impact the percussion can have on the clarinet entrance should not be overlooked. The conductor's responsibility to illuminate the relationship between these two entrances relates to the previous discussion regarding proximity of repeated thematic statements.

Example 2.5: Vincent Persichetti's *Symphony No. 6*, mm. 25-28, movement 1. Clarinet entrance of the Allegro theme.



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A sense of melody is possible in the snare drums, largely through dynamic nuance. For example, the following dynamic shading might be possible: a slight crescendo through the first three eighth notes followed by a slight, but immediate drop of dynamic and crescendo across the bar line. Furthermore, a pizzicato quality can be achieved by using a medium felt timpani mallet, striking the drums slightly off center. The dynamic contrasts affect a sense of melody, while the mallet choice and playing area provide a round, energetic tone. All of which, by virtue of being first stated, should impact following statements of the theme.

It is important also to note Persichetti has used percussion extensively since the opening of the movement. Largely via a dense rhythmic vocabulary, percussion present structures that will appear throughout the symphony. The prominence of the percussion and its rhythmic vitality has been firmly established by the allegro at measure 21. The issue of influence and the need for emulation is therefore unquestionable.

To facilitate an artful blend between the percussion and clarinet, the following suggestions can be made. First, consider that the composer has already given us an

indication about how these sounds relate through his orchestration. The whole of the adagio may be described as dark, brooding and ominous in character. To facilitate this, Persichetti chose his percussion instruments and implements to be bass drum, tenor drum, tom-tom, three suspended cymbals[24], three snare drums related to tenor, alto and soprano voices, xylophone, triangle and tambourine. The majority of the percussion writing in the opening adagio is for membrane percussion, with instructions to play these drums with timpani mallets. The sound will be *legato* in attack and less bright than if struck with a snare drum stick, which might be a player's first choice for these instruments. All of this logically fits the dark mood of the introduction.

From this observation and analysis of the introduction, how the statements between the snare drums and clarinets may relate is revealed. Since the type of mallet required for the percussionist provides a dark and *legato* quality, it makes sense not only that the wind instrument stating the theme should be indicated as slurred, but that the choice of instrument should be clarinets. Imagine the startling difference if this line were placed in the flute or oboe.

The observant conductor and percussionist should consider the style of stroke to enhance the *legato* style, as well as the appropriate playing area. If too close to the edge of the drums, a higher, more resonant tone will be produced. If directly over the center of the drum, a less resonant dull tone will result. The best choice would be somewhat off center to afford a round, full sound. As to the style of stroke, this is best accomplished with a fluid motion of the wrist, not unlike a *legato* gesture used by a conductor.

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[24] Persichetti does not specify size or type of cymbals. One solution is to have the cymbals resemble the pitch differences in the first three notes of the theme, with the sizzle cymbal being the lowest of the three pitches.

Attention to a relaxed hand position is also called for to ensure that no tension is present that might lead to a *staccato* articulation.

Furthermore, the tuning of the snare drums can impact the sense of melody. The theme is stepwise in motion, though in the percussion notation, a wider interval may be interpreted.[25] The conductor and percussionist should experiment with tuning among the drums since size and constructions of drums will vary, affording uniqueness to every performance situation. In general, scalor intervals do not speak as clearly in percussion of indefinite pitch, especially if the rhythmic activity of the part is high and the drum size is similar, which would be the case when using three snare drums. Therefore, a minor third between each drum may prove helpful in clarifying the line. Greater clarification may be obtained by using a combination of wooden and metal drums of varying depth and diameter. Where this is possible, a smaller interval may be effective in communicating the theme. Ultimately, the choice and tuning of instruments, in combination with the mallet used, should not only reflect the darkness of the opening section, but the warmth and uplifting mood of the allegro as well.

Having made these discoveries, it becomes the conductor and clarinetist's responsibility to perform the second entrance of the theme with similar expression. Much of the interpreted warmth is inherent in the register given to the clarinet. A more complex issue concerns the slur, which may cause the clarinetist to inadvertently diminish the rhythmic vitality of the passage. This vitality must be captured without the use of the tongue.

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[25] The interval used on the three-snare part was probably more for convenience in reading than to indicate a pitch relationship. But Persichetti left no definitive instruction. We can, however, infer that the idea of thematic contour was of great significance.

Here, the concepts of note grouping as established by James Thurmond become useful.[26] Such consideration is important not only for the clarinetists and conductor, but for the percussionist as well. To summarize the concept of note grouping is a difficult task, but the essence of the concept lies in understanding the development of motives as seeds of rhythm and melody, the concept of arsis and thesis, and the impact of the barline. Further, one must understand the process of note grouping as a form of movement analysis. Briefly stated, inherent in every musical work are notes that are motion-creating or directing. These can be seen on the macro and micro levels, arising from pitch and rhythmic context and serve, as in language, to punctuate the musical phrase.

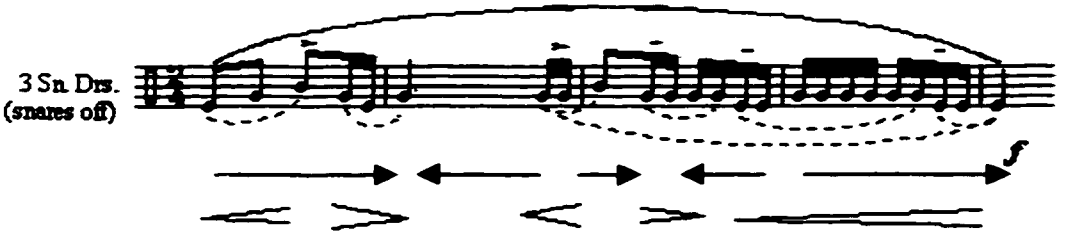
Applied to the snare drum in the example from Persichetti, we find inherent emphasis arising from the rhythm and tessitura. Example 2.6 illustrates the snare drum excerpt with phrase markings and implied accents related to the concept of note grouping. Notice an implied accent on beat two in the first measure. This accent falls on the highest pitch of the three drums. It can be subtly approached with a crescendo through the first two pitches and is interpreted less as an abrupt accent and more as a leaning emphasis. When expressed this way the third eighth note provides lift, allowing the following sixteenth notes to tumble downward and provide release of the previous tension created by the crescendo. In example 2.6, increased tension is illustrated with right-facing arrows and moves towards release illustrated with left facing arrows. The large slur indicates phrase length, while the smaller slurs indicate phrase members. These smaller units

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[26] See James Thurmond. Note Grouping. (Camp Hill, Pennsylvania: JMT Publications, 1983), 25-33.

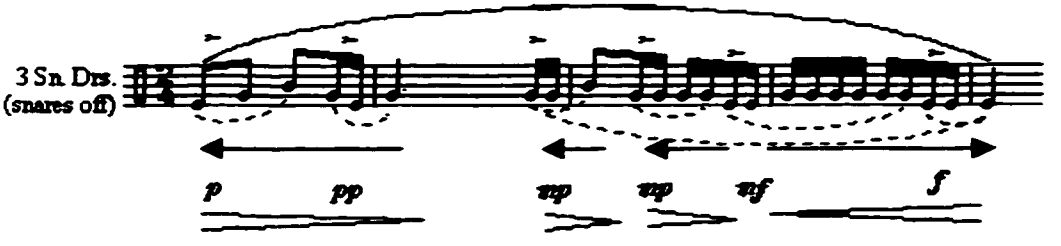
become important points in creating inflection and higher musical meaning and, while Persichetti indicates a crescendo from the beginning of the phrase to the entrance of the clarinet voice, these smaller slurs indicate where micro dynamic shapes may be considered. One possible expression of these micro shapes is demonstrated below the staff in example 2.6 with crescendos and decrescendos.

Example 2.6: Persichetti's *Symphony No. 6,* mm. 21-24. Applying the concept of note grouping to the three snare drums.



There are other choices of expression that could be applied to this phrase. Considering the slurs as a pianistic gesture it becomes possible to view each beginning note of a slur as being more weighted. If this choice were made, the conductor and performer would need to establish a hierarchy of all accents. Example 2.6b offers this alternative interpretation. A hierarchy of accents is documented with an imposed dynamic at the beginning of each slur. Again, tension and release are indicated with arrows and an overall dynamic shape is indicated with *crescendi* and *decrescendi.*

Example 2.6b: Persichetti's *Symphony No. 6,* movement 1. An alternate interpretation of the snare drum part based on the use of pianistic gestures,mm.21-25.



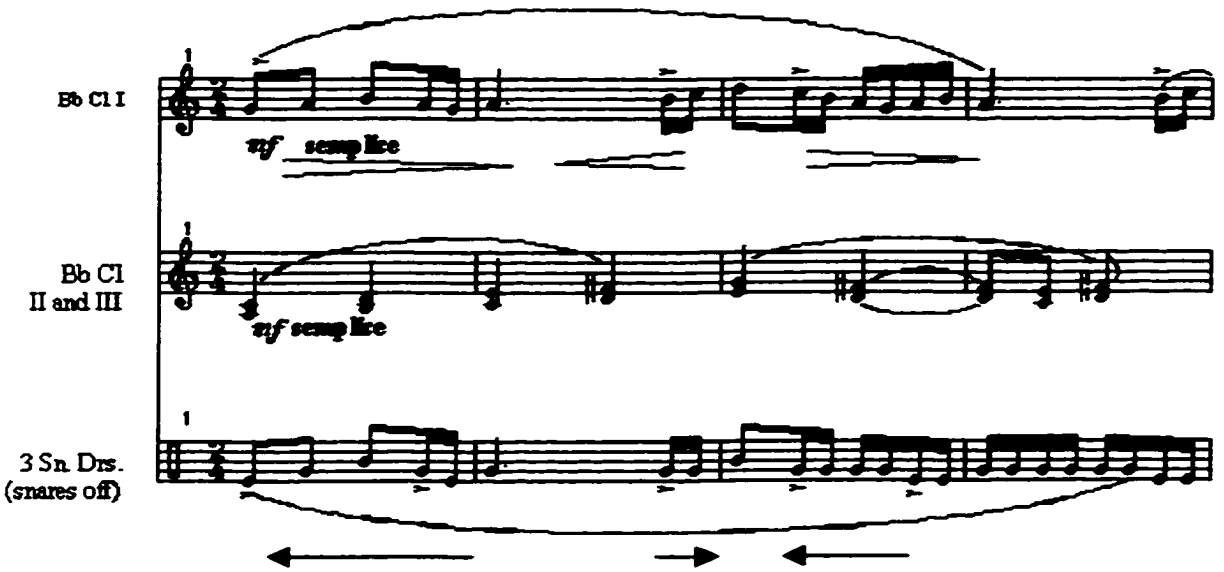
The previous interpretation presents a few difficulties. The first involves making use of the diminuendo to affect the pianistic gesture. There is a danger that, if taken too literally, these diminuendos will prohibit the actual crescendo Persichetti intended. However, if taken as benchmarks and viewed linearly, this need not be the case. Also problematic is dynamic shading within a given range. Specifically related to the two *mezzo piano* dynamics in the passage, the conductor might consider slightly shading these two seemingly identical dynamics. Applying the concept of note grouping, a conductor might choose to emphasize the first of the two dynamics, creating a sense of arsis in the larger phrase. This places the second *mezzo piano* dynamic in the role of release.

This discussion may appear to create a highly managed performance for the percussion. The result, however, is that the clarinetists should emulate the percussion with all of its inflection and energy. While the clarinetists would not have the advantage of articulating to achieve greater energy and direction, there is a possible physical response that could assist emulation. With a *pesante* approach to the finger action on the keys, the clarinetist can approach the psychology of the phrase. The *pesante* action becomes a physical reminder, a kind of drumming on the clarinet. Combined with knowledge of note grouping and evaluative listening skills, the dynamic inflection of the passage as the percussionist expresses it can be emulated. The addition of breath accents within the phrase may also reinforce direction and emphasis.

Another of the conductor's responsibilities is to determine the relative import of the explicit and implicit inflection in the phrase. Comparing the expressive nature of the three snare drums to the five pitches used by the clarinet will clarify these decisions.

Since the snare drum part is limited to three sounds, it might be considered a skeletal expression, highlighting the most essential aspects of the passage. The clarinet's added notes may act as embellishment to the percussion, providing focus. Through comparative analysis the conductor can make clear determinations about critical inflections. One possible solution is illustrated in example 2.7 where the snare drum passage is presented below the Bb clarinets. Notice how greater motion is created in the clarinet part in the scalor flourishes and how the second and third clarinets provide motion through the dotted quarter notes. Also, note the similarity of inflection between the two instruments.

Example 2.7: Persichetti *Symphony No. 6*, mm. 25-28. Clarinets and snare drum part illustrating common gestural possibilities.



To use a colloquialism, performers and conductors do not want to "put the em-**pha**-sis on the wrong sy-**lla**-ble." In music, as in speech, meaning can be lost or misconstrued if the punctuation or emphasis is misplaced or ignored. Read a small passage from any book purposefully removing the punctuation and it quickly becomes apparent that the meaning of the passage is untenable. Misplace the punctuation, adding

commas where none existed, ending phrases in question marks or exclamation points rather than periods and minimally the meaning changes, if it is not completely lost. By correlating each musical phrase to verbal inflection, a hierarchy of structures may evolve which will assist in determining critical points of motion and rest, tension and release, strength and weakness. As this hierarchy develops, musical attributes can be applied that will enhance the inflection of the passage. Interpretation is dictated first by the composer through explicit markings and, second, though just as important, internally by the music through suggested relationships from note groupings, rhythmic structures and linear and vertical content. Therefore, when a score is completed, possibilities of interpretation beyond those intended by the composer may exist. Development of those possibilities through firm theoretical and historical knowledge lies at the heart of interpretation.

Chapter 3

Imitation and Emulation of Percussion By Wind Instruments

With an understanding of the function percussion fulfilled historically, an examination of how wind instruments can be influenced to imitate and emulate percussive sounds and sonorities may begin. First, an examination of scored imitation of percussion by wind instruments may prove valuable. Recall that scored imitation occurs primarily in close proximity, where one phrase, phrase fragment, motive or other musical gesture is immediately repeated in part or in whole. Webster's Collegiate Dictionary defines imitation as "the assumption of the modes of behavior observed in other individuals."[27] This definition is accomplished musically through ordered repetition of pitch and rhythm and includes the possibilities of rhythmic augmentation or diminution and embellishment of pitch. Imitation in these terms lies solely in the hands of the composer. As the conductor identifies imitation, he necessarily attends to rhythm, dynamic, articulation and tone. It is a relatively simple matter to ensure that imitation at this level is accomplished, however, there is a point of departure where distinction between imitation and emulation becomes necessary.

Emulation demands a deeper evaluation process. Webster defines emulation as "ambition or endeavor to equal or excel others (as in achievement)."[28] It could be implied, then, that imitation is meant to mirror a passage and emulation is meant to expand or redefine a passage. Further, emulation may be understood to evolve from

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[27] Webster's New Collegiate Dictionary, (Springfield, MA: G. & C. Merriam Co., 1981), 567.

imitation, requiring more than mimicking rhythm and pitch, delving more deeply into the psychological expression, taking on characteristics of tone and inflection and offering musical enhancement rather than repetition. Emulation can therefore take place with distance between statements and does not rely on close proximity to be effective. Emulation can be accomplished between instruments even when their material is dissimilar.

Employing emulation between winds and percussion requires a new means of relating to percussion, one that rejects the older interpretation of percussion being merely supportive. To clarify this, it might prove fruitful to investigate the work of Edgar Varèse, and his extensive use of percussive.[29] In Varèse we see the essence of sound-scaping, a technique which can likened to painting where color and texture become more dominant than the depiction of any one object. In a musical sense, sound-scaping involves the projection of musical colors into space. This concept will be defined more thoroughly in a later chapter.

Varèse understood that sound-scaping would be best achieved through the use of a wide variety of percussion instruments. In *Hyperprism* (1923), Varèse introduced new and unusual percussion instruments. These included an Indian drum, slapsticks, lion's roar or string drum, siren, Chinese blocks, ratchets, anvils and a variety of cymbals. More traditional percussion instruments are present in the score and include bass drum, snare drum, tambourine, sleigh bells, tam-tam, crash cymbals and triangle. In all, the percussion parts required nine performers, but Varèse recommended a tenth optional part

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[28] Opcit, p.370.

[29] There are only three works in Varèse's repertoire that do not make use of percussion. They are *Octandre* (1924), *Density 21.5* and *Poème èlectronique*.

to assist players 2,7,and 8. The wind instrumentation numbered nine individuals consisting of flute and piccolo, Eb clarinet, three horns, two C trumpets, tenor and bass trombone.

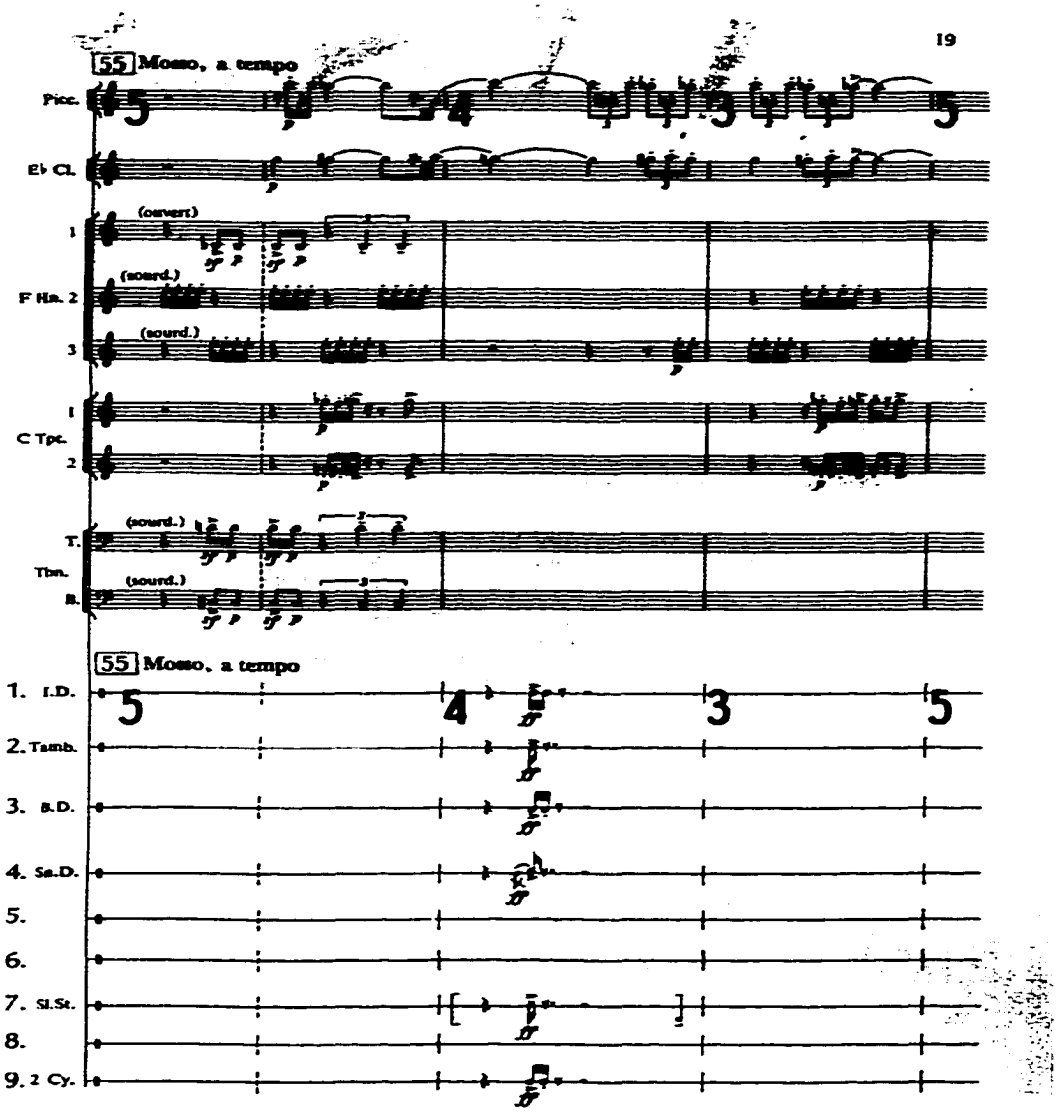
While the number of players between the wind and percussion section is equal, the writing in the percussion section is much more active than the wind section, giving the impression that the percussion parts are primary. Varèse's treatment of the percussion section was without precedent. Similar treatment can be seen in Joseph Schwantner's *and the mountains rising nowhere* (1977), but few composers until this work would repeat the use of percussion on such a scale. Anecdotally, Varèse was so concerned about the percussion parts that for its premiere performance, he personally procured the percussionists through collaboration with the *Dalcroze School of Eurythmics,* then subsequently rehearsed and conducted the ensemble.[30]

Interesting also is that a majority of the wind writing has a very percussive quality. Consider Example 3-1, which spans four measures of music (mm.55-58). The wind parts are highly rhythmic in nature and predominant in this passage. The flute part contains the highest pitch content, with the Eb clarinet part following, expressing only three pitches, and the trumpet parts also with only three pitches expressed. With the exception of the flute and Eb clarinet, the winds are percussive in their single-note rhythmic passages. The first horn couples with the trombones in a percussive gesture, highlighted with *sforzando/piano* dynamics. This gesture is similar to having strong or

[30] Louis Norton Varèse. Varèse: A Looking Glass Diary, vol 1. (New York: W.W. Norton and Company, 1972), 191.

louder dynamics played by a dominant hand of a percussionist, with the softer note being expressed in the weak hand. (See Example 3-1)

Example 3-1: Edgar Varèse: *Hyperprism*, mm. 55-58. A view of a highly percussive style of writing for winds.



Hyperprism by Edgar Varèse
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The dynamic contrast in this example reinforces the percussion concept stated previously, and the muted instruments give additional support for such consideration.

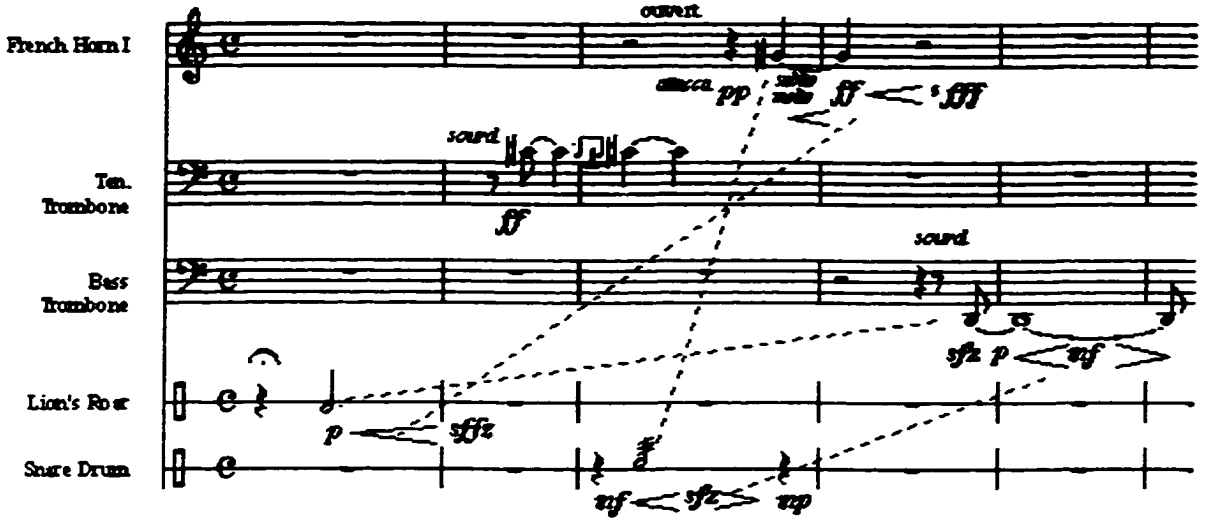
For example, it may be possible that the mutes are not only used to manipulate the traditional sound of the winds, but to provide a snare drum-like, rattling quality. Such an interpretation furthers the premise that the wind instruments are imitating percussion, and suggests that Varèse intended emulation through sonority (using the mutes) and a sense of sticking (using dynamic to imply dominance and weakness between hands).

Consider another example where winds are called to imitate and emulate percussion. In measure two of *Hyperprism*, Varèse writes for a lion's roar. Based on the diagram provided for the percussion setup in the preface to the score, it could be assumed that Varèse had a fairly large instrument in mind. This large instrument would have a sound that is vigorous, turbulent, throbbing and resonant. This drum is answered in measure three by the almost nasal buzz of a muted trombone, which over the course of the next three measures, slips and slides around its dominant note, C#. As if an echo of the opening roar to life of the first measures, the bass trombone is presented, also muted. In this low register, however, (D below bass clef), the rattle and sonority is similar to the lion's roar or string drum.

In the same area of the score another example involving snare drum and the horn I part is presented. The snare drum enters in measure 4, designated in the score as "muffled," accompanied by a swelling dynamic shape. As this sound tapers, the horn enters inaudibly before swelling to a strong dynamic. Here, one possible interpretation allows the horn sound to evolve from the dissipating snare drum. The horn is presented as completion of the forceful, but incomplete crescendo begun by the snare drum. If the previous interpretation were followed, the horn passage should be approached aggressively to create a snare drum-like vibration of the preceding roll through the mute.

Example 3-2 illustrates the lion's roar through the snare drum and horn passage, closing with the bass trombone. The dotted lines in the illustration highlight relationships created through emulation and imitation. Notice that these imitative relationships are highlighted from the rhythmic passages and from dynamic indications.

Example 3-2: *Hyperprism* by Edgar Varèse, mm. 2-6. Sketch of two gestures of winds emulating percussion.



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Another performance issue involves interpretation of dynamic nuances. As previously noted, in measure two the lion's roar is presented with a tumultuous crescendo, followed by a single muted note in the trombone. The trombone pitch is a crystal-like ricochet or echo that previous sound, resounding as if thrust upward from the percussive element. This gesture is imitated dynamically (See Example 3-2) with the horn performing in dynamic imitation of the lion's roar and the bass trombone relating dynamically to the snare drum. This relationship is partially masked by the variance in

tessitura between the instruments. Had the bass trombone imitated the lion's roar and the French horn imitated the snare drum the relationship might be more obvious.

However, these gestures provide closure to the passage. Like a mirroring of the sound elements, reversing the image as it is reflected back, the less obvious relationship between instruments affects cohesion in the composition. As one paring of instruments creates tension, the other provides release. In this fashion, the lion's roar and the bass trombone function like bookends providing formal clarity. And while Varèse's music may seem obtuse in regards to his formal design, it is through these structures, (rhythm, tempo, dynamic, etc) that his formal construction may be revealed.[31] *Hyperprism* is made complex then not only by its timbral intensity, but by its shifting meters, silences, changing tempos, and its often ambiguous rhythmic energy.

If Varèse is considered here for his focus on sound, then composers such as Carter, Berg, Partch, Stockhausen, Boulez, Schoenberg, Webern, Ives, Babbitt, and Sessions could also be considered for their contributions to the expansion of our harmonic, rhythmic and formal development. Through composers such as these, a paradigm shift in our musical heritage can be acknowledged. As works like *Hyperprism* are explored we are better able to comprehend a new timbral and rhythmic complex.

Consider yet another portion of *Hyperprism* that provides an example of winds in imitation of percussion. On the surface this work is nebulous and disjunct in structure.

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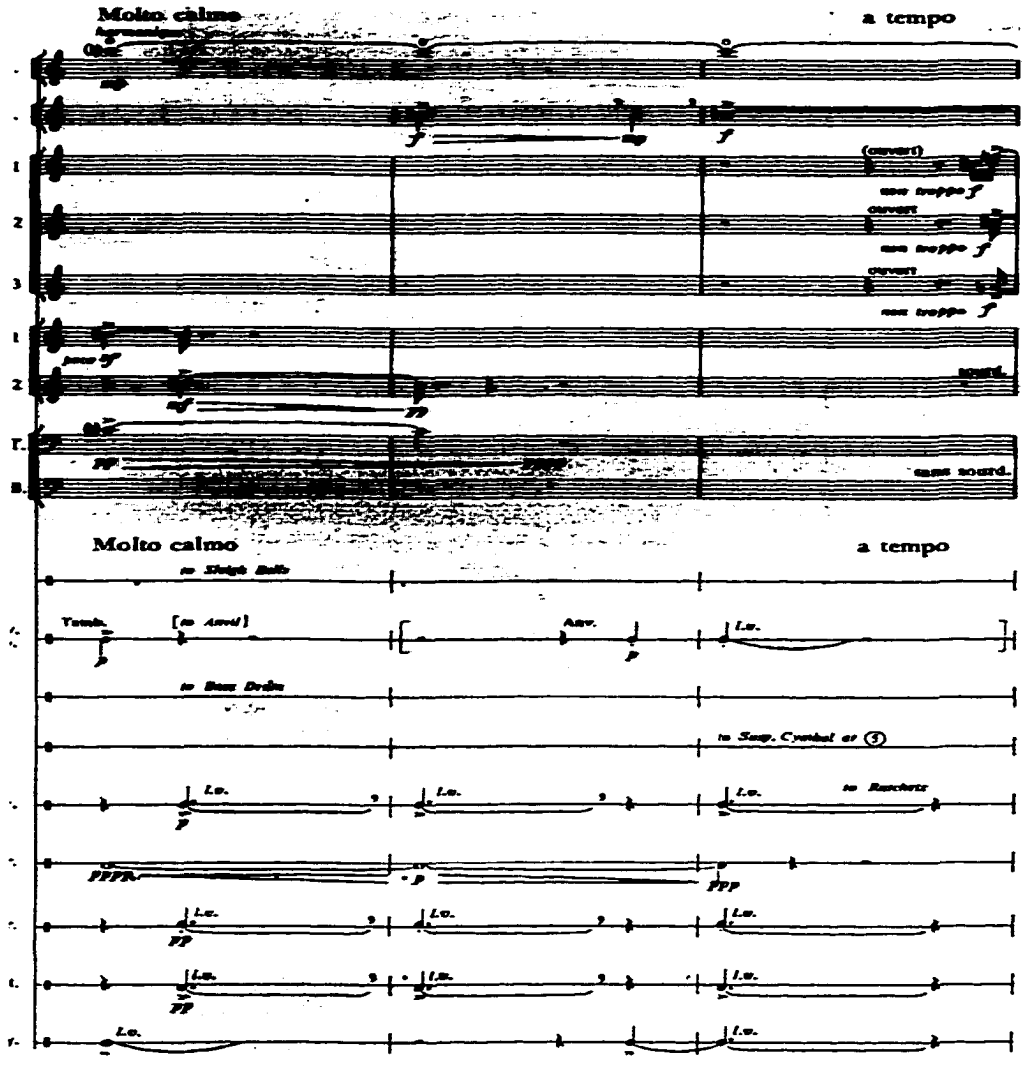
[31] Louise Norton Varèse Varèse: A Looking Glass Diary vol.1 (New York: W.W. Norton and Company, 1972), 191-193.

Sections of highly contrasting style collide with one another, challenging the listener to make sense of the work's construction. It is in the first such collision that other examples of winds imitating percussion can be studied and understood.

For example, at measure 12 there is a dramatic change in tempo and rhythmic activity. As the tempo calms, so too does the density of writing, both rhythmically and texturally. The deeper and thicker sounding percussion instruments such as the Indian drums, Chinese blocks, snare drum and bass drum give way to higher pitched percussion instruments such as suspended cymbals and triangles. These instruments, by their very nature, have a distinctive attack and, left untouched, have a fairly long decay. The winds too, have a distinctive change in color between measures twelve and fourteen. The bass trombone and horn are replaced by tenor trombone, performing more than two octaves higher in pitch, muted trumpet, flute and Eb clarinet. Each of these instruments sustains a single pitch, either a C natural or C sharp. Varèse has written the percussion dynamically beneath the winds, allowing the percussive decay to underpin the wind pitches, thus giving dominance to the pitched winds.

As seen in example 3-3, the dynamic in the percussion parts, with the exception of the siren, is static. Indications for stopping the natural decay of the percussion are indicated by breath marks. As a matter of nature, no dynamic indication is needed to demonstrate the decay of these instruments. Also inherent to the instruments used, there will be a widening of sound after the onset or attack, as the overtones of the instrument rise to form the body of the sound. The natural decay of the instrument would fade to silence, with variation of decay dependent upon the instrument size, weight, and striking force.

Example 3-3: Edgar Varèse: *Hyperprism*, mm. 12-14. Overlapping emulation of percussion by winds with percussion in the role of support.

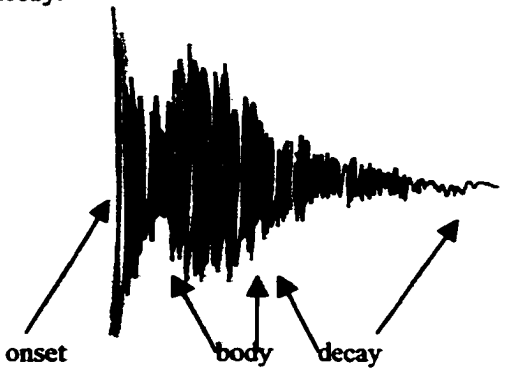


Hyperprism by Edgar Varèse
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The dynamic in the winds, however, must be explicitly expressed if there is intent to emulate the percussion. Varèse does so by placing an accent on the onset of the tone followed by an immediate indication for decay. Like the percussive sonorities that begin simultaneously with these wind attacks, there will be some expansion or blossoming of the sound before the decay is experienced. In percussive terms this would be described

as a warming of the sound. Example 3-4 is a graphic representation of this type of sound. In essence, what has been identified is a bell tone.

Example 3-4: Graphic representation of a cymbal crash demonstrating onset, body and decay.



Varèse's musical works span from 1906 through 1962. His interest in using sound as a primary musical element was realized to a great extent through a wide variety of percussion instruments. One might hypothesize that his wind writing was therefore influenced by the sonorities percussion afforded. This is confirmed and evidenced in his writing where single notes are repeated in rhythmic passages of varied lengths and densities. Further confirmation occurs where mutes are used to alter the natural sound of the winds and harmonics are employed to explore extreme high ranges. Very often, these techniques are couched in proximity to similar percussion sonorities. It is crucial therefore, that the conductor is cognizant of the nature and construction of percussive sonorities. Through this understanding, the chances of artfully coaxing similar sonorities from the winds are increased.

Hyperprism will be discussed in a later chapter to examine the winds as they function in percussive roles of punctuation, clarification, and support. However, the concept of winds imitating and emulating percussion is not limited to the work of Varèse.

Additionally, it is possible that a historical progression towards this relationship could be traced through a number of works that post-date *Hyperprism*.

It would be many years after Varèse's *Hyperprism* until other composers would use percussion in such an integral and equal role in composition. In general, percussion evidenced greater acceptance in orchestras during the 1920's through the 1940's. Predominantly, those instruments already in the orchestra (timpani, snare drum, and cymbals) were given greater use, their growth being owed to such composers as Debussy, Stravinsky, Ravel, and Bartók.[32] As is generally the case with all things new, there was initial resistance,[33] but many composers today now maximize and utilize percussion more freely in their compositions than ever before. In order to make more meaningful music, conductors should realize that with greater acceptance of percussion comes the responsibility to comprehend the impact these instruments have on others in the ensemble. However, as Varèse pointed out, we are often behind composers in our acceptance of new trends.

> There has always been a misunderstanding between the composer and his generation. The commonplace explanation of this phenomenon is that the artist is ahead of his time; but this is absurd. The fact is the creative artist is representative in a special way of his own period; and the friction between himself and his contemporaries results from the fact that the masses are by disposition and experience fifty years out of date.[34]

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[32] James Blades. Percussion Instruments and Their History. (London: Faber and Faber, 1984), 412-415.

[33] The reader is referred to critical reaction to premieres of Petroushka, La Sacre du Printemps, and a great many of the works of Schoenberg where initial reaction was less than positive. As cited in the case of *Hyperprism*, there was great dissention among critics and audience members concerning the worth of many of these new works.

[34] Louise Norton Varèse. Varèse: A Looking Glass Diary. (New York: W.W. Norton & Co., 1972), 217.

We can trace this paradigm shift through numerous works after *Hyperprism*.[35] Consider one of the first percussion ensemble works, *Ionisation* (1931), also written by Varèse. Compared to other chamber works, the idea of a complete composition for chamber percussion was in its infancy. Also important for its equality of percussion is Bartók's *Sonata for Two Pianos and Percussion* (1937), written within six years of *Ionisation*. In Percussion Instruments and Their History James Blades states that Bartók's "use of the machine timpani and other percussion is exemplary, and has been unquestionably a source of inspiration to subsequent composers."[36]

The increased use of percussion was not limited to chamber works. Consider the use of a solo percussion section in Paul Hindemith's *Symphonic Metomorphoses* (1943). Such use of percussion had never before been seen. The development of percussion concerti, such as the famous *Concerto for Marimba and Vibraphone* (1947) by Darius Milhaud, should also be noted. All of these works serve to demonstrate the growing use and importance of percussion during the first half of the twentieth century.

Specific to the wind ensemble and our discussion of the interrelation of wind and percussion writing, however, still other composers should be considered. Excellent examples of winds in imitation of percussion are found in Vincent Persichetti's *Symphony No. 6 (Symphony for Band)* published in 1958. This is an important work in the wind repertoire, especially for the percussionist, as noted by Irving G. Jacob.

> In the work as a whole, the percussion part is written in such a way that it has almost a life of its own, thus being more than a mere accompanying section to the wind instruments. The work is one of the many examples showing the evolution

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[35] There are fewer works that demonstrate this direction prior to *Hyperprism*. *Integrales* (1920) by Varèse also utilizes a large percussion consort. And Stravinsky's *L'Histoire du Soldat* (1918) is regarded to be a work that expanded the possibilities of percussion in composition. For more detailed descriptions of these types of works, the reader will find the text by Blades an invaluable resource.

[36] Blades, 414.

> of percussion as a batterie in both the symphony orchestra and the wind ensemble and also as an independent entity.[37]

Though a few examples from *Symphony No. 6* were discussed previously, other examples demonstrating the relationship between winds and percussion can be considered. Through these, the contributions to the advancement of these relationships made by Persichetti will also become apparent.

In the opening of the fourth movement of *Symphony No. 6*, the xylophone provides cohesion, linking the march-like rhythmic statements together. (see example 3-5.) The xylophone is a dominating voice, being doubled in part by flute and oboe. While the wind articulation is predominantly *staccato*, there are internal passages that are slurred. However, the overriding style of articulation in this opening passage is clearly short and brisk. Particularly through its pointed articulation and bright sonority, the xylophone is largely responsible for establishing that style. Persichetti enhances this by employing a *"p sempre"* dynamic, adding an excited, determined, quality to the character of this introduction. It is precisely this sound that the winds can borrow for better expression.

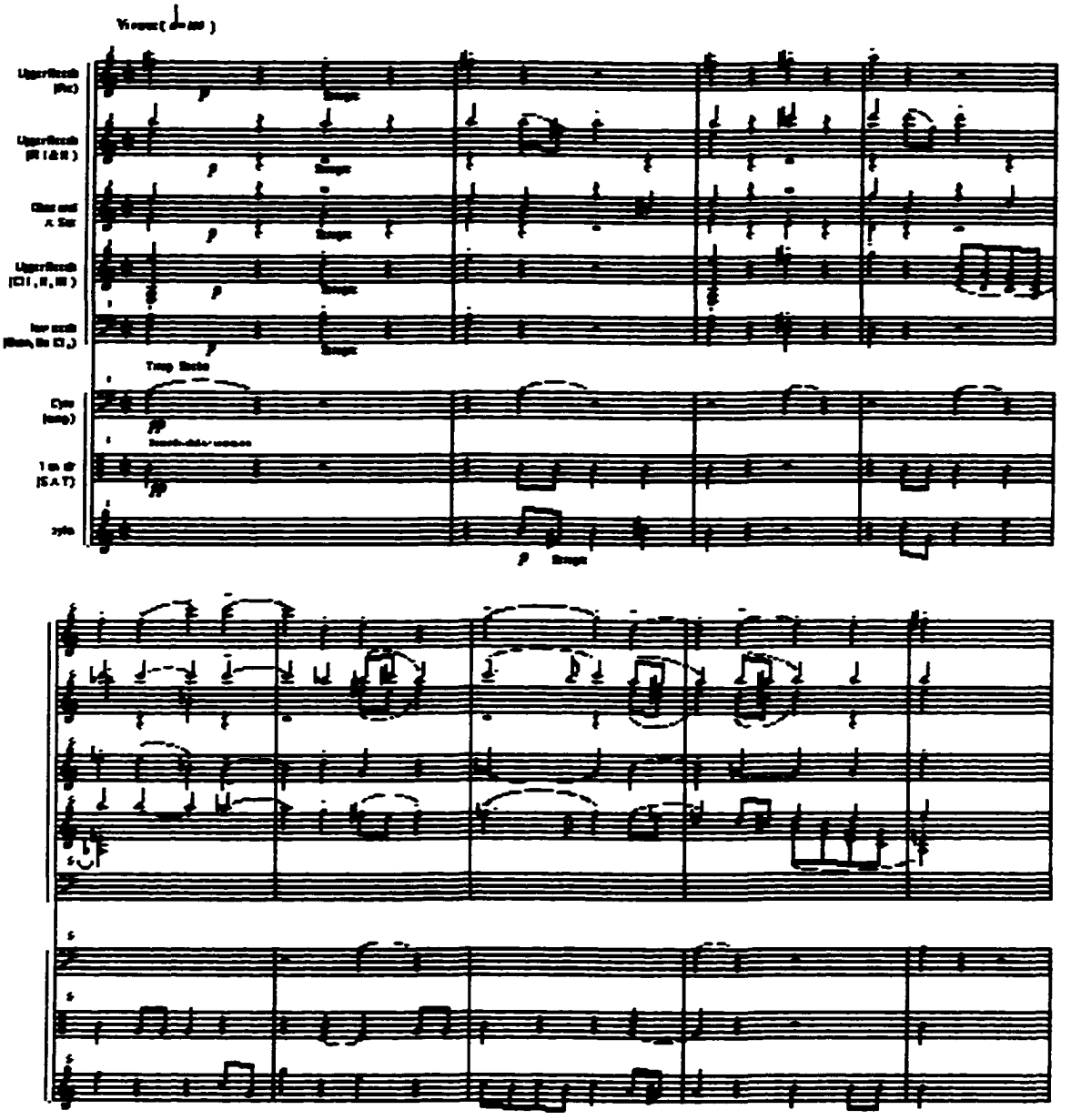
The percussionist should insure that the xylophone will have a distinctive sound. Too harsh a mallet will place too much emphasis on the attack of the notes. Too soft a mallet will diminish the body of the sound, producing a flat attack, and distort the importance of the xylophone timbre to the overall texture. So it is imperative that the percussionist and conductor work towards the correct sonority through the correct mallet choice. In the best scenario, the percussionist would use a wooden mallet on a rosewood

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[37] Irving G. Jacob. "The Use of Percussion in Symphony No. 6 (Symphony for Band) by Vincent Persichetti: A Functional Analysis." Percussionist, vol XV, No. 1: Fall, 1977, 20.

xylophone. The wooden mallet will provide a firm, but not overbearing attack and a full, resonant sound. A black phenalic or clear lexicon mallet will most likely provide too harsh an attack, though the player may be able to control this to some degree through

Example 3-5: Vincent Persichetti by *Symphony No. 6*, movement IV,mm.1-8, reduced.

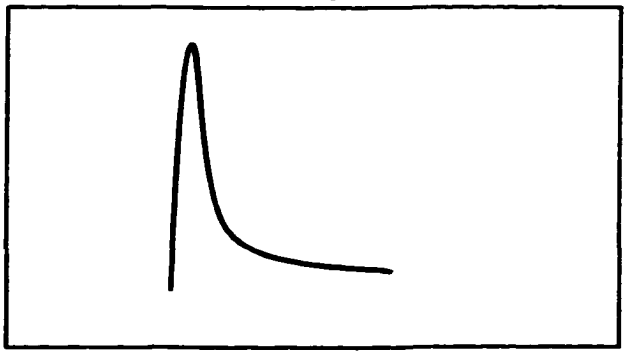


Symphony No. 6 by Vincent Persichetti
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style of stroke.[38] If a synthetic instrument is used, other mallets should be considered. Generally speaking, a hard plastic mallet might produce the desired tone. In all circumstances, careful attention should be given to the attack of tone and resultant body of sound, avoiding harshness or less tonal mallet choices. Other considerations for mallet choice will include the performance hall and its acoustics, with each conductor accounting for individual surroundings and equipment.

To generalize, the conductor should seek a tone that has a clear attack with a full and resonant body. To some degree the decay of the note will be left to the mercy of the performance hall, and certainly no manual manipulation is necessary. If the resultant sound were to be drawn linearly, it might look like figure 3-6 below.

Example 3-6: Graphic representation of xylophone attack.



The fact that the winds which accompany this passage are slurred is no less an indication of the need to imitate the xylophone. The focus of the imitation will be on the first of the slurred notes and the conductor might look for a more pointed attack there. Since the woodwind lines do not complete each passage, but rather are fragments of the

[38] The percussionist can also place a thin band of moleskin around the center of the mallet head to lessen the sharpness of the attack, but care must be taken to avoid missing the covered part of the mallet when executing the stroke.

xylophone, a slight decay from the initial attack may be called for, allowing the woodwind voice to meld or taper into the xylophone resonance.

An intangible issue that remains at the heart of imitation in this example, is the essence of the xylophone sound. The essence of the xylophone sound could be described as being of relentless, controlled energy. This energy is increased by the rhythm, which drives across the bar line, creating a forward moving or cascading effect that propels the movement onward.

To achieve better blend and a more artful interpretation, the wind players should strive for this same energy. This may seem difficult to achieve over a short, slurred passage, but the goal may be accomplished by developing mental imagery that elicits a physical response. In this specific example, the mental imagery used should involve terms related to the concept of forward motion and/or cascading energy. From this imagery, the performer can develop a physical response related not only to the style of attack, but to the crispness of finger motion, air speed, and shape of the line. Therefore, while the musical passage is slurred, there can be a *staccato* application of the fingers accompanied by a pointed attack, fast moving air, and a slight decay of sound.

Another choice of imagery might involve analogies like throwing a ball. Relating this analogy to music, it would be as if the musical passage where being thrown out and away from the performer, with the greatest emphasis placed on the release of the ball (attack) and the sound decaying into the distance. Consider what Pablo Casals had to say about imitation. While his comments were specifically relatied to phrase imitation (horizontal motion), it may be possible to apply his concept in an overlapping or vertical fashion. Casals states:

> No less does the 'law of diversity' apply to the repetition of phrases. 'If you say the same thing the same way, it has no value,' Casals insisted when teaching the first movement of Brahms' E minor Sonata. 'The second time we must give more intensity.'[39]

Casals' statement makes great sense, especially when considering the linear nature of melody. By applying Casals' interpretation vertically, however, it is possible to have a difference in articulation between two or more players on any given line. This reinterpretation Casals' statement may be related to conversational language, where two individuals can make the same statement, but through their inflection, convey slightly different meanings. Music may function in the same fashion. In the previous example from *Symphony for Band*, the slur in the flute, in combination with the highly articulate sound of the xylophone, creates a more unique and highly defined sound. The conductor can realize this combination by demanding percussive fingering from the flute player and a sense of slur from the percussionist.

Applied vertically, as players combine and express a given musical passage, it becomes possible to have variety in articulation, even over the same passage. Similar to Stockhausen's interest in combining attacks of different instruments to create new sounds, new sonorities can also be produced when combining different articulations. It is not the author's intent to foster an unwarranted alteration of the composer's work. However, as was illustrated in Chapter 2, a reinterpretation of one instrument's articulation, or even one or two players within a section, can foster greater clarity of line and positively impact the artfulness of a passage without losing the composer's intent. Indeed, many composers, even those as notable as Stravinksy, create compositions with a

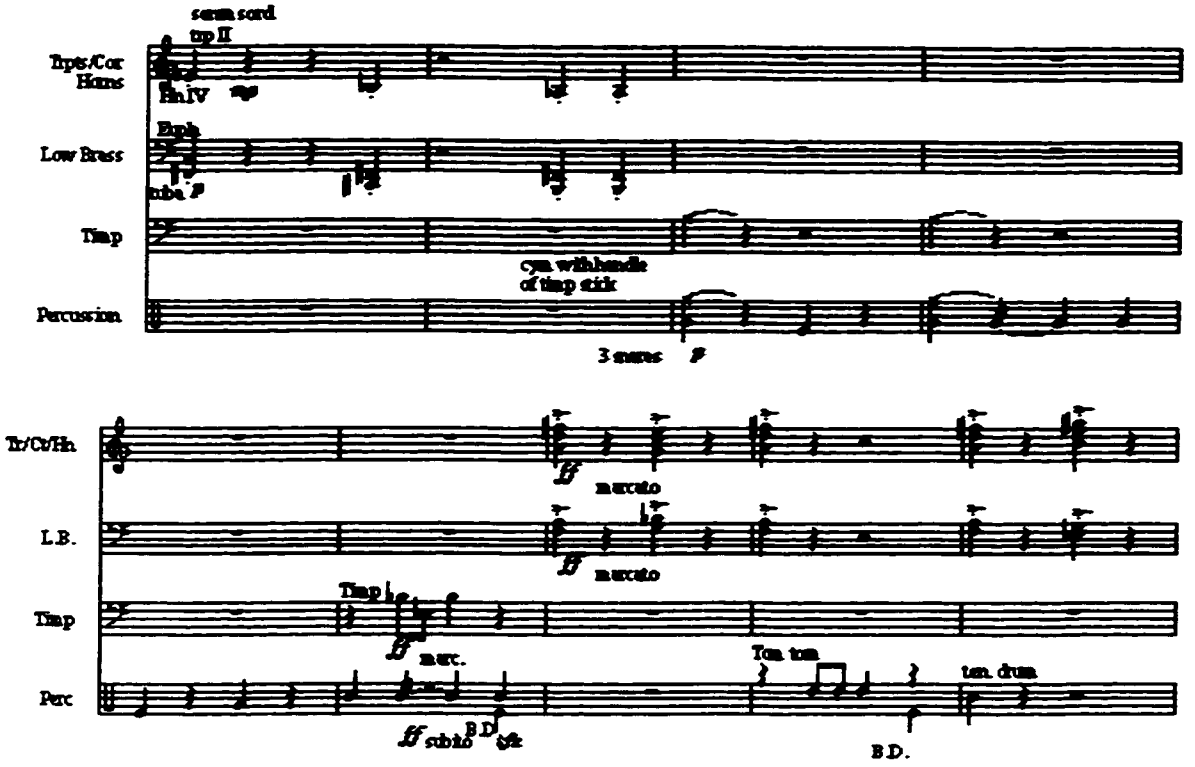
variety of articulation expressed between instruments within the same musical passage. Consideration of these choices should reflect a desire to enhance or highlight a particular musical concept. Furthermore, opportunities to employ this technique will most likely emerge from a desire to have percussion emulate the winds more closely, or vice versa.

Returning to *Symphony No. 6* another example of imitation, this time in a more general sense, can be seen in the many statements of *marcato* quarter notes in movement four. (See Example 3.7) The note duration and methodical, almost incessant march-like movement suggests a more percussive approach. In fact, by taking the approach that the brass players are "drumming" through their instruments, the performers may arrive at a better working interpretation of the note length, depth and decay. Furthermore, the brass performers have ample reason to be influenced by the percussion section, given that the preceding four measures are solo percussion. It might be useful to have the percussion section play independently, allowing the upper brass to develop a correlation to the multiple snare drums and the low brass to develop a correlation to the timpani and bass drum. While the brass might effectively provide a *marcato* articulation as indicated in the score, their performance may be enhanced through imitation and emulation of the natural *marcato* produced in the percussion instruments.

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[39] David Blum, Casals and the Art of Interpretation. University of California Press, Los Angeles and Berkeley California, 1977, 32.

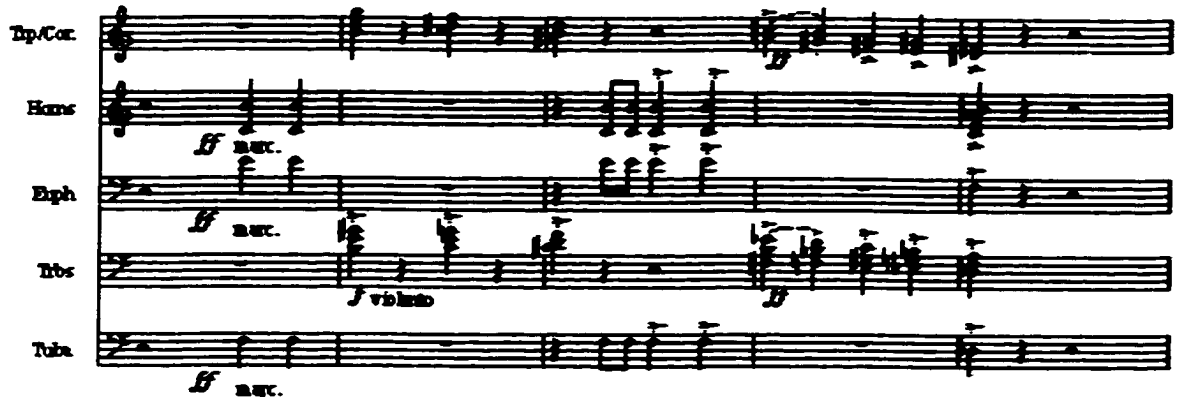
Example 3.7 Vincent Persichetti, *Symphony for Band*, movement IV, mm. 35-42. "Drumming" by brass players.



Symphony No. 6 by Vincent Persichetti
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Other examples that suggest drumming by wind players can be found throughout the fourth movement. Consider measures 99 through 103 as illustrated in Example 3.8. This example demonstrates that emulation is not necessarily limited to musical gestures that lie in close proximity, but can occur even in the absence of an immediately comparable statement. This is clearly a case where the percussive nature of the rhythm, in combination with the relatively static pitch content, leads to a percussive interpretation.

Example 3.8 Vincent Persichetti *Symphony for Band*, movement 4, mm. 99-103. Emulation of percussion ensemble features by the brass ensemble.



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The scoring of the brass and the percussion Example 3.8 provides another interesting relationship that blurs the line between pitch and rhythm instruments. Again, the march-like rhythmic figures in the trumpets and trombones are present. These are punctuated in this passage by horn and tuba. As mentioned previously, the march-like passage in the trumpets and trombones can be interpreted as emulating the multiple snare drums, deriving their articulation and sonority from that percussive voice. It could be further suggested that the trumpet relates to the xylophone, leaving the trombone to fill the role of the multiple snare drums. Given this interpretation, a soprano and alto/tenor voice relationship emerges in the percussion family, with the xylophone acting as the soprano and the multiple snare drums functioning as alto and tenor. The mirroring of this voicing in the brass is obvious. To complete the relationship, an interpretation of the tuba and horn in emulation of timpani and bass drum would be logical.

Acknowledging the existence of this relationship necessitates performance emulation and therefore, a more percussive punctuation of the rhythm. Furthermore, this

acknowledgement provides strong evidence that the brass section is imitative of the percussion section, regardless of the fact that the percussion section has been relatively uninvolved since measure 80 and that the instruments used in conjunction with this passage are different.[40] As the primary interpreter for the ensemble, the conductor is reminded that proximity of imitation is not a limiting factor in interpretation. Further, it is apparent that imitation occurs not only on the horizontal or vertical planes relative to articulation, but occurs through orchestration and sonority as well.

The previous examples from *Symphony No. 6* involve rhythmic patterns, often stated in hypermetric relationships that demonstrate movement between musical tension and release. This rhythmic vocabulary suggests a more percussive interpretation. The professional musician is inclined to provide direction (either progress or egress) to such rhythmic phrases. Consider the snare drummer who desires to perform a more meaningful interpretation of an etude. If in fact, as some musicians would have us believe, phrasing can only be possible in relationship to melodic and harmonic parameters, then the percussionist who plays the snare drum can never hope to achieve a meaningful performance; there can only be accuracy or inaccuracy of explicit dynamics and rhythm. Melody and harmony certainly play a vital role in the determination of phrasing and interpretation, but they are no more important than the role of meter and rhythm. Exclusivity in analysis can be highly limiting and dangerous as concerns the development of interpretive options. Consider what musician and author Donald Barra had to say regarding this subject.

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[40] The percussion instruments used in conjunction with example 3.8 are tambourine and timpani. The other instruments one might expect would be the three snare drums, bass drum and xylophone. Instead, these instruments will see comparatively little use until measure 135.

> The relationship of rhythm and meter, we have seen, is a primary source of musical intensity and momentum. Indeed, the interaction between these two elements is a key factor in the dynamic evolution of most musical sequences. This relationship often involves a fundamental conflict that is exploited in the early stages of a progression and then resolved at the completion of the sequence.[41]

It is logical to interpret passages that are highly rhythmic in a percussive manner, emphasizing their rhythmic energy and bringing to the fore the inflection that is inherent in their rhythmic patterns and effecting a more cohesive, energetic, and precise performance. The question for the conductor is how to pursue and achieve this kind of cohesion and the most efficient means to communicate the relationship between these parts once an instance of emulation and imitation is identified.

The logical starting point is directed listening. The conductor guides the performers to listen to the passage which will be imitated and/or emulated, verbally describing specific nuances he wants to accentuate and translating those nuances to performance outcomes. This can be done at nearly any level of musical education and proficiency, and in itself, fosters evaluative listening. Even very young players can be guided to listen to a particular passage and make an effort to imitate it, though at younger ages this may happen first vocally and later, instrumentally.[42] This type of instruction involves transference, and at the heart of this transfer is the ability to conceptualize the sound that is heard, formulate a mental image of that sound and bring about an aural or

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[41] Donald Barra, The Dynamic Performance: A Performer's Guide to Musical Expression and Interpretation, (New Jersey: Prentice Hall, 1983), 75.

[42] This can be most difficult for young percussionists who, while playing snare drum for example, are told to listen to and emulate other instruments. The snare drummer's initial reaction might be that they cannot possibly imitate the winds because they are pitched and their drum is not. Given guidance, however, that same player might identify dynamic changes and other inflections performed by the wind player that could be emulated. The converse situation, that of the young wind player being asked to imitate the snare drummer, often proves less elusive. Being that snare drum parts are rhythmic, the young wind player will naturally be drawn to listen to the crispness of the rhythm and will focus on the rhythmic and articulative aspects of the performance.

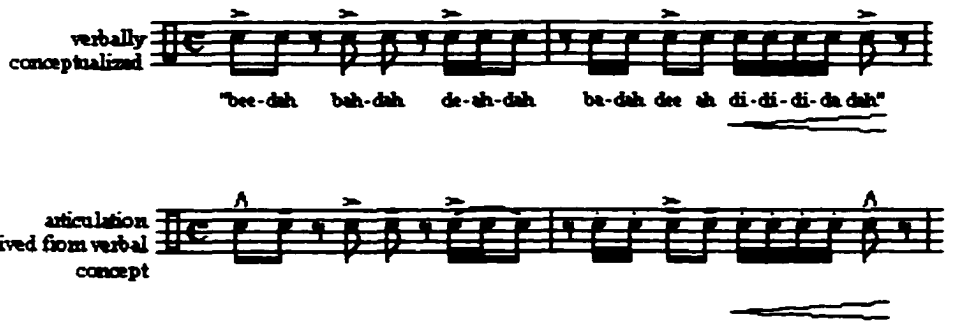
performed version of that sound. The wind player who is asked to imitate a percussion passage must first develop a verbal analogy or conceptualize the sound, build a meaningful mental image which reinforces this concept and then attempt to produce that sound. In Examples 3.9a through 3.9c below, the flow of this process is expressed. Notice that this process begins with a unpitched rhythm, but through conceptualization, a melody can emerge.

Example 3.9a A snare drum passage to be imitated by a wind player.

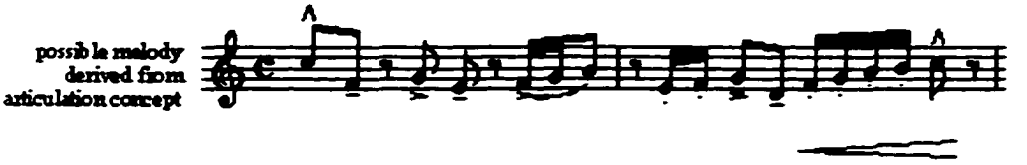


Example 3.9b: The wind player develops a verbal analogy and conceptualizes the snare drum sound.

"The snare drum sounds like a person arguing to make a point, with each important word receiving an accent."



Example 3.9c: The wind player develops a mental image of the sound to reinforce their performance, picturing an individual gesturing emphatically as they argue a point. The resulting performance may involve body motion reflective of their mental image.



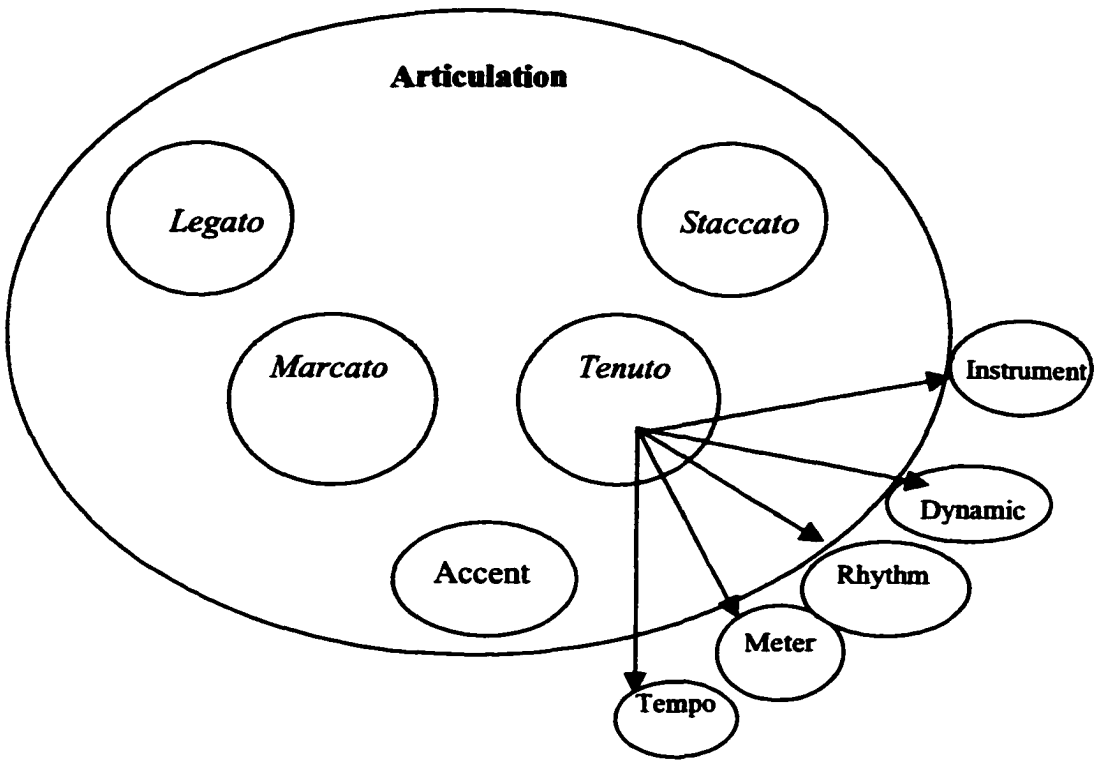
The clarinetist in the previous example, having developed a mental image of the sound, also develops a physical response that enables the performance of that image. If, as in the previous example, the performer imagines a conversational relationship to the

music, subtleties between articulation can be differentiated similar to the various inflections derived from spoken dialogue. While there may be three accents in example 3.9c, there may be variety among them, allowing for one accent to be interpreted as being more important or weighted than another. It is important that the performer realize there is not one style of *staccato*, or one style of *marcato*, or *legato*, etc. Articulative headings serve as a broad base from which to derive more appropriate and specific articulation relative to the context of a musical passage. The conductor who can lead his ensemble to discern such differences is able to offer a more refined and more meaningful musical interpretation, in much the same way that an individual with a wide vocabulary is better able to express his/her thoughts and ideas.

For the performer as well, allowing for subtle differences in articulation enables expression with greater personal connection and increases the likelihood of an aesthetic experience. The idea that variety is possible within in a given category of articulation is expressed in example 3.10 through a Venn Diagram.[43] Articulation is affected by metric impulse, tempo, rhythmic structure, dynamic and even the instrument performing the articulation.

[43] A Venn diagram is a visual representation of a syllogism.

Example 3.10: A Venn Diagram relating the broad concept of articulation to more specific subcategories of articulation. Each specific articulation can be subcategorized by musical elements that impact and shade the articulation in performance. (See the portion of the diagram related to *tenuto*.)



The diagram illustrates a thinking process. Understanding how our thinking processes and mental imagery work benefits us as conductors to the degree that such understanding allows us to facilitate more artistic performances. In essence, we facilitate our player's perception of the music. In Ghosts in the Mind's Machine, Stephen Kosslyn's points out the usefulness of mental imagery in therapeutic settings.

> Much of the information on which we base our interactions in the world is rooted in our concepts of self and others, some of which is probably stored as mental images. This role of images may become apparent if you think about what is in your mind when you first arrive at work in the morning. It is not an accident that *perceive* means to both "see" and "think of." Very often, therapists have said, patients remember themselves from a younger era, when they were less accomplished and more vulnerable. Bringing this image to the surface and updating it is a large part of the therapist's job. This process surely could be

> facilitated by a good understanding of how people retrieve images and replace one image with another.[44]

A parallel to conducting can be drawn from the statement by Kosslyn. Restating it in musical terms: Much of the information on which we base our interpretation of musical performance is rooted in our life experience, some of which is probably stored as mental imagery. The role of images may become apparent if one thinks about what is in the mind when, during the performance or rehearsal of a work, an aesthetic experience is achieved. Our perception of the musical moment is drawn out of the experiences to which we can relate. The role of the conductor is to cultivate these mental images to increase the aesthetic experiences from which ensemble members can draw.

It follows that the less musically mature musician may be that way, not because of a lack of technical proficiency, but because of limited experiences that have allowed them to distinguish varied degrees of passion or other intense emotions. Furthermore, a lack of musical maturity may be due to the individual's inability to access mental images. Musicians in this category lack an important tool in developing their musical voices. The need to relate or associate mental images in performance becomes paramount to an artistic expression of music. To perform music in a scientific manner, as an ordered compilation of notes, explicit dynamics, articulations and rhythms, is to ignore the humanness of the art, negating the individualistic, expressive and artistic elements that reach the inner core of our being.

And so it is not enough, having identified an element of wind imitation of percussion, to merely explore issues related to rhythm, texture, articulation or sonority. It

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[44] Stephen Michael Kosslyn, Ghosts in the Mind's Machine, Creating and Using Images in the Brain. (New York: W.W. Norton & Company, 1983), 220.

is not enough to discern the compositional intent of the passage, be it a reinterpretation, an element of progress or egress over the course of the work, or a theoretical technique of augmentation or diminution. These are important factors that are critical to complete study and form a firm foundation for evaluation. Alone, they do not necessarily lead to more meaningful performance. The missing element is one that draws the ensemble and individual performer more deeply into the music, beyond the technical concerns and into the *melos* of the music. Often, this element is something extra-musical that fosters an attachment to the work, underpinning its liveliness and vitality.

The conductor who is prepared with analogies can be very effective in evoking deeper commitment to a performance. Just as critical, the conductor who is able to assess his ensemble's limitations as they relate to mental imagery can turn to other resources, such as symbolic imagery, to teach abstract concepts related to musical meaning or the implied psychology of the music being performed.[45]

When confronted with a passage where wind instruments are in imitation or emulation of percussion, the conductor, after careful analysis of rhythm, meter, harmony and articulation, can turn towards imagery to further unify the players in performance. A focus on the concept of the sound is often a better starting point, rather than a focus on technical issues of what mallet to use, how hard or soft to attack, playing area on the instrument, or placement of the tongue. The specifics of what mallet and how hard to tongue may be determined by the players through a conceptual development, even without a clear verbal explanation of how it was accomplished. For the conductor, it is

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[45] Kosslyn, 214. Kosslyn is speaking about children and their imaging ability, but a correlation to music can be easily made.

this conceptual approach that determines the gesture used. As Eugene Corporon states, "No gesture can have meaning without conception....Conducting is, after all, showing how sound looks and feels."[46]

For example, when conductors use technical verbal descriptions of how to tongue the performer is often less successful in achieving the desired results. This thought is reinforced in the Inner Game of Music when author Barry Green points out that directives that begin with "do this," "try this," often fail to meaningfully reach the performer. Such instruction can be forgotten or misinterpreted. In addition, the performer may not agree with the instruction or the conductor might actually be inaccurate in the method of achieving the desired musical outcome. By using instructions that call for personal observation and evaluation (referred to as awareness instructions in the Inner Game) a more comfortable learning environment that allows the individual to respond with a personal awareness is fostered. Another dividend is that this method of instruction fosters better retention of musical concepts and techniques.[47] Furthermore, this technique compliments the use of mental imagery as both draw from individual experiences to achieve a desired musical goal.

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[46] Larry Blocher, Ray Cramer, Eugene Corporon, et.al, ed. By Richard Miles. Teaching Music Through Performance in Band. (Chicago: GIA Publications, 1996), 15.

[47] Barry Green with Timothy Gallwey. The Inner Game of Music. (Garden City, New York: Anchor Press), 1986, 133-35.

Chapter IV

Imitation and Emulation of Wind Instruments by Percussion

Having examined how wind instruments can emulate and imitate percussion instruments, the manner in which percussion instruments imitate and emulate wind sonorities should also be considered. We shall first consider examples that present scored imitation of winds by percussion instruments. As previously noted, scored imitation implies imitation that is primarily close in proximity, where one statement of a phrase, phrase fragment, motive or other musical gesture is nearly immediately repeated in part or in whole. Recall that imitation has been defined in part as "the assumption of the modes of behavior observed in other individuals,"[48] and not merely as repetition. Also recall that emulation was defined as "ambition or endeavor to equal or excel others (as in achievement)."[49] Through implication, imitation can be understood as the mirroring of a passage and emulation as a redefining or expansion of a passage. Imitation and emulation that occur between various restatements of themes, motives or other musical gestures, regardless of the distance between such statements, will also be considered.

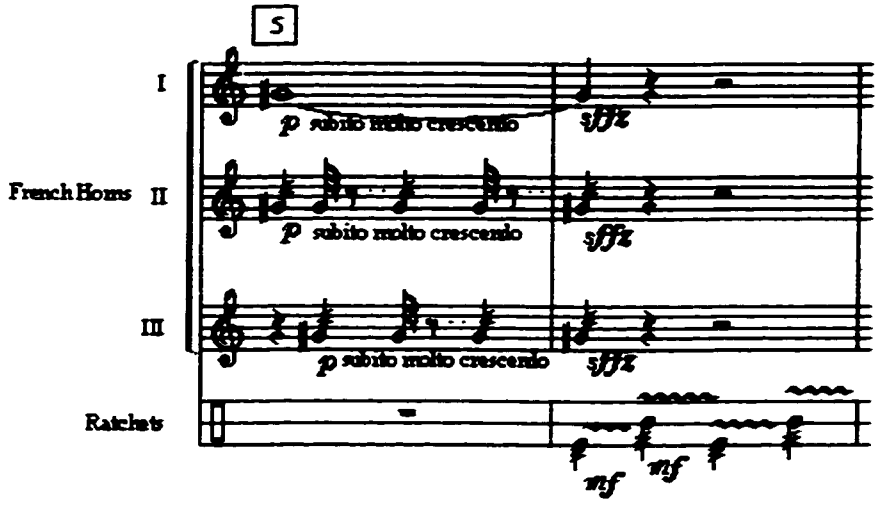
Returning to *Hyperprism* by Varèse, observe the two muted horns at measure five in Example 4.1. This passage contains an explicit crescendo into measure six. The horn crescendo culminates at measure six with the entrance of the ratchets, which

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[48] Webster's New Collegiate Dictionary, 567.
[49] Ibid, 370.

clearly imitates the horn passage that precedes them. The dynamic at the height of the horn crescendo is marked *fortissimo*, while the ratchet entrance is marked *mezzo forte*.

Example 4.1: Edgar Varèse, *Hyperprism*. An illustration of percussion imitating a wind passage.



Hyperprism by Edgar Varèse
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The logic for the dynamic differences perhaps lies with Varèse's knowledge of the performance characteristics of the instruments involved. Muted horn, for example, will not easily reach a loud dynamic. The ratchet on the other hand, is very difficult to control at dynamics below *mezzo forte*. Inherently, the ratchet could obscure and overpower the surrounding elements. Varèse has effectively compensated for dynamic balance, though at first glance one might expect to percieve a sudden dynamic decrease.

Another interpretive question remains: Should the ratchet imitate the horn, or should the horn imitate the ratchet? While the rapid articulation in the horns takes on a ratchet-like quality, the ratchet performs in imitation of the horn, partially by virtue of the horn being heard first.

A raspy quality is inherent in the muted horn sound. If that were all that Varèse was looking for, he may well have written a whole note in one or both parts with a crescendo. Instead, he chose to write an overlapping of the two voices that, though performing the same pitch, creates a pulsation similar to the rotation of the ratchets. The alternation of the two instruments is accompanied with articulation (on the beat) of a sixteenth note, increasing the pulsation and highlighting the relationship to the ratchets.

The above citation may imply that the horns are really imitating the ratchet, and there can be no doubt that the horn players would benefit from hearing and emulating the ratchet sound. Because we perceive music in a linear fashion, the fact that the horns come first will have bearing on whatever follows. Therefore, the ratchet players must manipulate the instruments in a manner that emulates the dynamic and pulsation of the horns. The percussionist will have to manipulate the speed of the rotation: the faster the turn, the more intense the sound in terms of volume and density. Musically implicit in the part is a mild crescendo leading across the bar line to measure 7. The crescendo is related to the previous horn passage and reinforced by the reality that no musical figure is without progress or egress. It is musically appropriate therefore, to interpret a crescendo in the ratchet because it progresses from the horns to a more dense texture at measure 7 that features a *forte* bass drum figure.

As has been noted, the ratchet is a very difficult instrument to control. Aside from being able to manipulate the speed of rotation on the instrument to alter dynamics, the percussionist could deal with visual movement as well.[50] By Varèse's own direction,

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[50] For example, a decrescendo can be achieved by beginning with a fast rotation of the ratchet and decreasing the speed as you desire the figure to diminish in volume. To enhance this effect the instrument can be held at eye level and, as the rotation speed diminishes, physically lowered.

however, the instruments are attached to a stand so that one player can manipulate them. Consequently, the player must rely on subtle changes in the rotation of the ratchet to control dynamic, being sure to not interfere with the natural articulation that will occur when alternating between the two ratchets, thus ensuring a mimicking of the horns. Citing Casals again, a means for better expression in both parts can be achieved.

> 'When a note is repeated,' Casals counseled, 'it is important that the beginning of the second note should be clearly heard. A natural diminuendo at the end of the first note should give *value* to the second note.' Thus,..., the decrescendo allows the second note to be enunciated distinctly without recourse to exaggerated accentuation: clarification is achieved while retaining grace.[51]

Applying Caslas principle to the passage under discussion could lead to a performance that is dynamically shaded (Example 4.2). To enact the illustrated dynamics, the horns would affect a solid attack at the start of each note, allowing a slight, bell-like taper to the body of the note. The horns would clearly articulate the repeated note, giving each repetition a stronger attack, creating momentum toward measure 6 and a somewhat terraced, pulsated crescendo. Of paramount importance is the realization that the percussionist, whether playing pitched or non-pitched instruments, is as subservient to the impulses of the music as is the wind player.

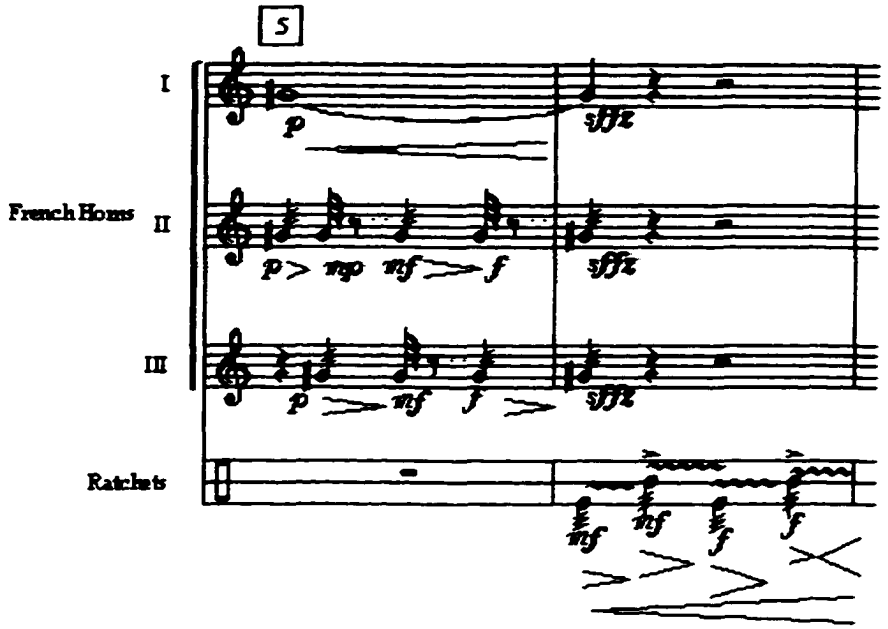
Since this current dynamic interpretation in the horns evolves from the music, the percussion must be equally influenced. Indeed, to follow, and in essence repeat, the passage demands even greater emphasis as the aforementioned statement by Casals indicates. Initial reaction may be to ignore this interpretive option, if for no other reason

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[51] Casals. 56.

than conductors may be unaware that anything could be done to make a ratchet sound more musical.

Example 4.2: Edgar Varèse, *Hyperprism*. A dynamic interpretation of the horns and the percussion parts.



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For the conductor, the foregoing sound concept may lead to a more meaningful performance and to an appropriate conducting gesture. Conductor Eugene Corporon focuses this issue in what he refers to as the *Quantum Conductor Sphere.* In it he identifies four stages of ensemble development, including: 1) Conception; 2) Preparation; 3) Implementation; and 4) Presentation. Corporon further indicates that all aspects occur simultaneously, though the beginning point, however, is conception or the mental building of the sound. Though this occurs in the initial study of a work and can be altered at any stage of development, it forms the foundation of the conductor's

gesticulative language. As Corporon states, "No gesture can have meaning without conception. You must conceive the sound before you choose the gesture." [52]

Referring to the previous example in *Hyperprism*, the conductor might begin by asking the players to verbally describe the sound of the muted horns. While a comparison to the ratchet sonority might be made, leading the horns to imitate that sound, the conceptualization of the sound should not end there. At the very least the percussion should be equally drawn to imitate the muted horns, but it should be remembered that it was from thorough analysis of the horn passage that a larger dynamic shape was revealed. Furthermore, as the conductor prepares to rehearse this passage, he should remember that for most individuals, verbal mechanical direction often interferes with success in musical performance. Verbal description or conceptualization of music, however, often stimulates a response of an individual's mental imagery, which through personal meaning provides a deeper attachment to the musical aesthetic. It is this author's belief that mental imagery is of greatest value to the artist performer.

In a previous chapter, mental imagery was briefly discussed as an aid to interpretation. A definition of mental imagery would be useful to further the proposition that using mental imagery to elicit more musical performances is not only possible, but beneficial and necessary when comparing wind and percussion instruments. Alan Richardson defines mental imagery as:

> [referring to]...(1) all those quasi-sensory or quasi-perceptual experiences of which (2) we are self-consciously aware, and which (3) exist for us in the absence of those stimulus conditions that are known to produce their genuine sensory or perceptual counterparts, and which (4) may be expected to have different consequences from their sensory or perceptual counterparts.[53]

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[52] Teaching Music Through Performance in Band, 15-18.
[53] Alan Richardson, Mental Imagery. (New York : Springer Publishing Company, 1969), 2-3.

Richardson continues:

> To be 'self consciously aware' of these concrete re-presentations means that the individual should be able to report on what he has 'seen', 'heard', 'touched', 'tasted', 'smelled', or 'felt. For experiences to be classed as images rather than sensations or percepts it should be possible to show that they occur 'in the absence of those stimulus conditions that are known to produce their genuine sensory or perceptual counterparts'.[54]

Mental images are not confined to visual stimuli. Other types of mental imagery are possible and can also be beneficial to the musician. Of the other types of mental imagery, perhaps most obvious and more keenly developed in the musician is aural imagery. This is especially apparent when conductors give comparison of one instrument to another. Through the act of listening and evaluating, the conductor asks his musicians to develop an intuitive sense for imitating other musician's sounds, rhythms, articulation and inflection. Young musicians do this almost instinctively through modeling, but if left unencouraged and undirected, fail to develop this ability to its fullest potential. The application of aural imagery is not limited to imitation and emulation between instruments. On the contrary, a multitude of sources can be drawn from, including extra musical sources.

For example: consider a conductor who is looking for a crisp, *staccato* articulation. The conductor, knowing that instructions regarding tongue placement, air speed, etc., often interfere with performance outcomes, analogizes his musical concept to a *staccato* that sounds like the snapping of a dry twig. In this circumstance, the conductor relies upon the performer's exposure to that sound and his or her ability to vividly recall and translate that sound to performance. Through the use of musical and

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[54] Opcit, p.3.

non-musical imagery, the conductor can, for himself and his musicians, facilitate a deeper personal connection with the music, broadening interpretive possibilities and generating a gesticulative vocabulary.

Many conductors do this instinctively on the conceptual level. If, for instance, in the case above the conductor chose to use the term brittle to generate his gesture and to conceptualize the sound for the performers, the performers have to know how to translate this. They must have a definition and a concept of the term brittle. To have only a verbal definition and no real experience with things that are brittle, will yield an uneventful or unchanged performance.

The method of processing this information is important to comprehend. After the conductor asks for a *staccato* passage to be performed in a brittle fashion, the players first translate the command into a verbal definition and demonstrate cognition. This definition is influenced by an individual's experience and understanding. Someone may understand the term to imply fragility, where the slightest pressure may cause an object to snap or crumble, while another might interpret brittle as dryness. The second step involves the individual relating the term to personal experience, which is where mental imagery first comes into the equation.

The conductor can facilitate the second step by incorporating analogies with the initial instruction, such as "Play this in a more brittle fashion, like the snapping of a pencil." Each ensemble member may possess a personal understanding of the term, but these will vary slightly from individual to individual. The conductor, in an effort unify the ensemble interpretation, can be effective in focusing the ensemble on an analogy. Given that all members of an ensemble approach performance from a variety of life

experiences, the conductor who possesses numerous analogies for any one desired sound will be more effective in communicating a meaningful musical outcome. By using numerous similar analogies such as snapping like peanut brittle, snapping like a twig, snapping like a pencil or snapping like your fingers, the conductor allows for differences in individual experience and ability to vividly recall various sounds and imitate them through their instrument, thereby reaching more players. The performers can often achieve a more meaningful performance without necessarily translating the desired sound as light, crisp, very short and precise. Nor is it necessary for an ensemble member to verbally detail the execution of that sound or translate it through description of technique. Rather, the technique arises out of the pursuit of a desired, conceptualized sound.

Great musicians have always believed that technique is not a means to an end. It is an established part of our art that technique does not necessarily lead to expressiveness but rather the converse is true. This does not negate the need for technical proficiency, but it does, however, place emphasis on the artistic element of making music, allowing the psychology of the music to serve as an expressive guide. Consider what James Thurmond has written on this subject.

> Is not one of the most important purposes of music or any other art to give enjoyment? It has been the experience of most of us, after having attended a concert, to hear members of the audience describe the artist's playing as "mechanical," "lifeless," "boring," "devoid of feeling," or some similar expression. Technique in itself is not enough to convey a message; there must be something more – movement, warmth, expression, aestheticism.[55]

Again, this concept owes much to The Inner Game of Music in as much as it clarifies the need to emphasize a larger musical unit, such as an entire phrase, rather than

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[55] James Thurmond. Note Grouping. (Camp Hill, Pa.: JMT Publications, 1983), 19.

creating undue mental pressure on the performer with minutia and over control. Individual, technical deficiencies are overcome in the practice studio with careful manipulation of tempo, articulation, tone, rhythm and dynamic. In the ensemble rehearsal, the larger goal of the phrase, section, and finally the entire work are addressed. The astute conductor will realize this and empower his players to overcome technical weaknesses through awareness of the problems, suggestions for improvement and practice, and reinforcement of the meaning of the music. By setting the standard as an aesthetic one, rather than a technical proficiency level, an expressive performance will result and the needed technical proficiency will be achieved. In short, it is a matter of focus in the rehearsal on solid musical instruction and a trust in one's musicians to diligently practice and strive for the aesthetic.

Also in the arsenal of mental imagery is sensation imagery of touch, taste and smell. All of these images can be useful in eliciting a musical response from the performer, with the degree of response based on the individual's exposure to the sensation projected and their ability to recall those sensations. It is important to note that not all individuals possess the ability to vividly recall visual, auditory, or sensational imagery. Conductors can enhance their verbal and gestural rehearsal effectiveness by understanding their ensemble's limitations as regards their ability to access and employ mental imagery.

In an appendix to Mental Imagery, Richardson includes a questionnaire designed to measure the vividness of an individual's mental imagery.[56] The questionnaire offers

[56] The questionnaire is The Betts QMI Vividness of Imagery Scale and was designed by J. P. Sutcliffe as part of a study dealing with the relation of imagery and fantasy to hypnosis.

seven scenarios for the subject to consider, each dealing with a different type of imagery (visual, auditory, touch, physical movement or kinesthetic imagery, taste, smell, and physiological imagery such as fatigue, hunger, etc.). The subject is asked to define their ability to recall the images presented using the following rating scale:

Rating 1: Perfectly clear and as vivid as the actual experience
Rating 2: Very clear and comparable in vividness to the actual experience
Rating 3: Moderately clear and vivid
Rating 4: Not clear or vivid, but recognizable
Rating 5: Dim and vague
Rating 6: So vague and dim as to be hardly discernible
Rating 7: No image present at all, you only 'knowing' that you are thinking of the object

The above scale and the questionnaire to which it refers can provide insight into an individual's ability to use imagery. While having an ensemble complete such a questionnaire might prove insightful for a conductor, it is not necessary to make formal use of this tool. It is, however, important for conductor to realize that, like having a variety of analogies, it may be necessary to have multiple mental images developed if all members of the ensemble are to be successfully reached. To understand a player's ability to improve his or her musical performance through mental imagery, conductors need to assess the response received when using various images, drawing from other types of imagery when one fails to aid in the attainment of a musical goal.

To clarify the value of mental imagery in musical performance, consider an example from *Hyperprism* by Varèse that was previously used. (See Example 4.2 on page 68.) Recall that the sound begins in the horns and that the percussionists must attach

meaning to their part that reflects the influence of the horns.[57] Careful listening and evaluation of the horns naturally leads to a similar expression by the percussion, hopefully motivated by a desire to artfully layer the ratchet sound into the developing texture. From a verbal description of the sound, the performers could be encouraged to develop a corresponding visual, aural, or tactile image, and should then strive to musically emulate that image.

This is acutely important in the performance of music by Varèse since it is known that he strove to create planes of sound that interacted with and reacted to each other. In truth then, one cannot accurately perform music by Varèse if one can not envision such plane-like movement of sound structures. Through this concept, Varèse changed the demands on musical performers, causing them to see their role as highly independent yet interactive within a given space of time. Borrowing from visual art, we can assist our ensembles to understand this concept more clearly and implement it in a musical fashion. (See Example 4.3)

An interactive yet independent concept of line allows for sounds to overlap yet remain individual, or meld to create new sounds, or repel each other. For this author, this is a difficult mental image to create, yet it seems vital to understand if one is to perform the music of Edgar Varèse. Varèse states his concept of planes of sound in this fashion:

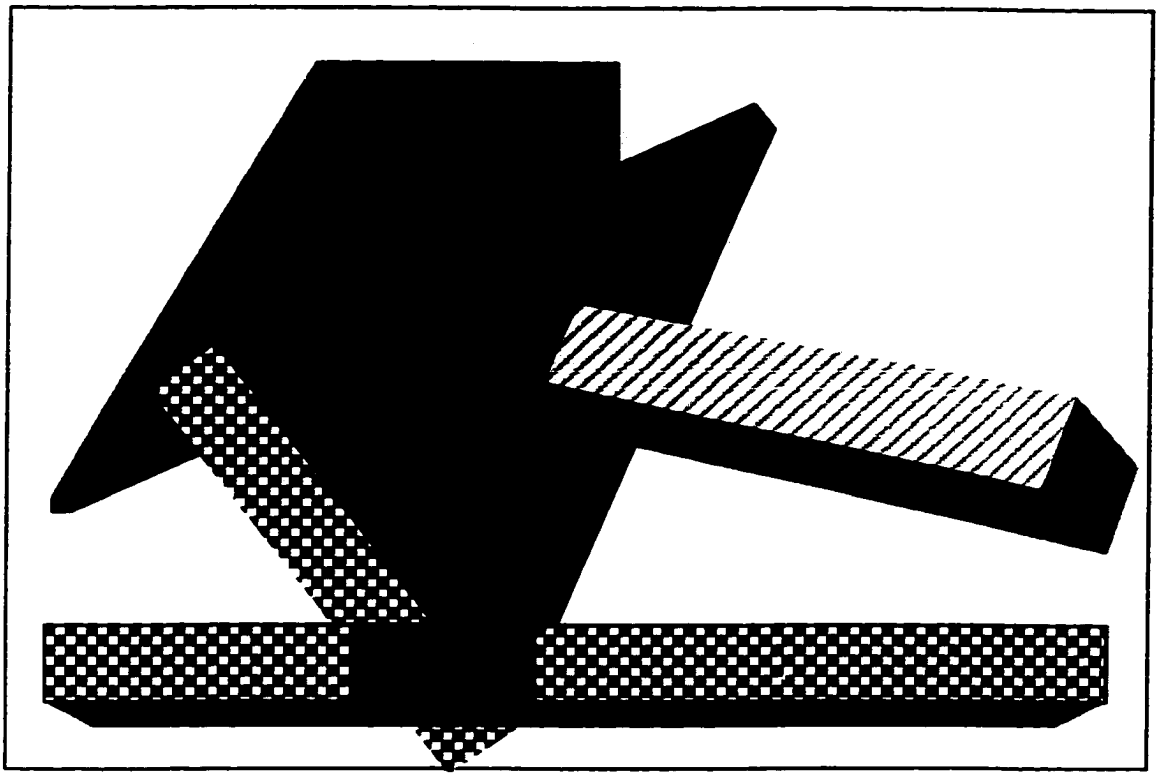
> We have actually three dimensions in music: horizontal, vertical, and dynamic swelling or decreasing. I shall add a fourth, sound projection – that feeling the sound is leaving us with no hope of being reflected back, a feeling akin to that aroused by beams of light sent forth by a powerful searchlight – for the ear as for the eye, that sense of projection, of a journey into space.[58]

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[57] This author is postulating that the order of physical presentation in music presupposes a priority or hierarchy in musical structure, and therefore demands that imitation and emulation become the inherent responsibility of corresponding gestures.

[58] Elliot Schwartz and Barney Childs, Contemporary Composers on Contemporary Music. New York: Da Capo Press, 1978), 197.

Example 4.3: A visual representation of planes of sound, some operating as repellants, some melding with others, but all existing in the same space and time.



In the performance of the example from *Hyperprism*, the players might envision their parts as two distinct planes of sound linked by rhythm and sonority. The sound plane of the horns sets into motion the sound plane of the percussion, not so much from a repellant, colliding or overlapping sense, as from one of penetration and immersion of energy. Like magnets reacting to one another, the essence of the sound dictates its motion and direction.

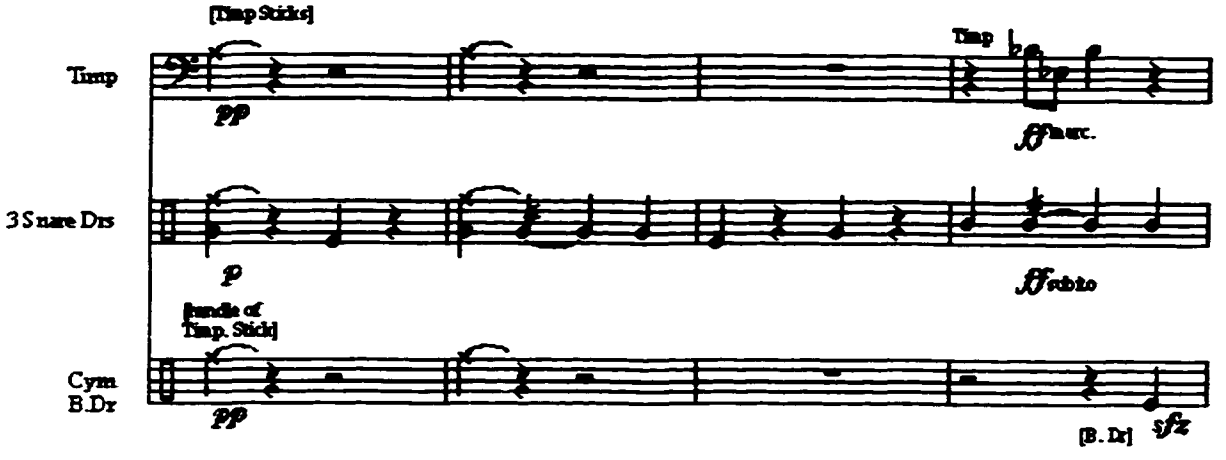
Varèse's concept of musical planes of sound should not be limited to his music. His concept has implications for music that follows his and can be applied when considering blend and balance, providing fresh ways of evaluating and comparing musical performance. After Varèse, consideration of balance and blend must deal with

more than volume and theoretical issues of dominant voices within a chord structure. On the contrary, one should additionally consider the function of any sonority as a repellant, penetrator, projector, or cooperator.

There is logic in this approach when Varèse' techniques are placed in historical context. With the boundaries of functional tonality shattered by Schoenberg, Webern, and Berg, composers turned towards exploitation of rhythm and sonority. These new treatments force the performer to become more analytical and proficient with these musical elements. Cohesiveness in ensemble performance now requires even greater attention to imitation and emulation in regards to articulation, rhythm, and sonority. The following musical examples further illuminate these issues in relation to percussion in imitation and emulation of winds.

Consider the passage from Vincent Persichetti's *Symphony for Band*, illustrated in Example 4.4, where the percussion section imitates the opening statement of the fourth movement (see page 52, Example 3.5 for comparison). The dynamic is similar to the opening of the movement and the rhythmic structure is identical to the composite rhythm of the opening statement. The roll in the snare drum can be perceived as a slurring of two eighth notes relative to the eighth notes in the flute at measure two. The pitch of the snare drums also reflects the melodic contour of the theme, with the accompanying percussion recalling the cymbal colors in the first statement of the theme. For the percussion performers to be most effective, they should recall how the theme was first presented in the winds. Their recall could lead to one possible interpretation that emphasizes the secco articulation in the first three measures, with the drive of the cymbal relating to the march-like quarter notes that underpin the opening phrases.

Example 4.4: Vincent Persichetti, *Symphony for Band*, movement IV,mm. 35-38. Percussion imitation of the opening theme to the fourth movement.



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While the performers must rely on their auditory recall of the opening statement, they should also be lead to understand their role as a linking passage, emphasizing the sudden dynamic shift which propels the listener to a return of the opening motive in the brass at measure 39. Knowing the function of the passage, the conductor might enhance the mischievousness of this musical gesture, lulling the listener with an energized but subtle return of the first theme before the explosive real return in measure 39.

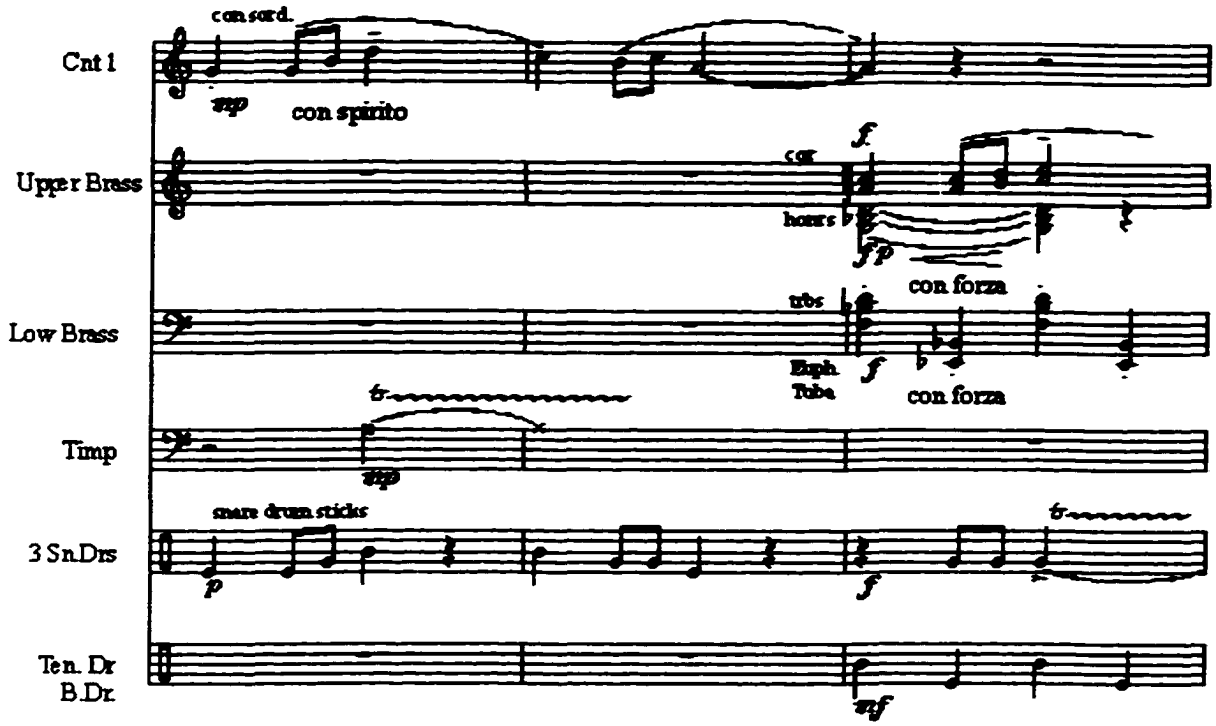
For the conductor, finding that bit of humor in this passage may be the key to developing a more meaningful gesture. The element of surprise, being suppressed in the first three measures, should elicit in the performer feelings of anticipation and excitement. Drawing on their mental images of similar experiences is essential to recalling a more accurate physical response and expressing those emotions musically. The conductor in turn would utilize facial communication skills that anticipate the humor in the passage, cueing and stimulating his ensemble's performance.

Another example of percussion in imitation and emulation of winds can be found in Example 4.5 from measures 137-139 of the fourth movement of *Symphony for Band*. This is a case of vertical imitation, rather than linear imitation. As will be discussed shortly, this passage illustrates emulation of sonority, rhythm, articulation, and the usefulness of Varèse' concept of planes of musical sound.

First consider the more obvious elements of rhythm and articulation. It is clear that the rhythm of the snare drum part is related to the cornet line. Further, the melodic contour of the snare drum part partially mirrors the cornet line. Percussionists cannot do a great deal to manipulate their articulation since snare drum sticks will necessarily create a fairly *staccato* articulation. There are, however, some choices to make. The percussionists can choose to blend with the cornet by experimenting with different playing areas on the drum to effect tone and resonance. In addition, wood or nylon tipped sticks and a variety of bead diameters to soften or strengthen the articulation may be chosen.

The conductor can also point out that the musical direction *con spirito* should be applied not only to the cornet, but to the percussionists as well. This direction, which interpretively suggests the cornet player should lean through the half-note of the first measure and execute a 'lively' *staccato* articulation on the downbeat of the second measure, should also move the percussionist to similarly emulate the cornetist through dynamic nuance.

Example 4.5: Persichetti *Symphony for Band*,mm. 137-139, movement IV. Vertical imitation and emulation of winds by percussion.



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The concept of projection will give further meaning to the cymbal entrance, which enters on the high point of the phrase. This entrance is strongly approached via the rhythm on beat one of measure 137. The rhythmic energy in the first beat, combined with the implicit crescendo on the long pitch, produce momentum in the phrase suggesting the cymbal projects its release into space. The projection of the cornet pitch and cymbal sound is promoted also by the *staccato* release in the cornet at measure 138 on beat one. A useful mental image could be that of a pitcher throwing a ball. The energy or wind up of the pitch is couched in the rhythmic structure on beat one of measure 137. The arch of the throw, with all its energy in forward thrust, is expressed

on beat two through the half-note cornet pitch and cymbal roll in the percussion. Finally, the release is given at beat one of measure 138, expressed with the *staccato* quarter note as the release of the ball.

The conductor might encourage the percussionist to consider the concept of projection as inferring a more subtle beginning to the roll with a slight crescendo to elicit a three-dimensional aural effect of projection. Such subtlety in the beginning of the roll would also afford better blend (*cooperation*) with the cornet. While the two instruments begin in cooperation, the continuation of the roll beyond and over the rest of the rhythmic passage provides a sense of separate planes of sound with the cymbal projecting beyond the cornet and ultimately transferring the listener to the entrance of the low brass.

The timbres Persichetti employs also imply a need for imitation. The muted cornet inherently has a more metallic quality and will produce a vibrating, energetic and somewhat agitated sound. The logical counterpart to this sonority is the suspended cymbal Persichetti used, and his instruction to roll with wooden ends of timpani sticks heightens the agitation of the cornet sound. What is left to the conductor and percussionist is the choice of a cymbal, and that decision should be based on a sonority that best compliments the cornet.

Another master composer of the twentieth century, Olivier Messiaen, can be studied for issues of imitation and emulation between wind and percussion. Unlike Varèse, whose imitative sonds arise from abstract treatment of sound, Messiaen set out to imitate and emulate things found in nature, specifically color and even birdsong. Messiaen accomplished these imitations through a unique harmonic language and a

complex rhythmic vocabulary that was influenced by Hindu rhythms.[59] This, in combination with his interest in previously unused instrumental combinations, is cause to consider imitation and emulation in a slightly different context.

Imitation has been demonstrated to occur simultaneously, horizontally, and vertically, either in close proximity or over wider intervals of time. In Messiaen there is cause to consider imitation and emulation in the more broad sense of the musical gesture. Shape and contour become more important than specific notes and articulation because of the way in which Messiaen combined instruments to create unique sounds. In one sense, Messiaen is very much like Varèse in that he is less concerned about traditional execution of any one instrument and more concerned with the timbres they can produce. While Varèse appears to be focused on sound in general, Messiaen is more interested in sounds and rhythms from nature. Imitation and emulation in Messiaen's music results less from individual instruments and more from combinations of voices and an overriding musical principal that is established through the musical gesture itself.

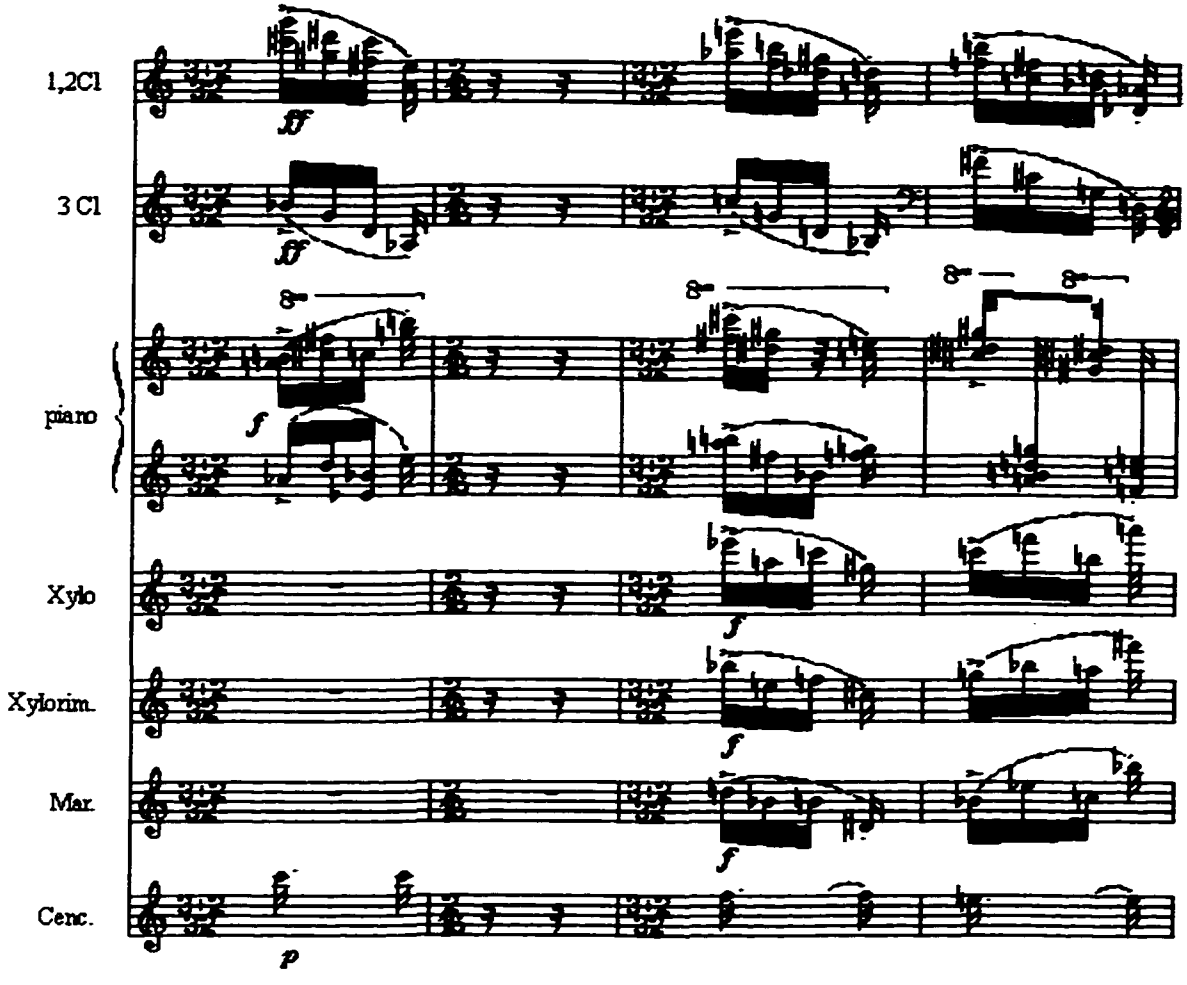
Consider Example 4.6 from *Couleurs de la Citè Céleste*. Notice that the piano and clarinet gestures in measure 36 are contrary in motion. Their articulation is identical, though their dynamic is not, and the presence of the piano in a fairly high register provides resonance to the clarinets. When the mallet instruments enter in measure 38, their initial gesture forms an inverted shape of the piano entrance at measure 36, countered in the following measure where the shape mirrors that of the piano. The piano, with a downward thrust, has taken on the shape of the clarinets at measures 38-39. Two

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[59] Olivier Messiaen. The Technique of My Musical Language. (Paris: Alphonse LeDuc, 1956), 14-15.

mallet percussion instruments, specifically the xylophone and xylorimba which are transposing instruments, retain the role of resonance through their high register. The marimba, however, is grounded to the clarinets in register and functions like musical glue, binding these two parts together.

Example 4.6: *Couleurs De La Cité Céleste* by Olivier Messiaen, rehearsal 36.



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Also worthy of exploration is the similarity of articulation in the mallet parts. This is puzzling at first, since the mallet instruments cannot slur like the clarinet or other wind instruments. Even the piano can more effectively contribute to the style of slur through connection of notes, either through use of pedal or through fingering connection. There is, however, going to be a fairly articulate rhythmic identity in these voices due to the manner in which sound is produced on mallet instruments and the natural length of sound inherent to the xylophone and marimba. Since this is nearly impossible to remove completely, the conductor may wonder what Messiaen was hoping to achieve.

Consider that the mallet instruments function as resonance and focus on the explicit dynamics Messiaen indicated in the score. Resonance is defined as the intensification and enriching of a musical tone by supplementary vibration and as having a quality of richness or variety.[60] It is possible that Messiaen desired that the clarinets should dominate the texture and gave the dynamic assignments as an explicit means of balancing the instruments. This interpretation gives precedence to one instrument over another, and necessarily relegates remaining instruments to a supportive role. Following this interpretation, the function of the mallets and piano as resonance may be lost. Using the previous definition of resonance, however, the instruments perform as equals in the texture and the initial interpretation is clarified. Resonance does not necessarily imply that one or more voices should be considered a weaker element.

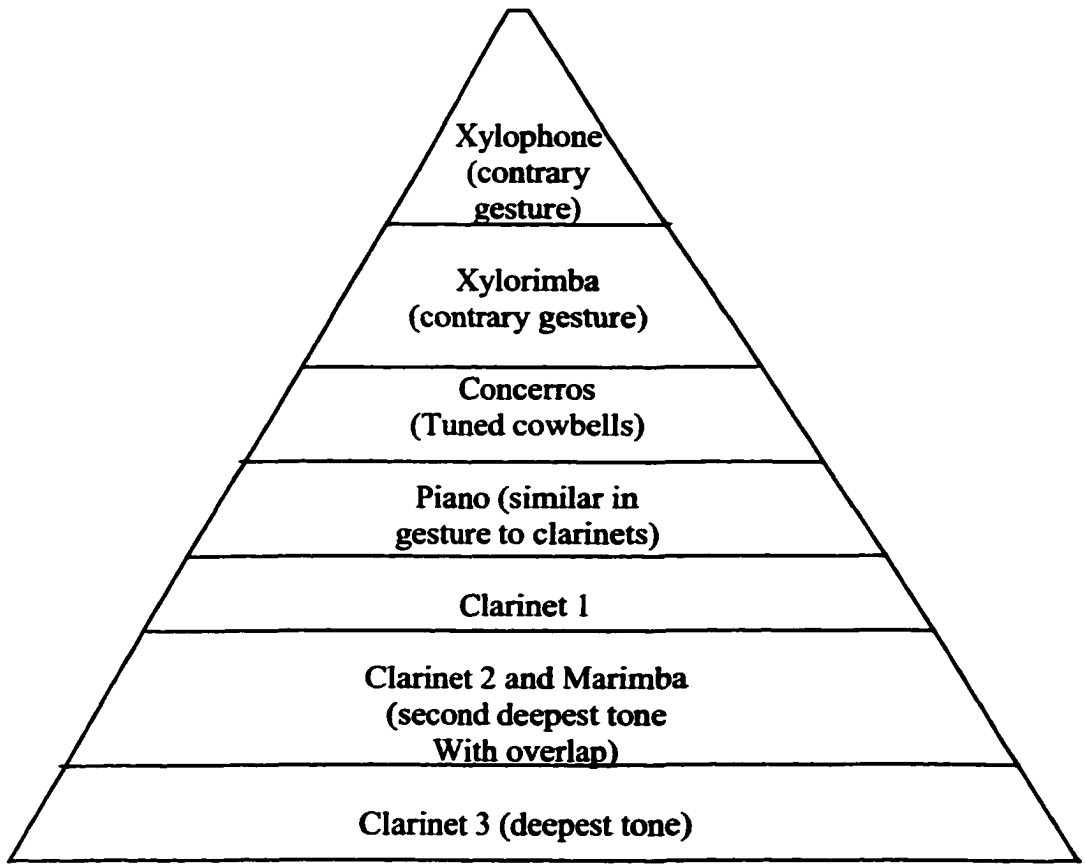
However, if the conductor believes Messiaen's dynamic indications are meant to account for the nature of the instruments (i.e. he understood that the xylophone could easily overpower the clarinets), then the dynamics are revealed as equalizing indications.

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[60] Webster's New Collegiate Dictionary, p.978.

Through this understanding, the conductor views the dynamic shading as establishing a hierarchy of voices, one that demonstrates the reliance of the voices on each other in the texture. That hierarchy could be expressed through a pyramidal shape, where instruments that need to perform a strong dynamic are found on the lower level of the pyramid and instruments that provide resonance and a somewhat lighter dynamic will be found on higher levels of the pyramid. (See Example 4.7) Again, this pyramidal diagram does not indicate that the instrument at the highest point is the most prominent.

Example 4.7: Pyramidal hierarchy of voice strength implied through dynamic and register related to the orchestration of example 4.6.



The interpretation of the dynamic as indicating a primary role in the texture is logical if it is believed that the percussion function in a role of support, as an overtone in

the texture, but not if the percussion voice is considered to function as resonance. Interpreting the dynamic as relevant to resonance insures that the clarinets perform with strength and conviction to meet the inherent quality of the percussion instruments.

Having determined a possible intent of the dynamics, the conductor is faced with how to accomplish the articulation in the mallet instruments and why Messiaen indicated that these instruments are to slur, given that he surely was aware of the inherent ambiguity of such an indication. It is here that we can see Messiaen demanding that the percussion instruments function in direct emulation of the wind players.

The problem remains of course, for the percussionist to produce this gesture. The solution is not difficult if the conductor realizes that a true slur can never be accomplished. Much like the trombone, which requires a light tongue in slurred passages, there will always remain some sense of articulation by the percussion. This articulation can be masked to some degree on mallet instruments by choice of mallet, playing area on the key, playing area on the mallet (if the mallet is wrapped and somewhat oval shaped) and dynamic manipulation.

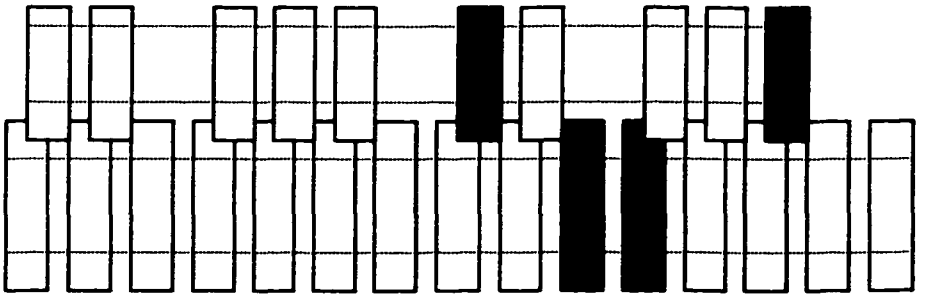
One possible interpretation involves emphasizing the impetus of the two slurred gestures. If emphasis is placed on the first note of the slur and a slight diminuendo is made over the duration of the successive notes, the articulation of the remaining pitches can be diminished, but not completely removed. (See Example 4.8) To further diminish the obviousness of the remaining articulation, the performer might explore various playing areas on the keys of the instrument.

Example 4.8: Messiaen, *Couleurs de la Cité Céleste* (mm 38-9). Accomplishing a slur on a xylophone.



Obviously, playing directly over the resonator on a key will provide a more full sound than playing closer to the node or on the edge of the key. In example 4.9, a diagram of a keyboard is shown to highlight how the performer might further diminish the obviousness of the articulation. The keys struck are highlighted and a suggested playing area is marked by the solid dot. Nodal points are indicated by the dotted line in the diagram.

Example 4.9: Diagram of performance area to diminish articulation for a slurred gesture.



The solution is not as simple as employing a decrescendo in combination with a move towards the node, however, because there is an issue of register as well. Higher pitches on wooden mallet instruments have less natural resonance and length. The performer will have to compensate for these differences with varied levels of intensity and more exaggerated dynamic contrasts when dealing with descending slurs. If using a

wrapped mallet, exploiting playing surfaces on the mallet head to further soften the articulation after the initial attack is possible.

When dealing with ascending slurs, the performer will have less to be concerned with since the instrument naturally loses some of its resonance at high levels. In these cases, the diminuendo may hide the articulation and contribute to the sense of slur. When this is the case, there may be no need to manipulate playing areas on the key or mallet head.

An interesting historical note relating to *Couleurs* and the increased use of percussion in the twentieth century may also assist this discussion. When commissioned by Heinrich Strobel to do this work, Messiaen was unable to stay within the proposed instrumental restrictions. Strobel's desired instrumentation was three trombones and three xylophones. Messiaen added the piano, marimba, metallic percussion, clarinets and a full orchestral brass ensemble to better suit his compositional desire. Messiaen's choice of instrumentation provides an extreme variety of registers. This variety is most certainly tied to his desire to depict the certain issues of the Apocalypse, with the high register instruments acting in conflict with the low register instruments, set apart as if one represented heaven and the other the depths of hell.[61] Messiaen himself indicated that the choice of instrumentation had more to do with his desire to emulate the timbres of birdsong.[62] In general, however, it may be noted that the addition of the other winds and percussion instruments provide unique blending possibilities and was necessary to accomplish imitation of birdsong.

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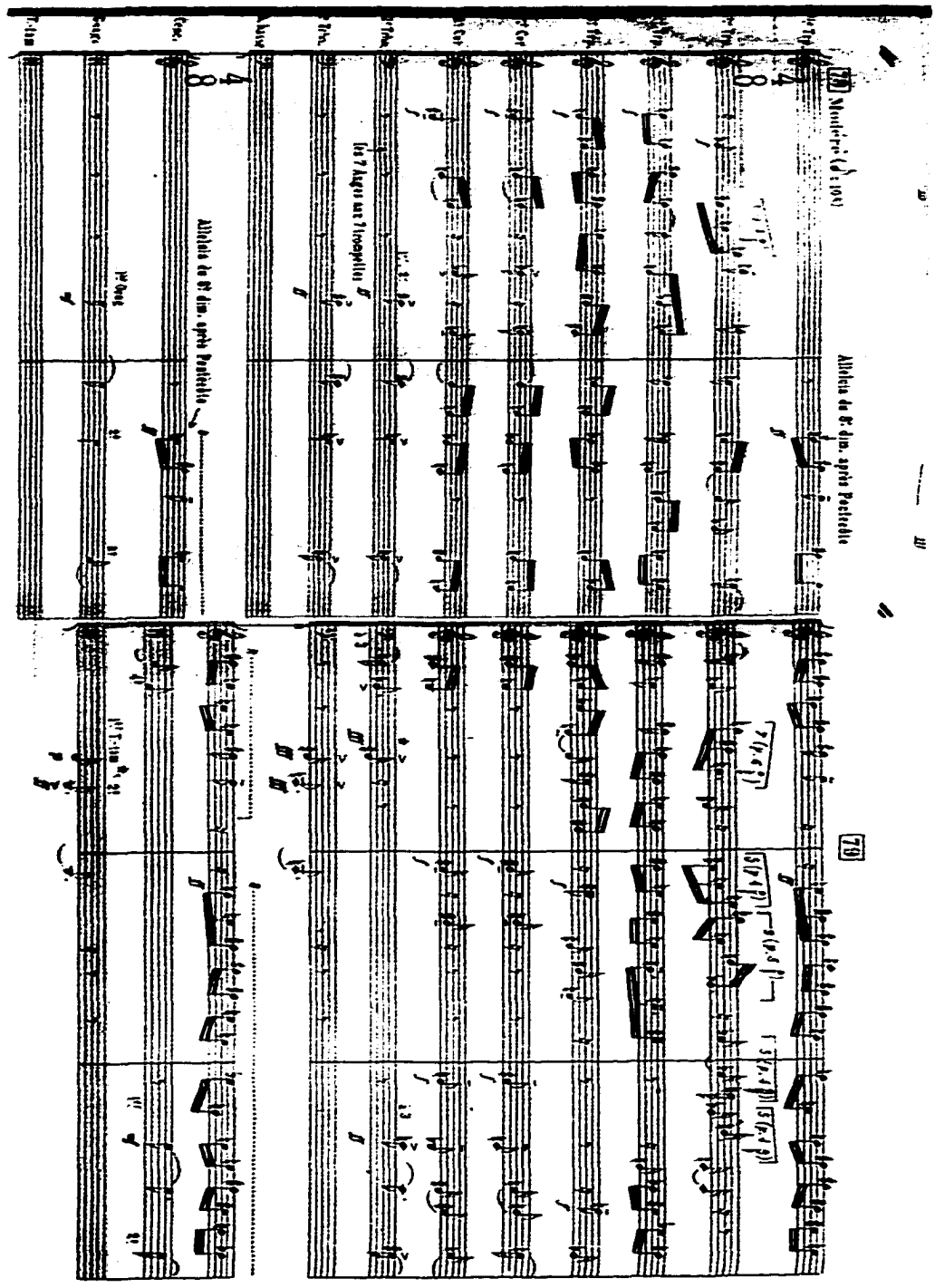
[61] Paul Griffiths, Olivier Messiaen and the Music of Time. (New York: Cornell University Press, 1985), 202.

[62] Claude Samuel, Entretiens avec Olivier Messiaen. (Paris: Pierre Belfond, 1967, English translation, London: 1976), 113.

Another example of percussion in emulation of winds from *Couleurs de la Cité Céleste* may be useful. Consider the relationship of the cencerros to the piccolo trumpet and the gongs to the bass trombone. (See example 4.10.) If the percussion do not think of their role as an extension of and resonance to the winds, much will be lost in the interpretation of this passage.

To understand this, conductors should consider the choice of instrumentation and the means by which the percussionist can emulate wind instruments. The bass trombone, used by Messiaen for its apocalyptical quality, is enhanced by the use of gongs. Clearly, the gong provides depth and climax to the first and second trombones which are used in the first two measures after rehearsal 78. When the bass trombone does enter three after rehearsal 78, the full force of this relationship becomes more apparent. Four gongs and two tam-tams are utilized to complement the descent of the trombones, their warm and full resonance surrounding the trombone sound like an aura. This image itself may lead the percussion to a more meaningful understanding of their role in this passage. In this case, the percussionist would avoid a definitive attack on the instrument by sufficiently warming each gong prior to striking it. The fact that this passage is performed in vertical alignment with the trombones is also cause for the percussionist to consider this interpretation. While the trombone passage is accented, these accents might be interpreted less as an increase in dynamic or tongue at the onset of the note (relative to

Example 4.10: Messiaen, *Couleurs de la Cité Céleste*. Example of percussion in emulation of winds.



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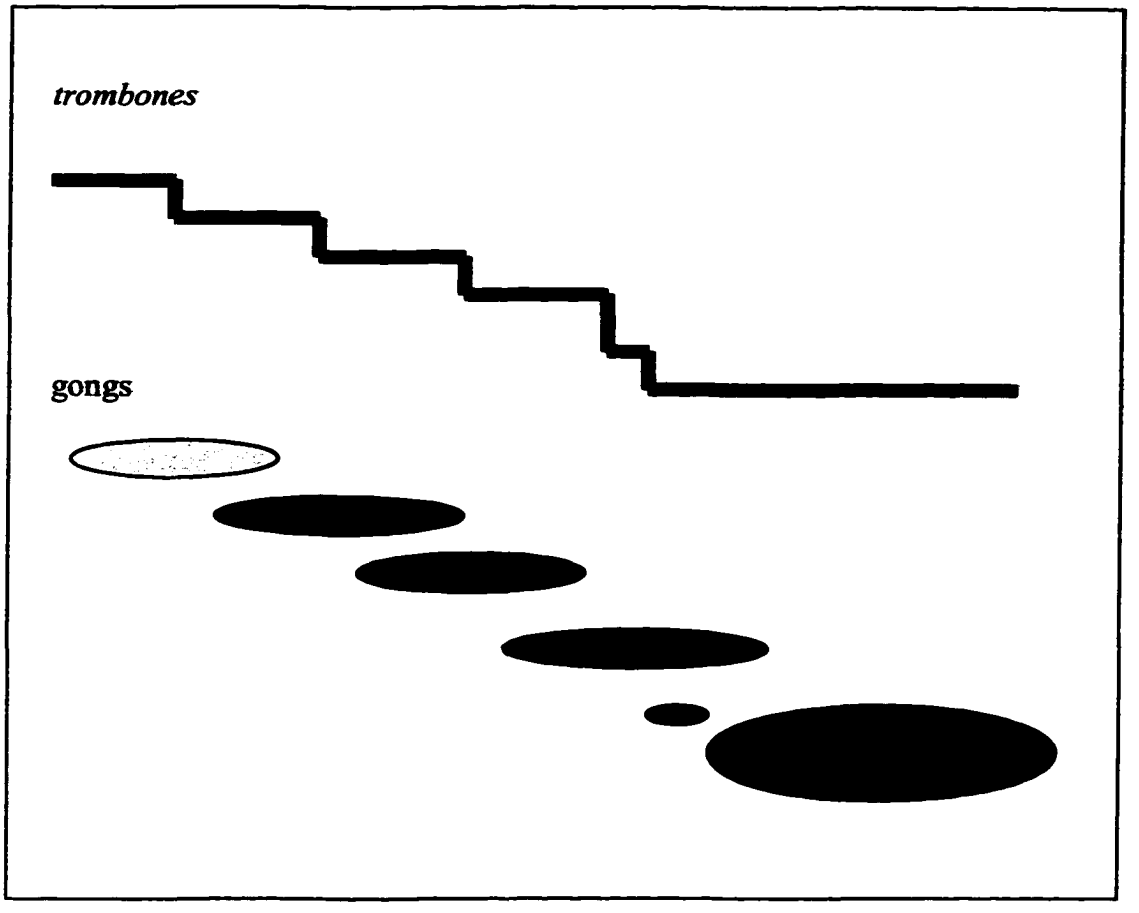
the indicated dynamic)[63] and more an indication of force exerted *through* the note, giving emphasis not just to the attack, but the whole of the note. The above interpretation would coincide with the natural tone production of the gong. A gong, when struck, does not reach its fullest sound immediately. The sound ripples outward after being struck, ballooning to a full, warm tone. There is also a natural experience of crescendo from the gong due to the increase of overtones. Additionally, the gong underpins and supports the trombones. While the trombone part relentlessly pushes forward, the gongs provide an undulating wave on which the trombone sonority rides. This idea is expressed visually in example 4.11 and again, reinforces the concept of planes of sound espoused by Varèse.

The trombone descent is visualized in Example 4.11 as a solid, thick line, while the gong part is represented with ovals, indicating the instrument's undulating quality. Interestingly, the height of the sound wave produced by each gong will likely overlap the rhythmic changes in pitch by the trombones. This fact is not to be feared, but celebrated as it adds to the waves of color one might experience in a descent to the abyss. One need only imagine the kaleidoscope of colors experienced in a fall into darkness – light retreating, diminishing in intensity and changing in hue as the source of light recedes further and further into the distance.

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[63] See Arthur Weisberg's The Art of Wind Playing, p. 11, for his definition of how to execute an accent. If this method of playing accents is employed, then the forcefulness and weight of the descending musical line in the example by Messiaen may be lost. An reinterpretation of Weisberg's definition may be necessary, developing an approach that considers the weight of the line and its forward momentum. Such momentum might best be expressed with a definitive attack and sustain of the note.

Example 4.11: Visual representation of the complimentary nature of the gong and trombone parts at rehearsal 78 of *Couleurs de la Cité Céleste* by Messiaen.



The musical style of Olivier Messiaen causes consideration of instrumental blend not merely from the view of dominance, but from a hierarchical dynamic perspective that fosters equality. Additional examples of Messiaen's music will be considered later in this document, specifically regarding his rhythmic vocabulary and its impact on wind and percussion performance. For now, other examples of percussion in imitation of wind writing will be discussed.

Karel Husa's *Music for Prague, 1968* provides excellent examples of percussion performing in imitation of winds. Initial investigation of the second movement draws attention to the involvement of the mallet parts, not merely because they are used but

because they are used incessantly.[64] Furthermore, the mallet voice is not mirrored or imitated by other wind instruments. This use establishes the percussion as equal partners in the musical process.

In his dissertation, Craig Pare makes note of Husa's percussion writing, citing it for its sophistication in, among other points, serving as an integral part of the compositional process.[65] Husa said that the role of the mallet percussion in the second movement of *Music for Prague, 1968* was to express anguish and obsession.[66] In terms of their compositional function, these instruments present the tone row, and therefore provide the underpinnings of the movement.

That Husa stated his objective for the mallet parts provides integral information for developing a meaningful interpretation of this movement. Knowing the composer's intent allows conductors to pursue more accurate interpretations, and conductors can cling to Husa's terms "anguish" and "obsession" to aid in the development of their musical concept. More importantly, couched in the importance of this role is an implication of equality between the percussion and winds. Because the mallet percussion instruments perform material not found in the winds and because that material is vital to the style of composition, equality is further inferred. Very few works that appear prior to this date provide such an opportunity for percussion. That the percussion should have such a primary role is in itself an example of percussion in imitation of the winds.

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[64] There is only one measure in the entire movement that has no mallet percussion. That measure, however, (five after rehearsal K), does contain two sustained tones from the previous measure in the vibraphone.

[65] Pare, 82.

[66] Karel Husa. "Notes on Music for Prague, 1968." 1971 Book of Proceedings: College Band Directors National Association – Sixteenth National Conference (January 27-29, 1971): 181.

Equality in musical performance necessitates imitation. Since the level of sophistication in percussion writing dramatically increased during the middle to latter parts of the twentieth century, it is logical that percussionists would look to their wind counterparts for modeling and emulating their musical expression. Furthermore, an increase in the sophistication of writing for percussion creates greater concern for blending these instruments effectively. It would follow that mallet instruments, as opposed to non-pitched percussion, could provide the quickest link to expanding percussion use since they could most closely emulate the linear expressive possibilities of their wind counterparts.

This seems to be the case with the role Husa provides for the percussion in *Prague*, which is fairly unique for large wind band composing around that time (mid to late 1960's). Only Persichetti in *Symphony for Band* comes close to giving percussion instruments the equality that Husa's does, but Persichetti's instrumentation is much more limited, especially in terms of mallet percussion. While the role Persichetti allowed them was certainly unique for that time and added to the development of non-pitched percussion, it is fairly limited by today's standards.

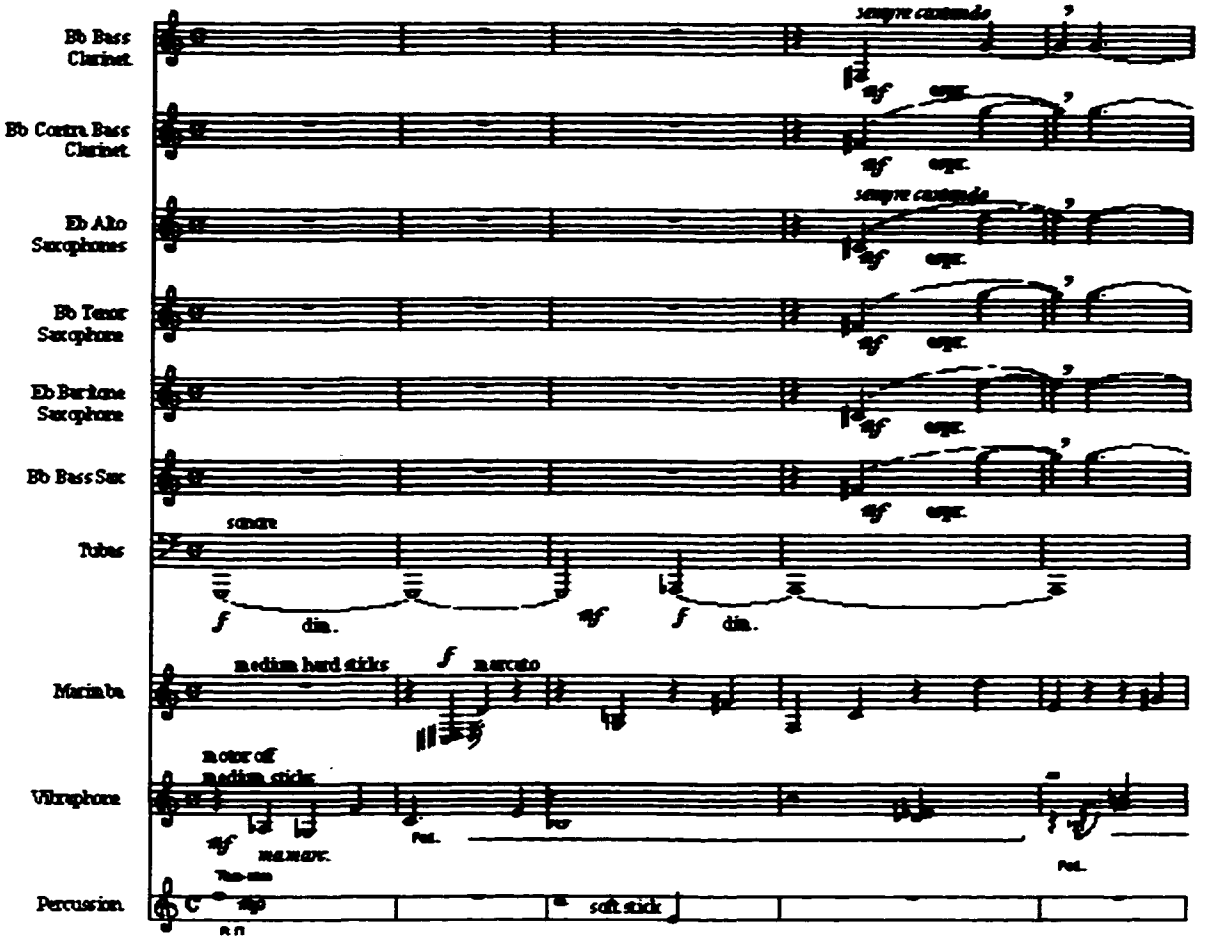
Be reminded, however, that Husa himself wanted the mallets to provide an atmosphere of obsession and anguish. Conductors and performers strive to convey these emotions, but how to do so specifically from a mallet instrument is more problematic. Possible solutions can be found by exploring imitation and emulation of the winds.

It is unfortunate but fair to say that many musicians view percussion as an instrument over which the player has little control.[67] Conductors who recognize the potential of the instruments would do better to suggest more appropriate musical sounds from the percussion. Even if uncertain of how to accomplish this, one principle remains constant: musical concepts are not subservient to instruments. Desired phrasing must be achieved if music is to have meaning, regardless of what instrument conveys it.

The question of how to approach the interpretation of the mallet parts in the second movement of *Music for Prague, 1968*, in its most basic terms, is no different than if a wind section had that same musical content and intent. The excerpt in Example 4.12 contains the opening measures of the second movement. Almost instantly, Husa's concept of anguish can be observed. While many conductors may have difficulty in helping the percussionists express anguish, this may be overcome by considering how to interpret these parts from the perspective of wind performance.

[67] Regarding percussion performance, this author has heard many times, even from respected colleagues, "Well, you just hit the thing!" We must be cautious, however; if we treat these players and their instruments as something less than musical, then the result will be unmusical!

Example 4.12. Karel Husa, *Music for Prague*, 1968, Movement II,mm. 1-5.



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To begin, conductors consider what techniques wind players could employ to express the great sorrow or mental and physical pain being expressed. Wind players would be encouraged to consider style of attack, length of note, direction of line, points of emphasis and points of egress. These concepts are applicable to percussion instruments as well, though some may require more thought and effort.

For instance, in marimba playing note length cannot be effected very easily and is made especially difficult when high registers are used. Note length can be manipulated, however, if performers are observant. An obvious option to affect length is to roll, but this is artificial and clearly not called for by Husa in *Prague*. However, the perception of a note's length is affected by the type of mallet used, area of stroke on the bar, and style of stroke, similar to what was discovered in Messiaen's slurred gestures in *Couleurs*.

To give length to a note, percussionists should strive for a firm, but not overbearing attack.[68] The mallet used cannot have a core that is too a hard, and though Husa calls for a medium hard mallet, there is a vast selection of mallets from which to choose that might be considered 'medium hard.' In this example, Conductors may consider as a reference two sounds, those of the clarinet in the chalemaeux register and a pizzicato string bass. Relying upon the training of the percussionist and the conductor's own concept of the sound, a suitable mallet can be found using these sonorities as guides.

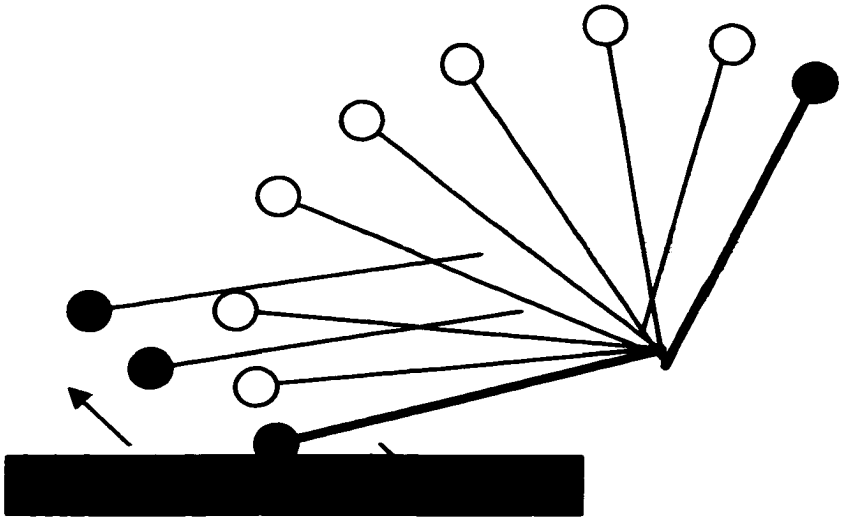
Having made a mallet choice, conductors further reach a conceptualized sound by guiding performers towards a proper style of stroke. A suitable stroke would be executed with a fairly rounded arch of the wrist. As the mallet makes contact with the key, the stroke should rebound, accompanied by a sense of follow-through in the wrist. A slight lift of the arm will ensue naturally as the mallet is drawn away from the key. An analogy to the stroke might be related to a drop of water making contact with a calm body of water. Imagine the droplet as it makes contact with the smooth surface of the water. The droplet penetrates the surface with an equal upward reaction of water, energy being

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[68] As indicated in the score by the term '*marcato*.'

dispersed outward in to the ripples or wake of the surface. Example 4.13 provides a visual representation of this described stroke.

Example 4.13: Recommended style of stroke to achieve *marcato* articulation and promote resonance of the wooden keyed instruments.



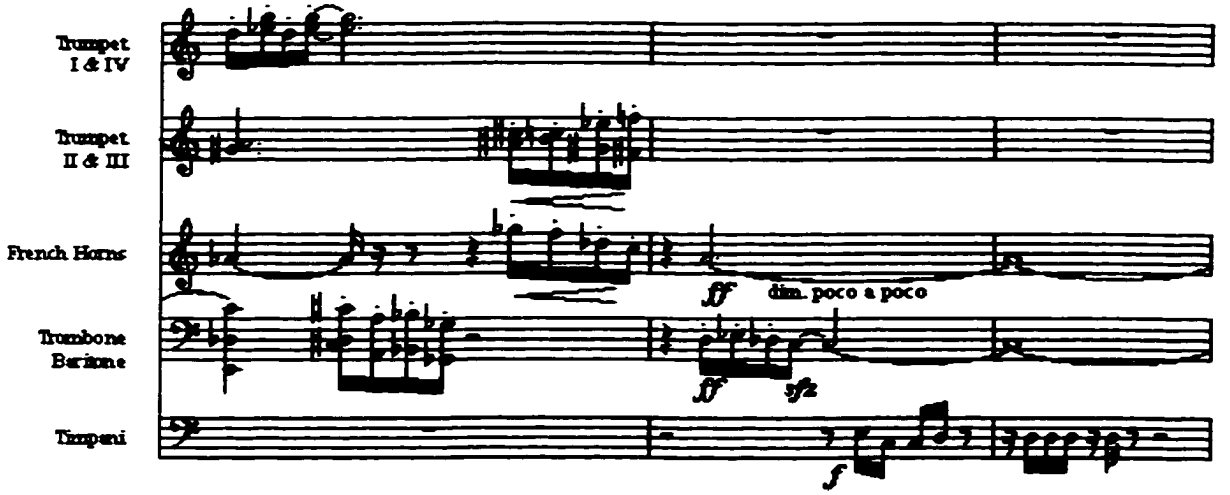
Though conductors often miss this opportunity, this style of stroke would easily transfer to a conductor's gesture. In conducting, this gesture would appear somewhat labored, clearly defined, and almost ponderous. There would be an easily identifiable ictus as well as a pulled travel. Were a conductor dealing with wind instruments, they might recommend a *pesante* articulation to deepen the perceived mental anguish in the line. This same direction towards heaviness of heart and mind would benefit the percussion, placing them more clearly in the *melos* of the work and exhibiting itself physically in the style of stroke described above. Of course it can also be said that as a conductor attempts to emulate the percussionist's style of stroke, they are employing imagery techniques.

In the vibraphone part of this same movement another example of percussion imitating and emulating winds can be found. Three measures after rehearsal K, the motor

of the vibraphone is engaged, giving greater color and tone enhancement to the instrument. The motor is left on for the next seven measures. No other mallet instrument possesses this capability. It is a direct result of percussion imitating the character of the human voice and wind instruments. Husa exploits this possibility, melding the vibraphone sound with the surrounding winds, creating a flute and clarinet-like sonority.

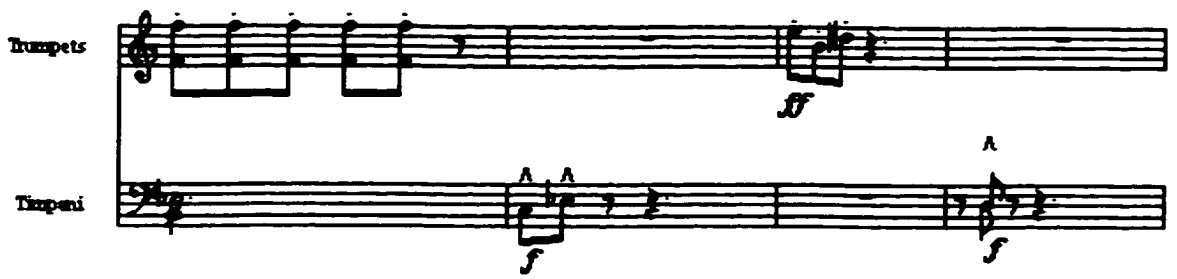
Another possibility of imitation and emulation is observable where themes and motives initially stated by winds are completed by percussion. This possibility is apparent in movement I of Husa's *Music for Prague, 1968*. Through this kind of imitation, equality of percussion is reinforced. Examples 4.14a through 4.14c include thematic passages begun by winds and completed by percussion.

Example 4:14a: *Music for Prague, 1968*, movement I, mm. 9-12 after rehearsal D. Themes begun by winds and completed by percussion.

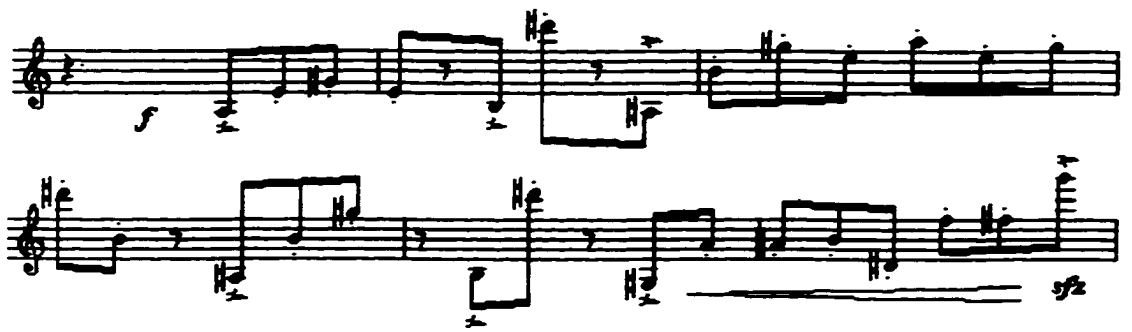


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Example 4.14b: *Music for Prague, 1968.* Movement IV,mm. 7-10 after rehearsal A. Timpani on thematic fragment.



Example 4.14c: *Music for Prague, 1968*, movement IV, thirteen after rehearsal B to rehearsal C. Xylophone in imitation of clarinets which state similar material from a previous woodwind passage.



Through the previously investigated works by Messiaen and Husa, conductors sense a changed role in percussion, one that evolves from using percussion in a role equal to winds. Imitation and emulation remain at the heart of this trend. Granted, it is possible this trend is a byproduct of advances in compositional processes and that increased in use of percussion during the past century is directly related to evolving thoughts on tonality and sonority. Regardless of the cause, there is no doubt percussion has achieved an equalized role in the wind ensemble through imitation and emulation of winds requiring conductors to consider the interplay between these families of instruments in more detail. This equalization of role has also created challenges for wind players as will be demonstrated in the following chapter.

Chapter V

Wind Instruments in a Percussive Role of Rhythmic Punctuation

The rhythmic vocabulary in the repertoire of the wind ensemble has dramatically increased over the past one hundred years. Greater rhythmic activity finds a natural release in percussion performance, providing more involvement and personal interest for the player. In recent literature this is expressed where battery percussion activity is used because these instruments deal primarily with rhythmic expression.[69] Furthermore, it is possible that as harmonic and tonal possibilities expand, so too does the desire to utilize these possibilities within more complex rhythmic structures in percussion and winds.

Many examples of rhythmic dexterity exist in solo works, but composers have generally been rhythmically conservative in ensemble music. This is evident in early wind and percussion repertoire and is likely a result of expected difficulties in dealing with complex rhythms in large groups. Furthermore, the history of the band movement, being comparatively brief to the orchestra and choir, encourages the supposition that our rhythmic vocabulary would have to evolve from simple to complex, much the way our harmonic vocabulary developed. Advancements in instrumental technique influence growth in rhythmic vocabulary, similar to the manner in which a child's language develops. Evolution of rhythm is distinguishable among the composers previously

[69] This can be observed through an increased use of multiple toms, which are a rarity prior to 1950. Much is owed to the marching band for furthering the concept of multiple drums and tonal bass drums, suggesting their potential to composers and making their acceptance in the concert band possible.

examined and will be evidenced as well by composer's works in the remainder of this chapter.

Rhythmic vocabulary is expanded continually by composers and performers who increase the parameters of what is possible. Often, such individuals borrow from cultures outside of Western-European influence, devising a means of notation as necessary. Through practice by composers, these new rhythmic complexes are assimilated into common practice.

From the classical period to the present, composers are at the forefront of rhythmic development. One need only compare the rhythmic vocabulary in the ensemble music of Haydn to Mozart, of Mozart to Beethoven, of Beethoven to Berlioz, Berlioz to Wagner, Wagner to Strauss, Strauss to Stravinsky, to comprehend rhythmic evolution. Solo literature parallels this development where virtuosic performers are exploited, thus providing inspiration to composers to make use of new techniques, sonorities and rhythmic possibilities.

The expansion of our rhythmic vocabulary has not been limited to the percussionist. Composers have explored a complex rhythmic language in all instruments. This is observable in a variety of twentieth-century works. Perhaps most notable are Stravinsky's *La Sacre du Printemps*, where primal drumming is accomplished in the string section, and *L'Histoire du Soldat* with its complex metric/rhythmic vocabulary. The continuation of this rhythmic evolution is found in Messiaen's *Couleurs de la Cité Céleste*.

Messiaen described his rhythmic and metric vocabulary as being ametric, meaning free yet precise rhythmic patterns in opposition to measured or equally barred

music.[70] Greater understanding of his work requires understanding Messiaen's rhythmic and metric impulses. Just as Schöenberg codified the twelve-tone system, Messiaen codified a new rhythmic applications, one he directly linked to Hindu rhythm.

Messiaen expanded the rhythmic palette through well-conceived techniques. These include augmentation and diminution, adding values to rhythms, emphasis on function in rhythm in a grouping of upbeat (preparation), accent , descent, termination, use of canon, retrogradable and non-retrogradable rhythms, four methods of rhythmic notation, and concepts of elimination in development of themes and motives.[71] These techniques are employed systematically in much the same way the twelve-tone system is used. To successfully perform a work by Messiaen, a conductor must become familiar with Messiaen's compositional language and intent.[72] Messiaen's rhythmic vocabulary exemplifies a high point in rhythmic evolution, so much so that even while other works demonstrate increased complexity of rhythm, relatively few others match his organization.

To further illustrate rhythmic evolution in twentieth-century wind literature, consider other works that contain a high degree of complexity, such as Husa's *Music for Prague, 1968.* The rhythmic language in this work does not merely pose moments of difficulty, but is relatively complex throughout, especially in counterpoint. A case in point is the third movement, which is devoted entirely to percussion. Perhaps most

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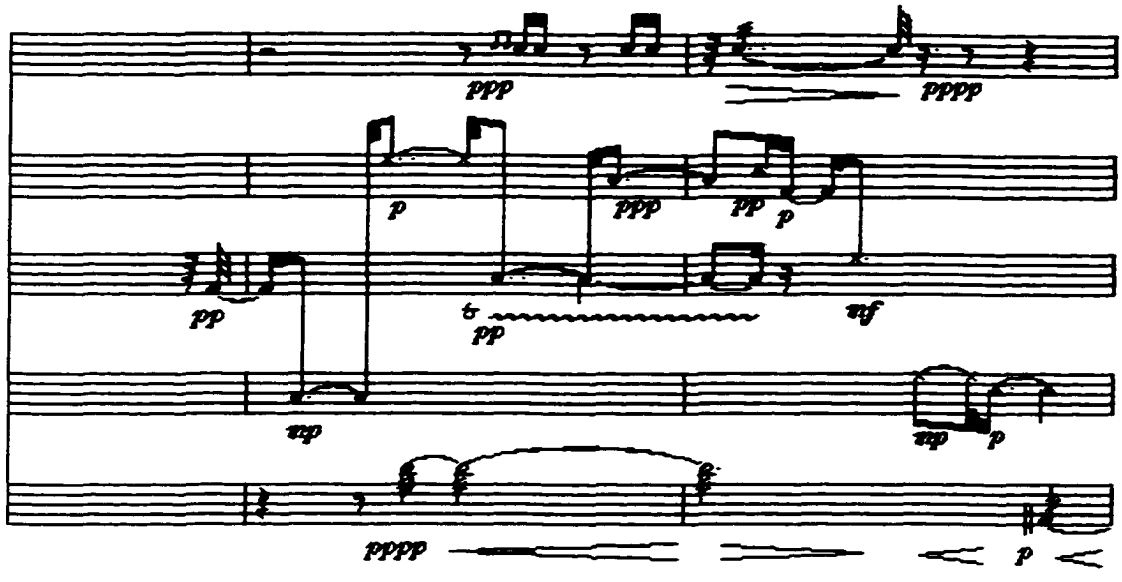
[70] Olivier Messiaen (translated by John Satterfield), The Technique of My Musical Language, (Alphonse Leduc, Paris: 1956), 14.

[71] See Messiaen, The Technique of My Musical Language for thorough explanation.

[72] When first encountering Messiaen's *Couleurs de la Cité Céleste*, this author was awestruck by the rhythmic and harmonic complexity, not only for the performer, but for the conductor. It was not until reading and rereading Messiaen's The Technique of My Musical Language that comprehension of the construction of the music was possible. It is a fascinating work requiring tremendous effort on all performers who attempt it.

striking is that the parts appear in score notation and that the rhythmic structures are divided between performers in pointilistic style. (See Example 5.1)

Example 5.1 Karel Husa's *Music for Prague 1968*, movement III, interlude excerpt, mm. 3-4.



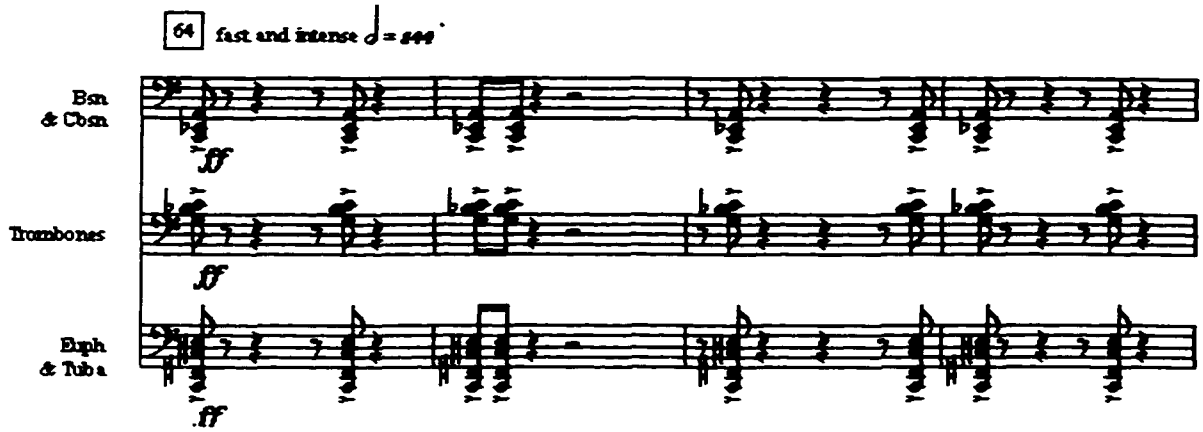
Music for Prague 1968 by Karel Husa
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Works like Husa's *Prague*, and Persichetti's *Symphony* demonstrate the need to discuss rhythmic evolution from the perspective of how wind instruments are used for rhythmic punctuation, a role relegated primarily to the percussion. Still other works are valuable to understanding this including David R. Gillingham's *Heroes Lost and Fallen* (1991) and *A Crescent Still Abides* (1998).

Gillingham's *Heroes Lost and Fallen* provides a few percussion-like uses of winds. Beginning at measure 64, the trombones, euphoniums, tubas, bassoon and contrabassoon perform a fairly exposed rhythmic passage. The degree of exposure relates to the syncopation and the difficulty in performing the rhythm precisely in vertical alignment. The pitch is static, with two stacked seventh chords producing a

cluster of sound.[73] While the rhythmic structures vary only slightly over the next 43 measures, the pitch and voicing does not change. (See Example 5-1) The tone cluster is dense, creating a sense of a percussive instrument such as a tom-tom. Notably, the percussion scoring is very sparse, leaving the brass to complete the role of percussive punctuation.[74]

Example 5.2: Gillingham's *Heroes Lost and Fallen*, mm. 64-68. Rhythmic structure and voicing.



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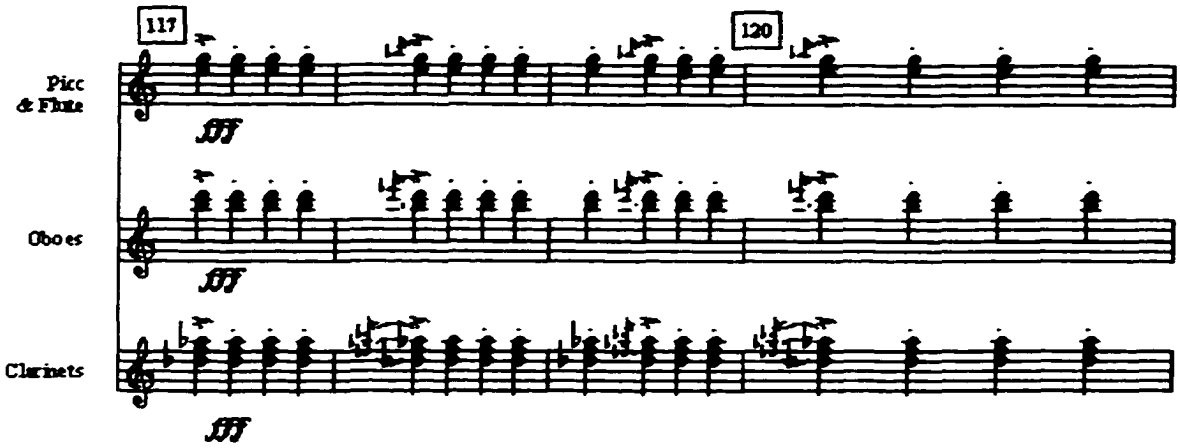
Another example from *Heroes Lost and Fallen*, this time in the upper wind voices beginning at measure 117, demonstrates winds in the percussive role of punctuation. An interesting element is the use of grace notes and their placement first on the down-beat of each measure and then the up-beat in alternating measures. Similar to the low brass/reed passage cited previously, this woodwind passage is also static in pitch with the exception

[73] The chords are F#m7 and a Cm7.

[74] The reason for sparseness in the percussion section is due to the fact that most of the players are required to assist the timpanist whose part is chordal. In addition, the timpani often counter the low brass/reed rhythmic structures, providing a heightened sense of intensity and drama. This does not diminish the rhythmic role the low brass/reed players perform. Indeed, it demonstrates the importance of their part in filling in what in earlier times might have been relegated to the percussion section.

of the grace notes. Also similar to the previous example, the pitch content produces a cluster of sound through two overlapping chords.[75] The grace notes are of particular interest in that they function like a flam on a snare drum, mimicking a syncopated accent pattern that is very common in snare drum literature. (See Example 5.2) The static pitch and snare drum-like treatment of the music combine to provide a sense of drumming where no percussion instruments are employed in that role.[76]

Example 5.3: Gillingham's *Heroes Lost and Fallen*, mm. 117-120. Woodwind voicing and rhythmic structure.



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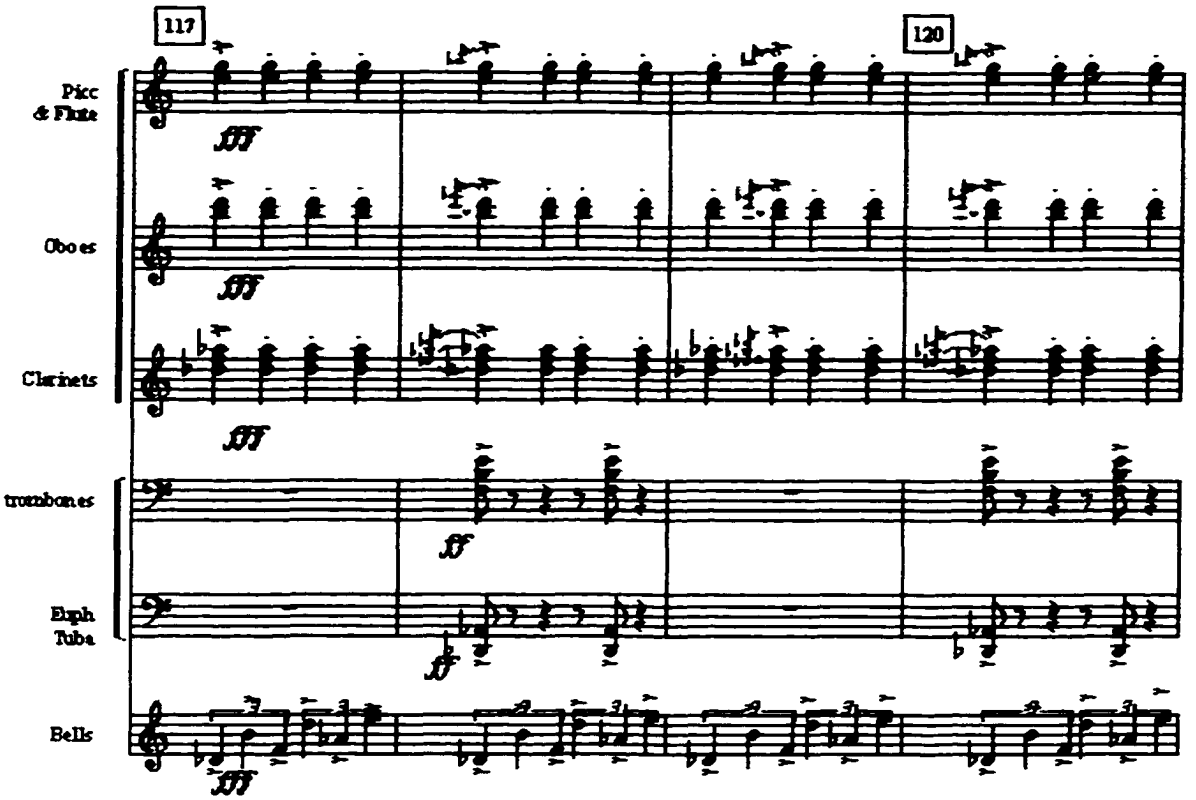
By layering other rhythms into the texture, intensity is heightened in this passage. Example 5.4 illustrates the layering of three rhythms, one that is new and two others that were used previously in *Heroes*. These are: 1) a low brass/reed rhythmic structures; 2) a new rhythmic passage in the upper woodwinds; and 3) a triplet figure in the bells stated

[75] The chords are an Em7 and Db major chord.

[76] In fact, the bell part beginning at measure 117 is in imitation of the woodwind line beginning at measure 94.

earlier by the woodwinds. This wind drumming continues for twenty-five measures with pitch changes occurring only in the last eight measures to heighten the dramatic intensity and give direction to the line.

Example 5.4: Gillingham's *Heroes Lost and Fallen*, mm. 117-120. Woodwind, brass and bell voicing and rhythmic structure.



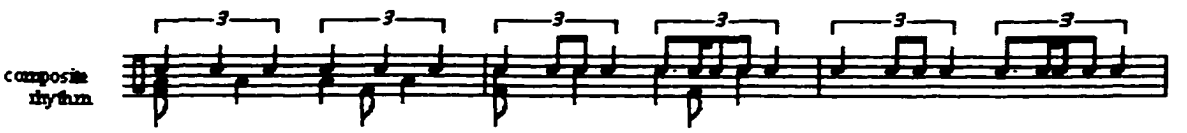
Heroes Lost and Fallen by David R. Gillingham
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Perhaps most important to this passage is the direction by the composer to perform this section *frenetically*. This provides insight not only to the psychology of the music, but to the *melos* necessary for performance. In the previous example, the upper woodwind rhythms must be executed with the crispness of a snare drum. To facilitate this, it might be helpful in rehearsal to have a percussionist play the passage with them to

aid conceptualization. The grace notes are more effective if executed close to the quarter notes, adding bite and energy to the *staccato* articulation which should be interpreted as *staccatissimo*. The low brass/reed passage must be equally brittle and accurately placed.

As illustrated in example 5.5, the frenetic nature of this section results from the combination of all the parts, providing a homogenous rhythm that is not apparent through any individual part. This structure is dependent upon the bell part, which provides the basis for the entire structure.[77]

Example 5.5: Gillingham's *Heroes Lost and Fallen*, measure 117-120. Woodwind, brass and bell homogenous rhythmic structure.

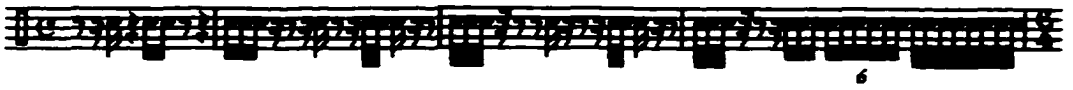


The rhythmic vocabulary illustrated in *Heroes* is present in other works by Gillingham and could be considered one of his trademarks. For example, in *A Crescent Still Abides* (1998), similar writing is evident in measures 64-67 where exposed syncopated sixteenth and thirty-second note passages are present. (See Example 5.6) Also consider the ostinato located in the woodwinds in measures 70-85 (doubled by piano, vibes and marimba). This ostinato adds a charged percussive quality to the passage, with accents and slurs outlining metric shifts and providing another sense of wind drumming. (See Example 5.7) Beginning at measure 88, the passage that follows is also exceptionally percussive, highly syncopated and dense in structure, utilizing

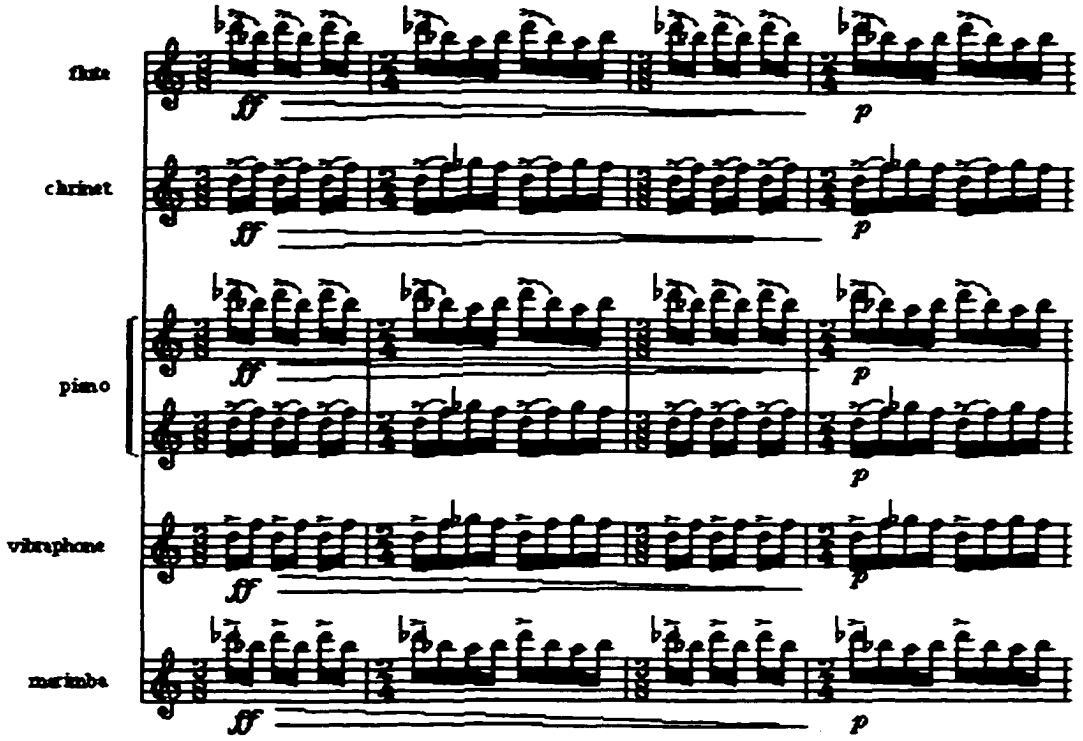
[77] In this example alone we have seen: 1) percussion imitating winds by taking on the triplet figure; 2) winds imitating percussion through their sense of "drumming" and functioning in the role of rhythmic support; and 3) all elements combining to represent a more advanced rhythmic vocabulary than any one part can express alone.

sixteenth-note triplets, eighth-note triplets and various sixteenth-note combinations. (See Example 5.8)

Example 5.6: Gillingham's Heroes Lost and Fallen,mm. 117-120. Woodwind, brass and bell homogenous rhythmic structure.

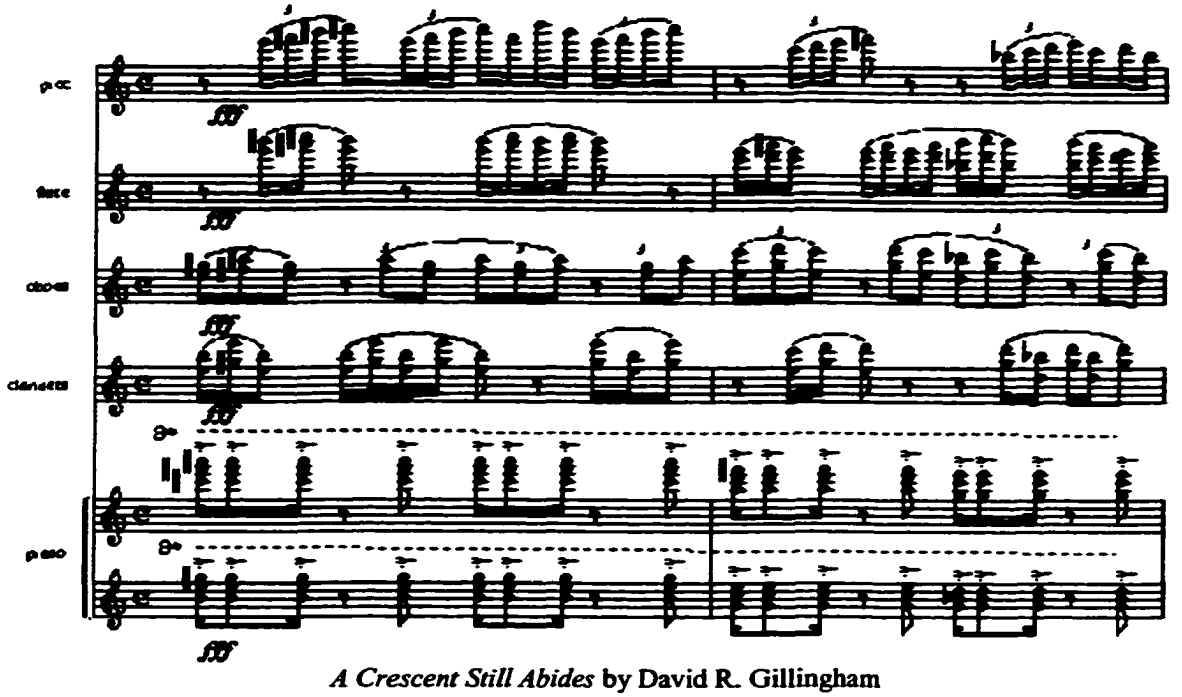


Example 5.7: Gillingham's *A Crescent Still Abides*, measure 70-73. Woodwind, piano and mallet percussion.



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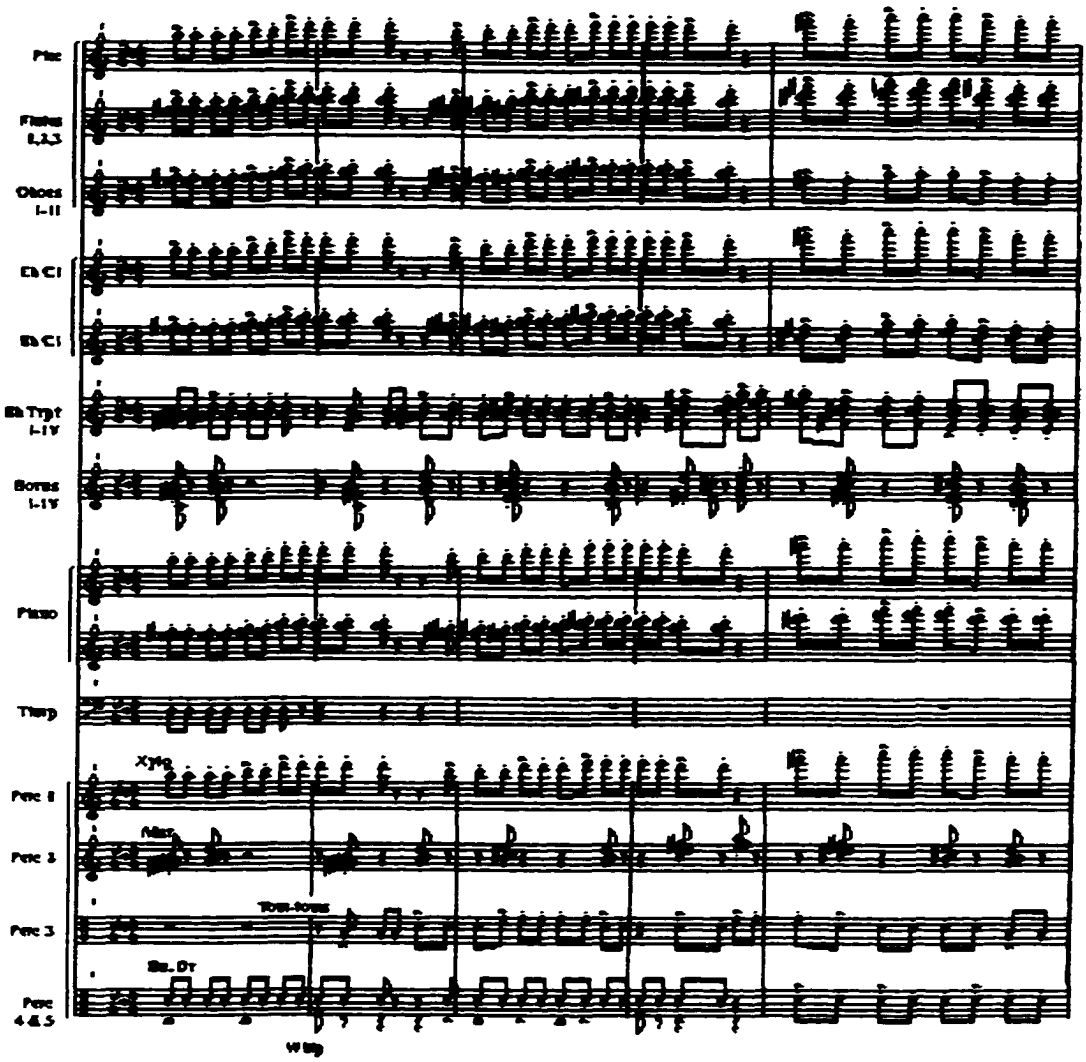
Example 5.8: Gillingham's *A Crescent Still Abides*, mm. 88-89. Woodwind and piano passage.



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The music of Dan Welcher also yields complex rhythmic structures, but in combination with the percussion rather than in their absence. In *Zion* (1996), Welcher takes what on the surface seems to be a simple eighth-note passage and, by placing the passage in alternating meters, using syncopation and unexpected accents, creates an excellent example of wind drumming. By combining the winds with the percussion, Welcher is somewhat more unique than Gillingham. Both winds and percussion are highly active and state the rhythmic structures completely. (See Example 5.9)

Example 5.9: Welcher's Zion, measure 185-188.



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For the conductor and performer, there are a number of difficulties encountered in the type of passage seen above. First, a lack of confidence in performing the unexpected accents in combination with the changing meter may lead to tentativeness in gesture. A

very clean baton technique through a classical gesture[78] will avoid extraneous motions that might misinform the players. Notice that the texture contains two primary elements: moving eighth notes with accents and isolated eighth notes (see horn, marimba, and whip). The above elements do not coincide and a passage in hocket results. Observe, however, that the tom-toms perform moving eighth notes whose accents coincide with the isolated eighths in the horns and marimba. This complexity presents a second dilemma for the conductor that involves blending these elements and determining which will take precedence in the conducting gesture.

Several possible solutions exist, the least of which is to place the burden of performance on the players and avoid getting in the way. Gestures that result from this "solution" may be simple patterns, but this may not lead to a confident performance. Another solution would have the horn, marimba and whip players rehearse their passage with the tom-toms alone. Through this rehearsal, the players involved will develop a better understanding of how their rhythm fits into the larger moving eighth-note part. The other instruments could be separated in the same manner, allowing cohesion to develop within related passages. At the same time, the conductor can employ gestures that reflect each section's accent pattern, building dexterity and flexibility in conducting.

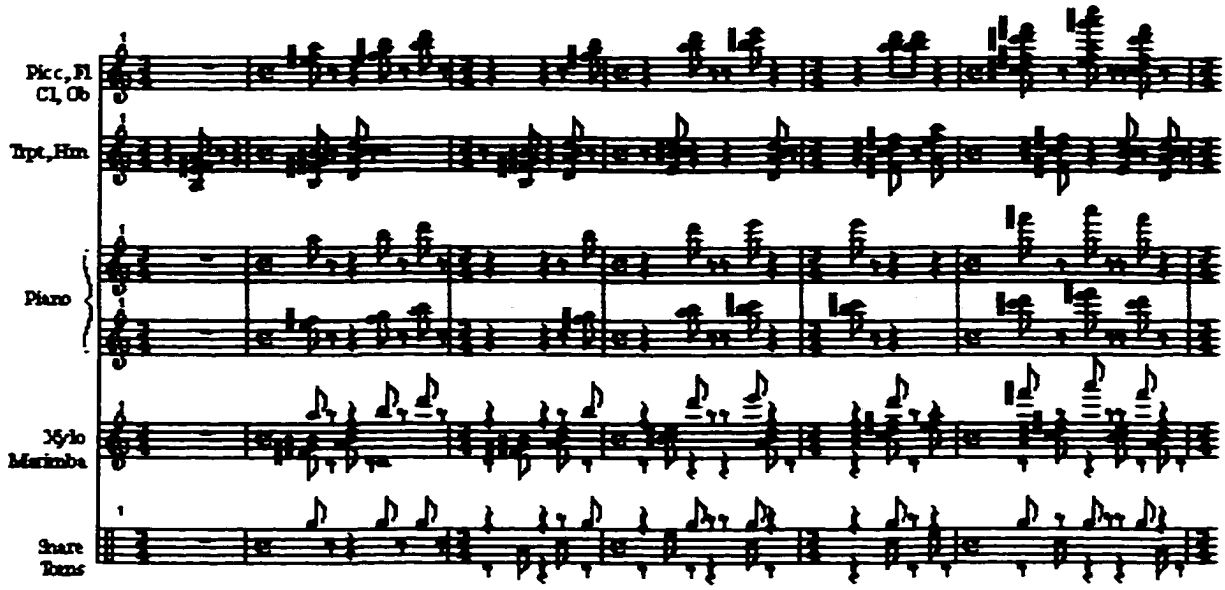
However, successful performance of these two passages separately will not lead to an understanding of the relationship between the accented notes. To understand the hocket, the players should practice only the accented notes. (See example 5.9) Having

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[78] See Donald Hunsberger and Roy E. Ernst, The Art of Conducting, second edition, (McGraw-Hill, Inc: New York, 1992), 26.

realized the hocket, the performers will have better command of the passage and will focus on a style of articulation that best accomplishes the hocket.

Example 5.9: Welcher's *Zion*, mm. 184-188. Accented elements only.



In the previous example, the conductor will address grouping beat patterns into clear and meaningful structures, ones that make the energy and direction of the rhythm most effective. This necessity is perhaps compounded by meter changes which are not indicated in each measure. Messiaen dealt with similar problems with comprehension of notation, understanding that sometimes complexity in notation diminishes comprehension. Messiaen defined four methods of notating rhythm, the least confusing of which he called "fourth notation."[79] He considered this type of notation least confusing because it disarranged the performer's habits in no way, but rather places in normal meters rhythms which have no relation to it. Messiaen's concern

[79] Olivier Messiaen. The Technique of My Musical Language (Paris: Alphonse Leduc, 1956), 28-29.

was that performance focus might be lost unless such passages were notated and performed with appropriate slurs, accents and dynamics.[80] Many wind ensemble scores present similar problems where meters are chosen as a convenience for comprehension rather than a tool for revealing metric pulse.

As an example, consider David Holsinger's *In The Spring At A Time When Kings Go Off To War* (1986). There are dozens of instances that feature supermetric relationships. Holsinger's fondness of manipulating his five-four meter into varying groups of eighth notes, particularly in the order of 3 + 3 + 2 +2, is obvious. Additionally, Holsinger's fondness for the juxtaposition of duple and triple meters expresses an intense rhythmic energy. (See Example 5.11) Holsinger also makes wide use of wind drumming to support the harmonic and rhythmic energy in the music.

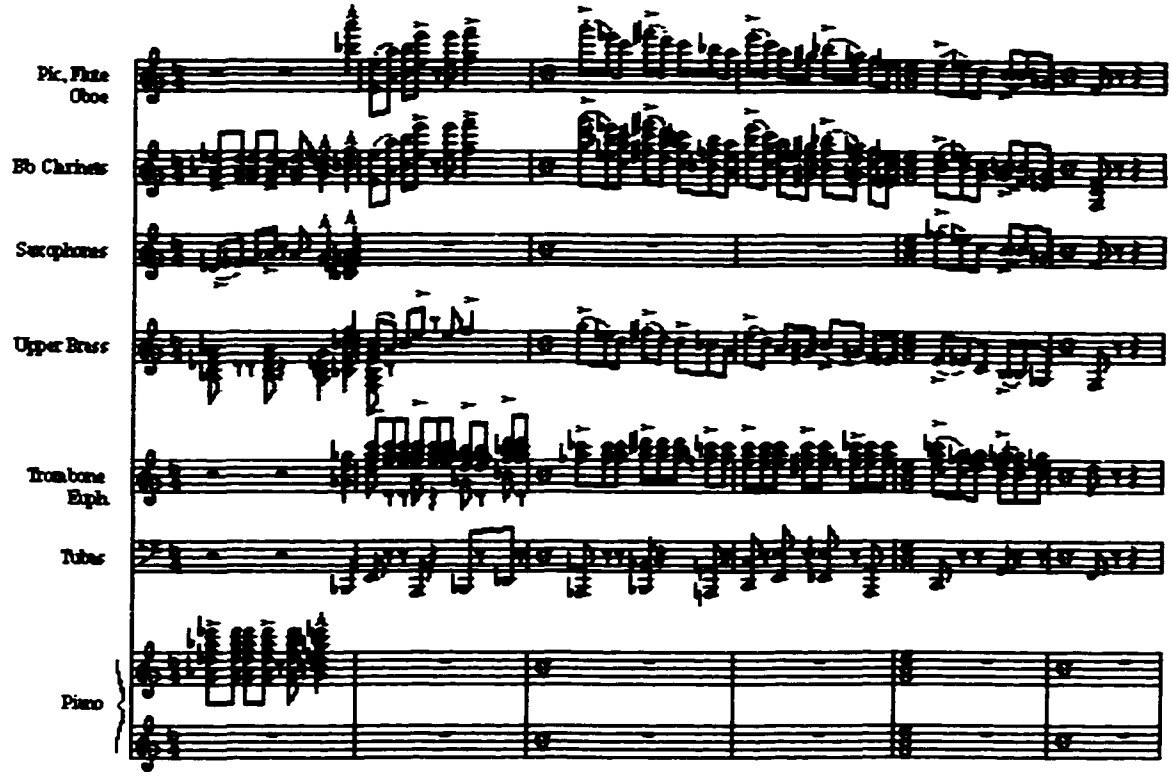
Composers who make use of wind drumming provide a sense of pitched battery percussion, enhancing or replacing percussion of indefinite pitch. Just as there has been an increase in percussion writing during the latter half of the twentieth century, there has been a concurrent expansion in the use and complexity of rhythms among wind players. This expansion causes the wind player to be concerned with variety in articulation and requires them to consider articulation from a percussive perspective. This approach broadens the perception of articulation, encouraging variety and flexibility, and emphasizing the need for thorough knowledge of rhythm and its expression.[81]

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[80] Opcit. 29

[81] See Elizabeth Green and Nicolai Malko. The Conductor's Score (Englewood Cliffs, New Jersey: Prentice Hall, 1985), 129. Malko points out that first we must stress a solid rhythmic approach to making music and that this is principle to the conductor's development. No musician can deal with rhythmic concerns without also dealing with articulation. The two are inseparable.

Example 5.11: David Holsinger's *In The Spring At A Time When Kings Go Off To War*, mm. 106-114.

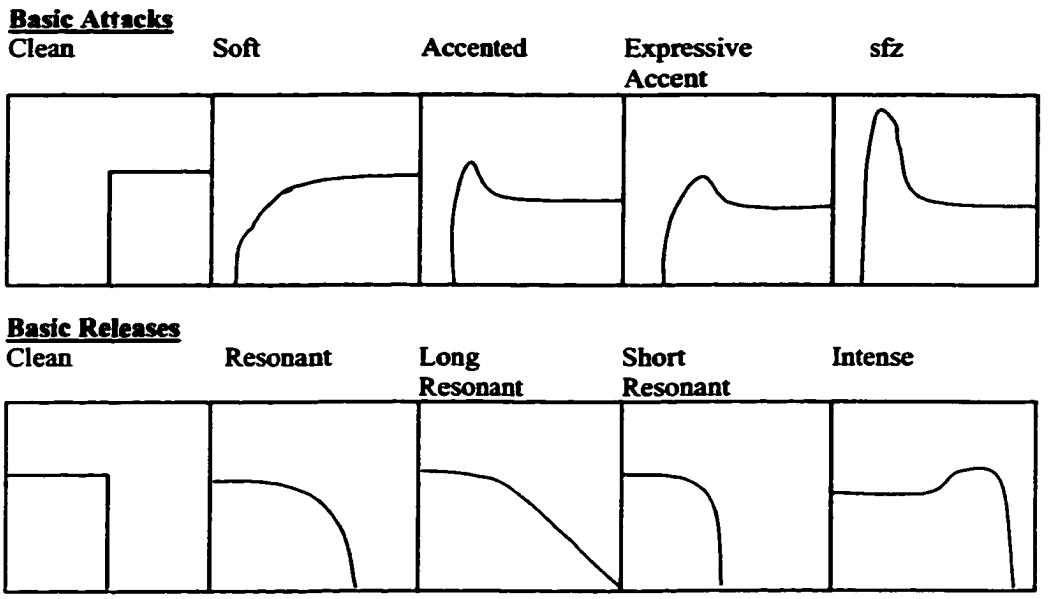


In the Spring at a Time When Kings Go Off to War by David Holsinger
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When dealing with winds in a role of rhythmic punctuation, articulation must be considered in detail, paying special attention to uniformity within and between sections or instruments. There has been a paradigm shift in the role that percussion fulfills, bringing percussion into balance with brass and woodwinds. This shift affects not only percussion instruments, but all instruments that come into contact with them making necessary a new understanding of articulation that borrows from percussion attacks and releases.

Arthur Weisberg defines five basic types of wind attacks and releases.[82] Of these five, he notes that composers tend only to indicate the accent, expressive accent and the *sforzando*, leaving the choice for other possibilities of articulation to the performers and, by implication, conductors. Weisberg defines these five basic attacks as: 1) the clean attack; 2) the soft attack; 3) the accent; 4) the expressive accent; and 5) the *sforzando*. (See Example 5.12)

Example 5.12: Attacks and releases as described by Arthur Wesiberg in The Art of Wind Playing.

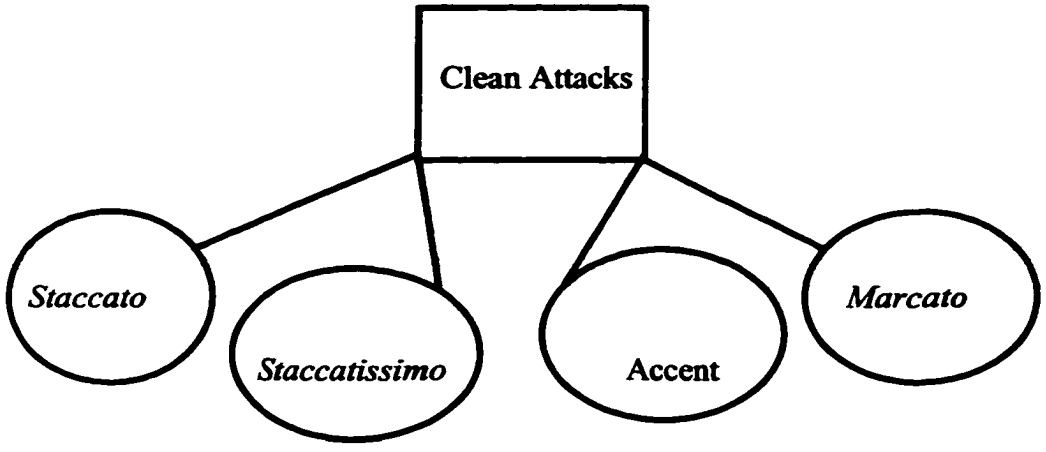


As a basis for articulation these serve well, but do not detail the possibilities of *staccato*, *staccatissimo*, *marcato* and *legato* styles of articulation. However, further consideration of Weisberg's attack styles reveals that the third, fourth and fifth attacks are related at the onset of sound to the first two categories. Both the clean and soft attack can be subcategorized to include a variety of articulations whose initial sound begins in either

[82] Arthur Weisberg, The Art of Wind Playing (New York: Macmillan, 1975), 124-5.

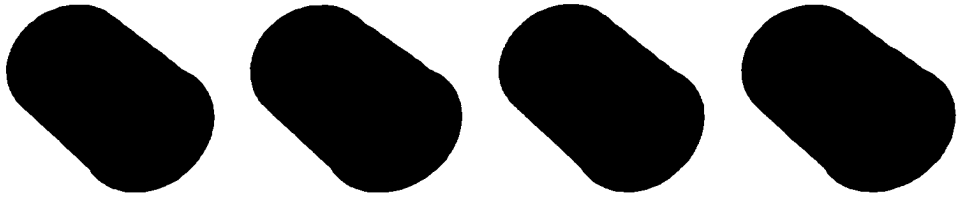
a clean or soft style. For instance, under the general heading of clean attack,[83] we could include various *staccato*, *staccatissimo*, and other hard articulations.

Example 5.13: Diagram of clean styles of attacks.



Borrowing again from Varése's concept of projection, it may be better to represent articulation in a three-dimensional manner. Such a representation provides an image of depth and length to an articulated note. A succession of *staccato* articulations might therefore be visualized more spherically as illustrated in example 5.14.

Example 5.14: Representation of the projection of *staccato* attacks.



Staccatissimo articulation would vary in that this articulation is more penetrating and biting. The concept of a penetrating articulation would also benefit from a three-

[83] Ibid, 125. Weisberg defines a clean attack as "one which contains some stress built into it because the note starts at a very definite point in time. The note appears instantly at is written dynamic."

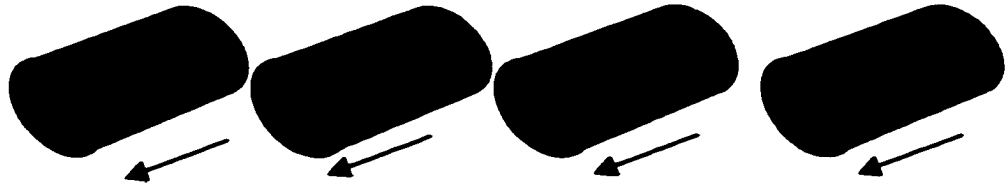
dimensional representation. Allowing for a harder, more pointed tongue, the visual representation of this articulation is expressed in the drawing below.

Example 5.15: Representation of projecting *staccatissimo* style of attacks.



Both of the previous articulations require what Weisberg referred to as a clean attack. There are other cases where the clean attack would be employed, often influenced by dynamic considerations. For example, when dealing with separated attacks at or above a *mezzo-forte* dynamic, such as *tenuto*, the initial attack will naturally be done in a clean style. The interpretation of *tenuto* focuses on the body of the note, emphasizing a full-sounding resonance (projection) which can only be achieved with a clean beginning of the note. Its three-dimensional expression is given in the following illustration. The arrows indicate a push against resistance to the note. In conducting parlance, such an articulation is reflected by a gesture that mimics pulling taffy.

Example 5.16: Representation of projecting *tenuto* style of attacks.



Articulation is often applied in succession or in a rhythmic stream. Factors such as speed of an articulated passage may vary, relevant to tempo and rhythmic complexity. That a performer would be concerned with a note's release in a succession of articulations would be rare. More often, performers find themselves "throwing" or "spitting" out these phrases, allowing the resonance of the note to play out naturally. There is generally no mechanical (tongued) release of a note. The start of the next articulation or the interruption of airflow separates notes from one another. Resonance therefore, is not controlled after the fact, but is determined at the very start of note. Whereas Weisberg might focus on the release of an articulation, Varése's notion of projection gives credence to be less concerned.

Other factors influence resonance, such as note duration and intensity. The longer the note, the greater the need for the performer to influence its body with musical direction, either through progress or egress. In both wind and percussion, note direction also influences resonance. This is more difficult for percussion instruments and more often than not, requires manipulation of note length by rolling. However, the style of attack, mallet choice, type of instrument struck and location of stroke influence the body of percussion sounds and does not always require roll manipulation. Harmony influences resonance. If a chord is stated within a fairly dense harmonic voicing, its resonance will be perceived as being shorter than if it were stated in a less dense voicing.

To enhance Weisberg's concept of articulation, certain articulative syllables may be associated with each style, encouraging the performer to verbalize and conceptualize the sound in preparation for instrumental emulation. For example, the clean attack might best be accomplished with a "du" style of articulation. The soft attack might be best

achieved through a "lu" style of attack. The accented attack could be accomplished with "tu", the expressive accent with "toe," and the *sforzando* with "tee" syllables. Additionally, the two basic categories of articulation (the clean and soft attack) can be applied in combination with the other three attack styles to broaden the articulative palette so that it is possible to have, for example, an accent in a relatively soft attack style.

Consider also that any given articulation can have numerous interpretations. An individual's interpretation of an articulation is dependent upon musical context and the *melos* of particular passage. However, in any musical context consideration must be given to whether the articulation should be executed in a relatively soft or clean style. In the case of an accent, the performer may select the syllable "tu" as a general accent syllable and the import of the accented note determined. If the note is deemed emphasized but not of great import, the player would interpret a softer attack style, using the syllable "du." Airflow will be adjusted (mainly instinctively) to accommodate a sense of accent. If in the same passage, however, the note was deemed of high import the performer might consider a cleaner articulation such as the syllable "ta," which will produce a clean attack and slightly different resonance. Again, the context of the articulation will have a major influence on the syllables chosen to conceptualize the sound.[84]

Weisberg's system of articulation is by no means the final word in articulative

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[84] In a stream of similarly articulated notes, minor variances in the attack style become obvious so that an articulative syllable such as "tu," which is generally considered an accent, no longer stands out, but the deviation from this syllable does, inherently giving weight to the changed articulation. This may be made apparent by speaking this passage: Tu – Tu – Tu – Ta – Tu. The syllable Ta is experienced as an accent relevant to the context in which it appears.

possibilities. However, a conductor who makes use of Weisberg's system and the suggested subcategories of attacks could easily expand an ensemble's articulative vocabulary. Because there are only a few styles to contend with, conductor's may find this system less cumbersome. The following chart illustrates variations of articulation and may serve as the basis for articulative exploration for the conductor and the ensemble. Notice that some syllables appear in several categories of articulation, reflecting the premise that musical context allows for borrowing of articulation. (See Example 5.17)

Example 5.17: Chart of Basic Attacks and Contextual Possibilities

Basic Attacks	Clean	Soft	Accent	Accent Expressive	*Sforzando*
Syllable used	du	lu tu	toe	tee	
Other Contextual Possibilities	dee, doe dah tu toe tee tah	lee, loe lah	du dee doe dah toe tee tah	tee doe dee tah dah	dee

As an exercise one might employ in a succession of quarter notes Weisberg's five basic attacks, making use of the syllables previously discussed, changing the style of articulation every four notes.[85] Once performers have attained mastery of these articulations,[86] either of the first two categories is selected as a basic articulation and the

[85] This may be expanded at first to eight notes, giving the players more time to think through their adjustments.

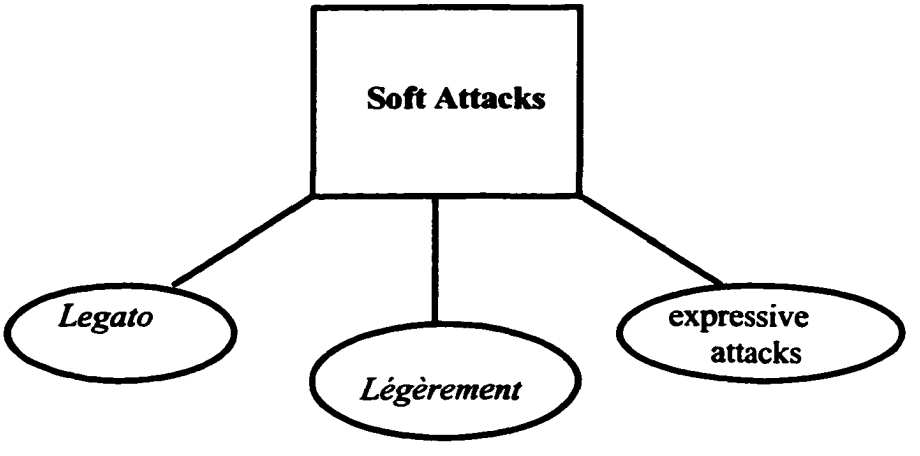
[86] Considering 85% efficacy as mastery as noted by the MENC National Standards.

articulation manipulated to achieve a relative sense of accent, expressive accent, and *sforzando* within each style. Various clean and soft styles can be developed in this fashion within each of the five categories.

By changing the aural cavity shape using the "u," "oe," "ee," and "ah" endings, performers can affect subtle changes in note resonance. Adding separation to this exercise, various *staccato* articulations can be explored. In terms of initial note attack there are only three possibilities, conceptualized by and making use of syllables that begin with the letters, d, l, or t. There is also implication that conductors could make use of this exercise to refine and broaden their gestural vocabulary, moving from verbal conceptualization to a physical gesture.

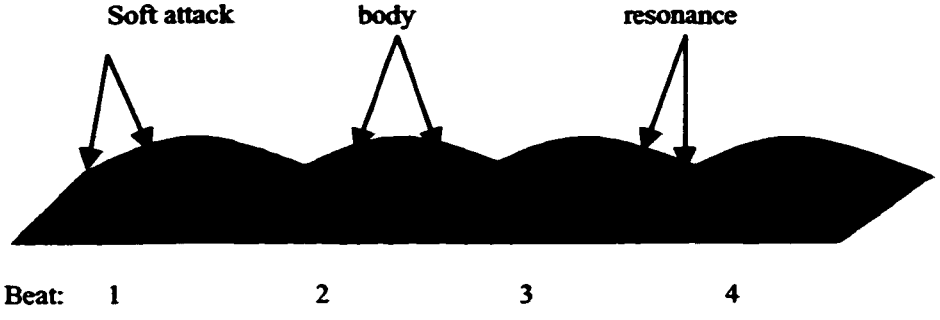
The soft attack poses somewhat of a different problem in its representation, but like the clean attack, benefits from a three dimensional representation of sound projection. Example 5.18 illustrates the broad category of soft attacks with its subcategories of *legato*, *légèrement*, and expressive attacks.

Example 5.18: Diagram of soft style of attack.

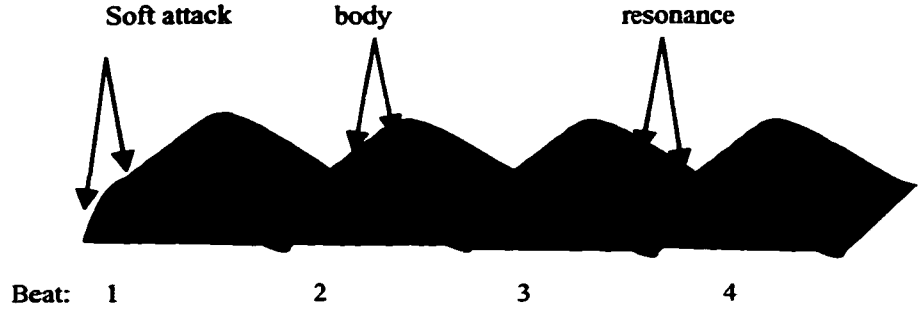


Below is a visual representation of a succession of *legato* quarter-notes, a succession of *légèremente* quarter notes, and finally other types of soft attacks such as the soft attack accent or what amounts to Weisberg's expressive accent.

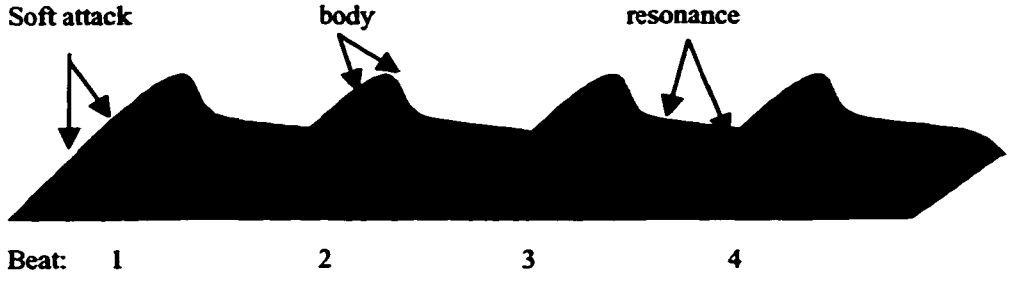
Example 5.19 : Representation of *legato* style of articulation.



Example 5.20 : Representation of *légèremente* style of attack.

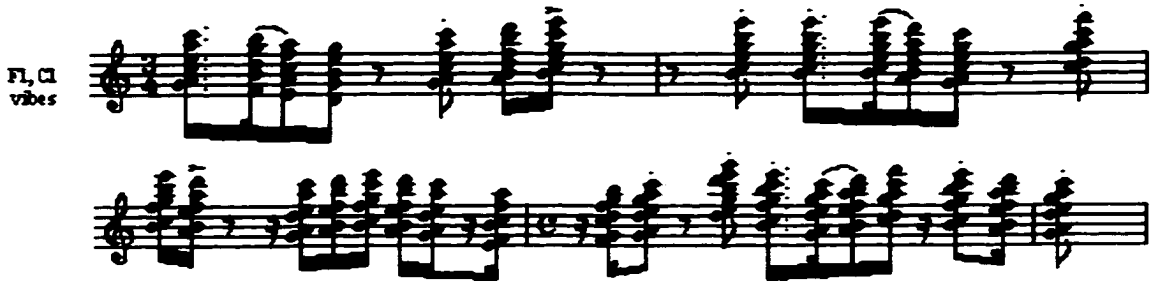


Example 5.21: Representation of an expressive accent in soft style of attack



Just as was possible with the clean attack, a variety of soft attacks can be developed within the context of the exercise previously mentioned. *Marcato*, *tenuto*, accent, *sforzando*, and *staccato* can be expressed with relatively soft or hard attacks. While dynamics can impact the choice of using a clean or soft attack, performers should not assume that a soft dynamic implies a soft articulation. For example, if the conductor chose a soft style of attack in Maslanka's *Symphony No. 4* at measure 693, the performance would prove uninteresting. (See Example 5.22)

Example 5.21: Maslanka Symphony No. 4,mm. 693-696, condensed.



Symphony No. 4 by David Maslanka
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Maslanka marks the passage as *delicate* and *piano*. If the passage is approached with too soft a tongue, direction and tempo may be lost. In this passage, *staccato* and accented notes require a clean attack. Furthermore, the rhythm requires precision and clear diction. A sense of delicacy emerges from the combination of a soft dynamic and crisp articulation, and combined create an atmosphere of fragility, one that at any moment could collapse on itself like a frozen rose whose petals disintegrate when handled too vigorously. This sense of fragility is juxtaposed by an undeniably firm rhythmic structure implying the intensity of a *forte* but none of the volume.

There are other schools of thought regarding concepts and techniques of articulation. Some detail possible attack and release styles, offering other food for thought on this subject. Notable among these is the text by Jean-Marie Londeix, *Hello! Mr. Sax, or Parameters of the Saxophone.*[87] However, as is often the case with categorization of attacks, it should be noted that nearly every attack detailed by Londiex is expressed in a straight, vertical fashion, with only two examples that would fall into the category Weisberg defines as soft. Londiex agrees that the release of a note can take care of itself if attacked properly, but believes that this concept is only applicable to percussion and resonating instruments.[88] He disagrees, however, that the attack of the note has an inherent effect on the body and decay of the note and suggests that the release must be manipulated to effect meaning.[89] The point of this discussion, however, is not that the release is to be ignored, but that if the correct attack is chosen much of the body of the note and its release will result naturally. To clarify this point, consider the following examples.

An excellent example demonstrating that releases are controlled by the attack of a note is found in Karel Husa's *Music for Prague, 1968.* (See Example 5.23) Rhythmic activity at rehearsal F features sixteenth notes that are divided in four and five note groupings among various instruments, entering both on and off the beat. Though the individual parts appear fragmented, a homogenous rhythm of constant sixteenths emerges, but the *melos* is chaotic because of the *staccato*, frenzied groupings of the notes. This passage may be analogized as many voices crying out to be heard.

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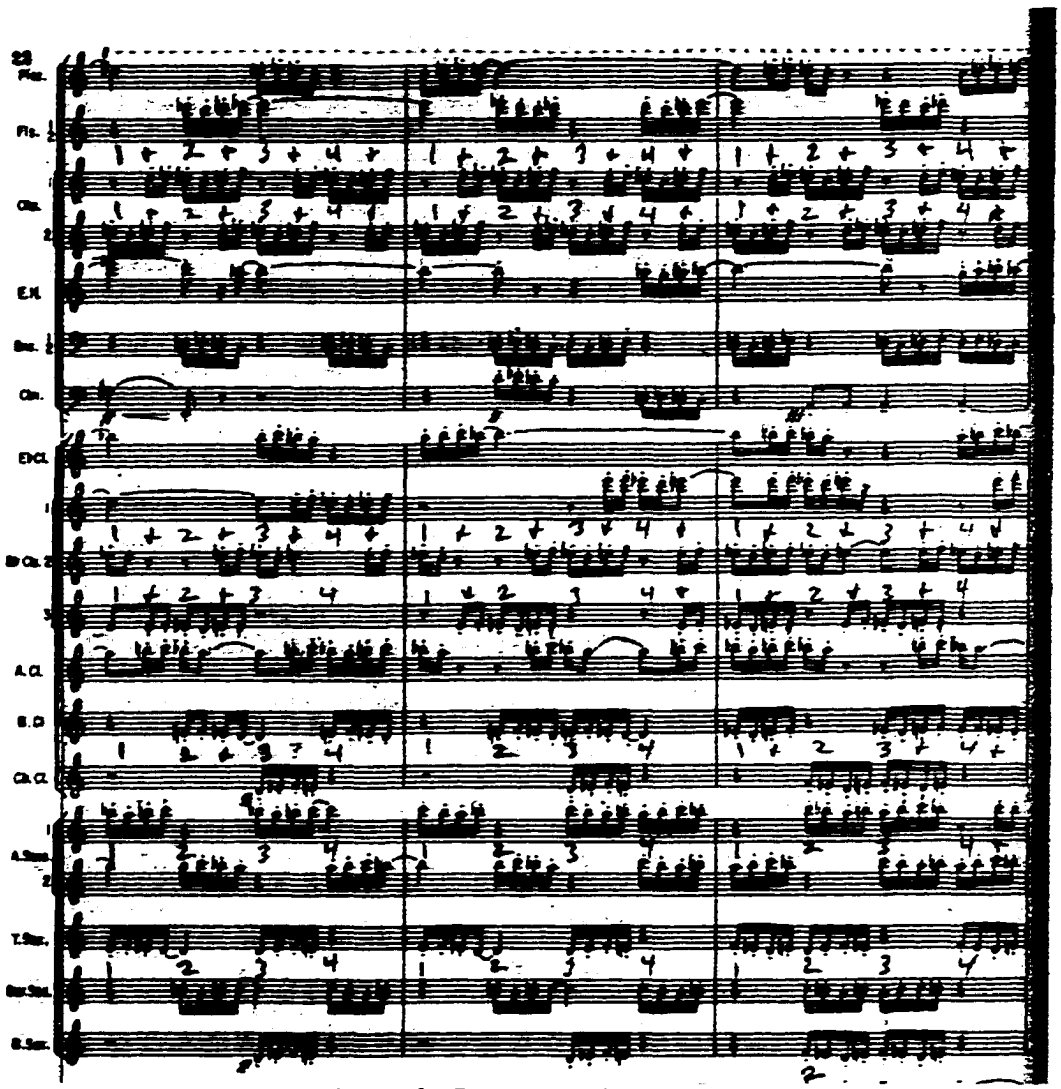
[87] There is a thorough charting of various attacks and releases in this text on pg. 90-94.

[88] Jean-Marie Londiex, Hello! Mr. Sax or Parameters of the Saxophone, (Paris: Alphonse Leduc, 1989), 89.

[89] Ibid, 91.

Precision and uniform interpretation of articulation is paramount to successful performance of this passage. Articulation, because of the speed and nature of the passage, is limited to the firm and clean syllables "tu" and "tee." The syllables "tah" and "toe" would not be effective as their resonance is inherently too long, and the softer "du" and "lu" syllables would create muddiness rather than precision at this tempo.

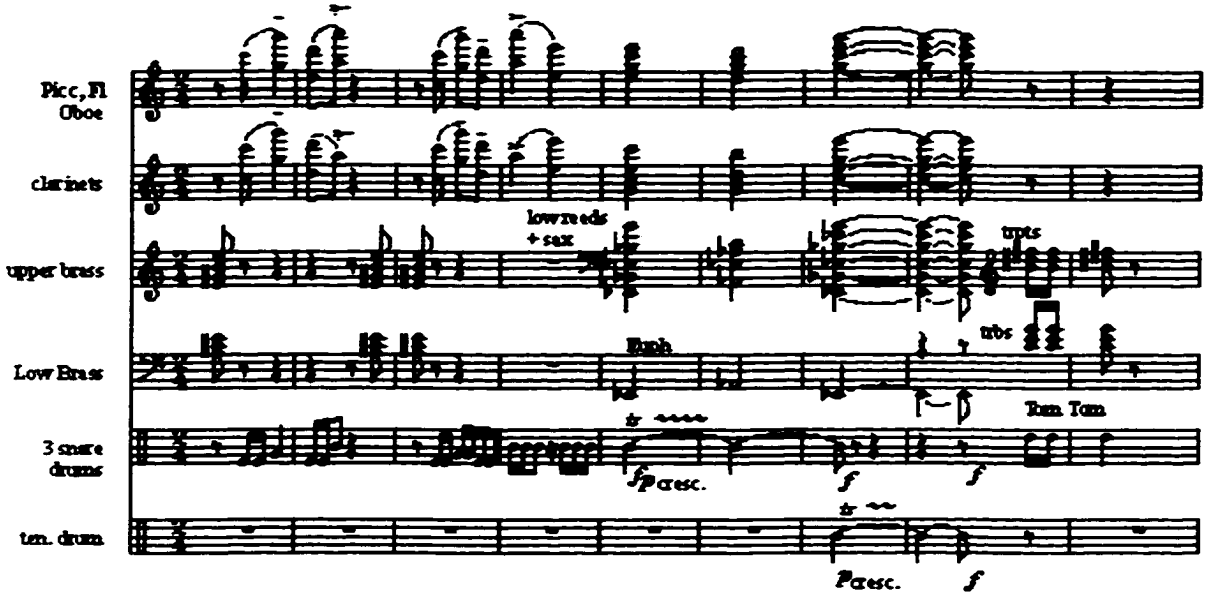
Example 5.23: Karel Husa: *Music for Prague, 1968*, one after rehearsal F.



Music for Prague 1968 by Karel Husa
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Vincent Persichetti's *Symphony for Band* contains many examples of winds performing as rhythmic punctuation. While Persichetti's metric combinations are not as complex as Messiaen's, his use of syncopation is challenging due to isolated entrances, specificity, and variety of articulation and ensemble interplay. Example 5.24 illustrates the passage between measures 256-64 of the first movement. Notice that the brass instruments are not supported by percussion in measures 256-58, though they are reinforced in 263-64.

Example 5.24: Persichetti's *Symphony for Band*, mm. 256-64



Symphony No 6 by Vincent Persichetti
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Performance of this passage requires a *secco* interpretation in the brass and a somewhat "wetter" style in the woodwinds. The former style can be accomplished through a fully supported airflow and resonant projection of notes that are followed by rest. Notes not followed by rests should be clearly articulated but without separation,

adding to the fluidity of the passage. This increases the contrast between the brass, which perform as rhythmic punctuation, and the prominence of the upper winds.

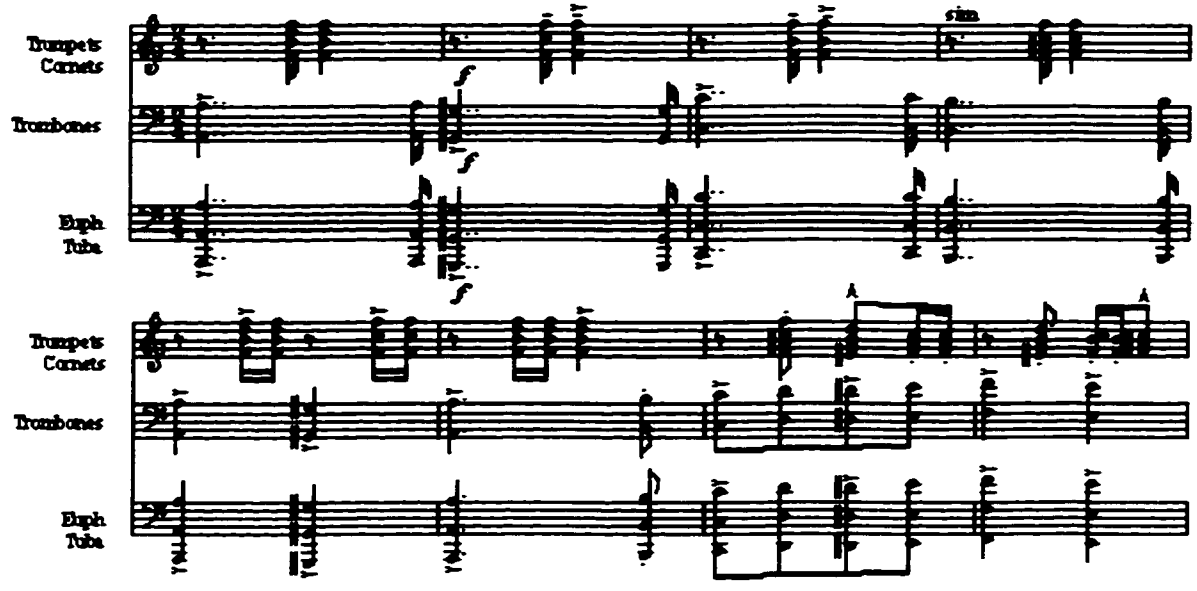
In James Barnes' *Fantasy Variations on a Theme by Niccolo Paganini* (1989), still other examples of winds as rhythmic punctuation are found. In *Variation XIX,* which features the low brass, the cornets and trumpets are used to rhythmically punctuate the low brass. This punctuation by the upper brass is reminiscent of a march-like snare drum passage. (See Example 5.25) The articulation in the upper brass is explicit, with emphasis give to the first four quarter notes of the phrase. The syncopation in the fifth measure is resolved in the sixth, again on a quarter note, with the ensuing cadential passage featuring increased rhythmic activity.

If the conductor applies a *secco* interpretation, the result should be a crisp, very cleanly articulated passage. A light tongue on the *staccato* will allow energy to be applied to the accents, with careful attention given to making a distinction between the accented and *marcato* notes in the final measures. The *legato* sixteenth-note pick up might be best interpreted in terms of diction, as if were saying "to-day." The groupings of two sixteenths in the fifth and sixth measures may be approach as an echo, using double tongue syllables "tu-ku" to emphasis the front of the grouping. The sixteenths in the seventh measure have more of a rebounding effect in relation to the *marcato* and may be de-emphasized, while the sixteenths in the eighth measure should lead, via a slight crescendo, to the ending *marcato* eighth note.

It is possible to analyze any rhythmically punctuated passage by considering explicit dynamic and articulative markings, or by deciphering the inherent weight of various notes within a passage. Relevant to Example 5.25, even if Barnes had not

indicated an articulation in the upper brass, the conductor could still develop a musically enjoyable interpretation.

Example 5.25: Barnes, *Fantasy Variations on a Theme by Niccolo Pagannini*. First eight measures of Variation XIX.



Fantasy Variations on a Theme by Nicolo Pagannini by James Barnes
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For instance, the quarter notes in the above excerpt would receive natural emphasis, being of greater length than the preceding shorter values. The conductor could make their weight more explicit by interpreting accents. Guiding players towards understanding how note length affects interpretation, the conductor reveals more clearly the direction in which a passage is moving, setting up a hierarchy of inflection in the process. As direction of the passage become clear, further interpretive decisions may include the addition of a crescendo during the first measures that leads to the sixteenth notes in the fourth measure. The syncopated sixteenths in the ensuing measures serve as a point of arrival, providing relief from the drive of the previous quarter notes. A

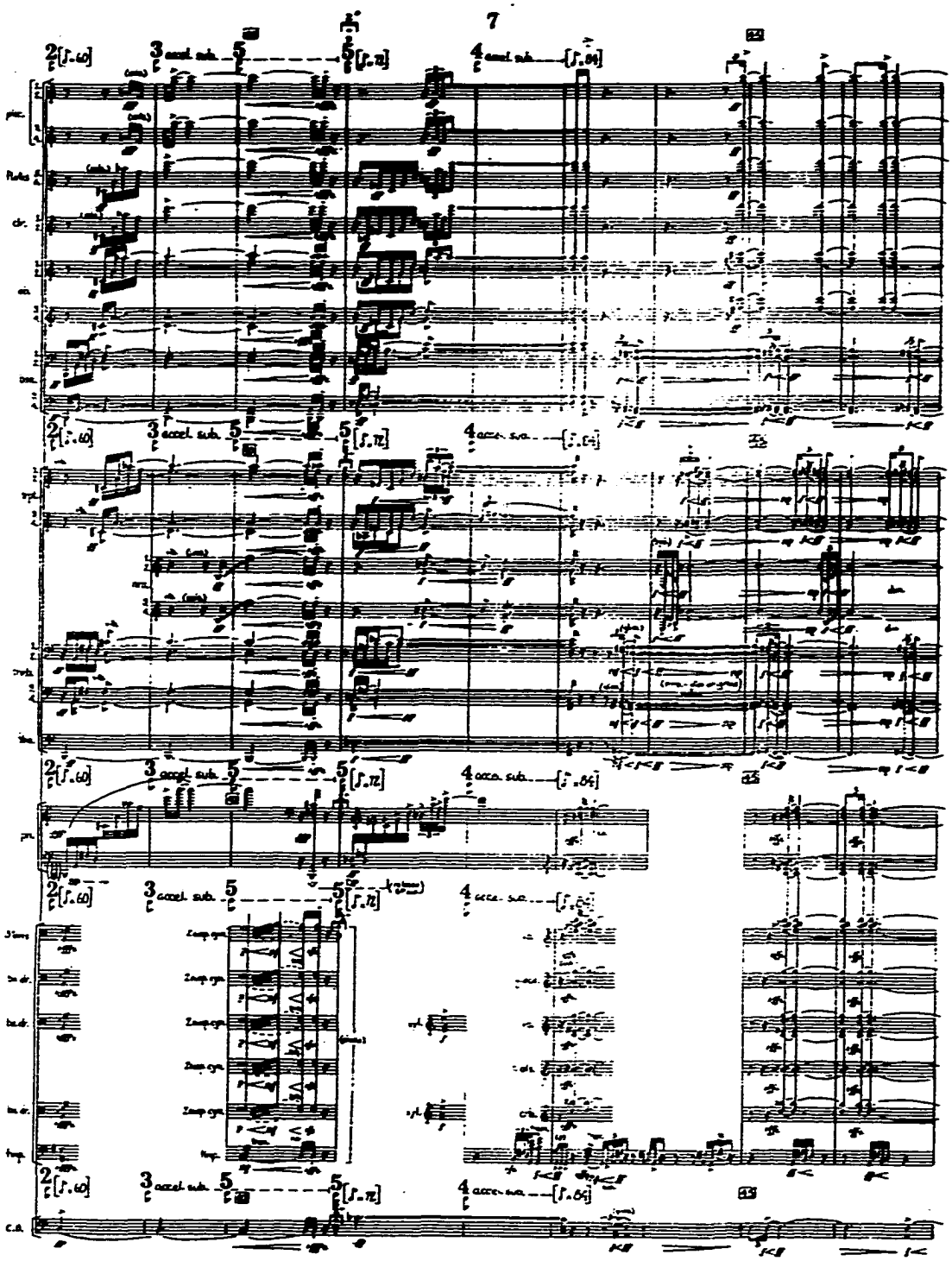
conductor might enhance the shift to syncopation by interpreting an accent on the first sixteenth in each group of two sixteenths.

At this point, this interpretation coincides with the composer's markings. In the seventh and eighth measures, however, a conductor could arrive at a different, yet equally satisfying, interpretation. Recognizing the cadential function of these two measures, the conductor might interpret accents on the two eighth notes in measure seven and the final three notes in measure eight. In the seventh measure, the second eighth note should be given more emphasis since it fits the previously expressed pattern of weighted notes on beat two in this phrase. Whether or not to interpret a *marcato* or to simply give the second accent more emphasis becomes a matter of syntax. As for the sixteenth notes, a *staccato* interpretation is the most logical choice given the tempo and energy implied.

From the above description, it is apparent that, explicit markings aside, it is possible to achieve an artful interpretation through rhythmic analysis. In this case, the interpretation emulated the composer's and the insertion of the crescendo aides momentum and enhances the performance. It is important, therefore, as conductors and interpreters not to merely accept at face value the composer's markings, but to seek justification and meaning in those markings and to provide a basis for other musical decisions necessary to establishing meaningful communication.

In Schwantner's *and the mountains rising nowhere*, examples of an expanded rhythmic vocabulary and use of winds in the percussive role of punctuation are prevalent. Even cursory contact with the score reveals a highly complex rhythmic vocabulary, with a predominance of meter changes and sixteenth and thirty-second note notation. (See Example 5.25) The score is somewhat imposing with blank spaces

Example 5.26 Schwantner's *and the mountains rising nowhere*. Sample page.



and the mountains rising nowhere by Joseph Schwantner
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left when instruments are at rest together with its micro-managed dynamic and articulative instructions. Schwantner's intent was to bring the percussion forces to bear as an equal entity in the composition and he does so by making use of over 47 percussion instruments to state themes and motives.[90]

For conductors, *and the mountains rising nowhere* presents a number of performance problems. The dissertation by Cynthia Folio cited below is highly recommend as a starting point for score study. Folio offers excellent insight on issues of formal, textural, rhythmic and tonal construction. Achieving a meaningful performance will not be possible unless these issues are clearly understood by the conductor.

A second problem in *and the mountains rising nowhere* involves the complex rhythmic vocabulary Schwantner used. There is a strong probability that peformers may find more psychological resistance to the interpretation of the rhythm than an actual lack of cognition or technical ability. Performers often lose confidence at the "blackness" (read heavy amount of sixteenth or thirty-second notes) on the page. To overcome this, incorporating the concept of rhythmic transposition is helpful.

Rhythmic transposition is the mental simplification of more complex rhythms through revisualization. To be useful, the player must develop the ability to visualize various passages as being in a different meter, changing the value of notes or recognizing a subdivision of a beat as the new primary pulse. This concept is based on the premise that what challenges players most about more complex rhythms is the anticipation of

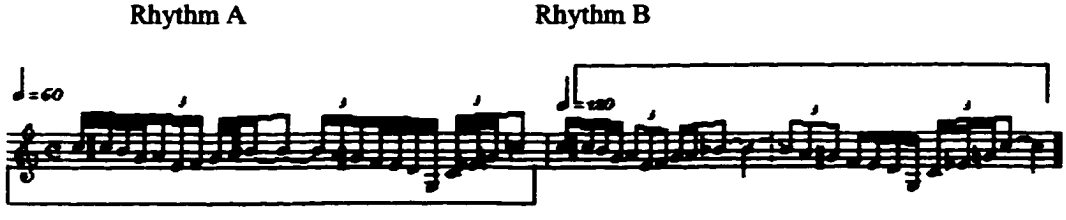
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[90] Cynthia Jo Folio, "An Analysis and Comparison of Four Compositions by Joseph Schwantner *and the mountains rising nowhere*; *Wild Angels of the Open Hills*; *Aftertones of Infinity* and *Sparrows*," Ann Arbor, Michigan. University Microfilms International, 1985, 21-2.

speed. More simply stated: musicians anticipate that "black" notes go faster and are therefore more difficult.

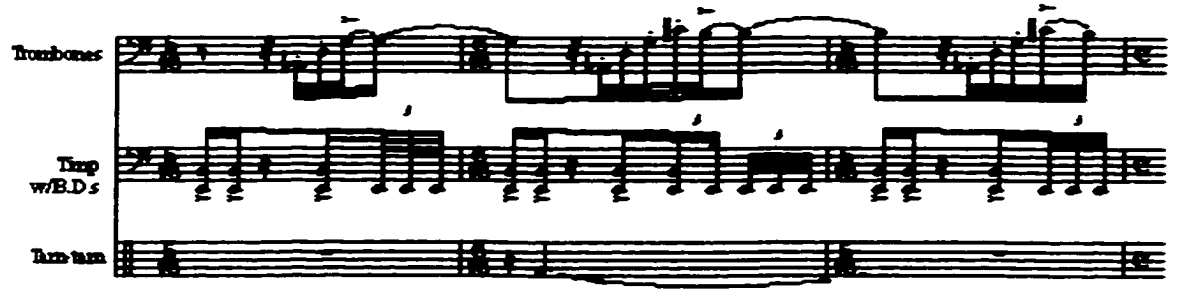
Examining Example 5.27, even before an evaluation, many musicians when asked to choose the more difficult of the two rhythms would select the pattern on the left, primarily because the example on the left appears to be "busier." It follows then that young musicians should be trained to mentally simplify perceptual difficulties. Early training may involve a written transposition of rhythm where a player transposes sixteenth notes into eighth notes, eighths into quarters and quarters into half notes. As experience is gained, the step of actually transcribing the rhythm is removed and the student performs rhythmic transposition by sight in a manner analogous to melodic transposition. A few other rhythmic structures from *and the mountains rising nowhere* will further demonstrate this technique.

Example 5.27: Though the two examples are structurally identical, the appearance of the sample rhythm on the left is most often selected as being more difficult than the one on right.

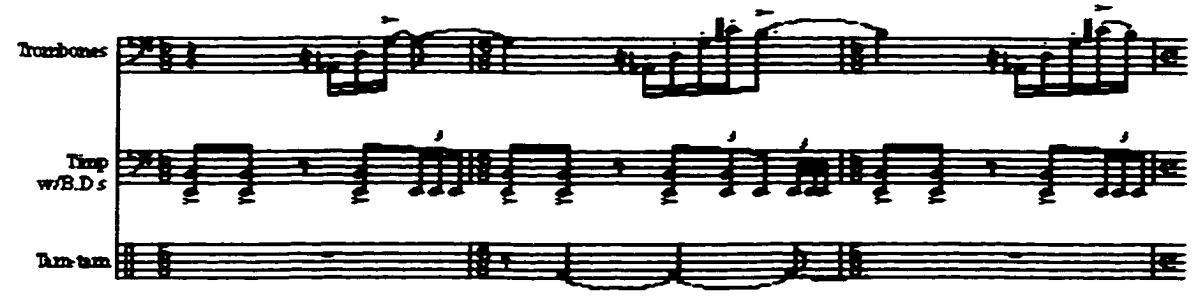


In example 5.28a, the first trombone voice from measures 108 through 110 is given over the percussion rhythm of that same passage. This passage is rhythmically transposed at one level in example 5.28b. Notice that the rhythmic effect is identical between these two examples and that only the value of the notes have changed, giving the appearance that example 5.28b is somehow less difficult. Further simplification and transposition is possible as illustrated in example 5.28c.

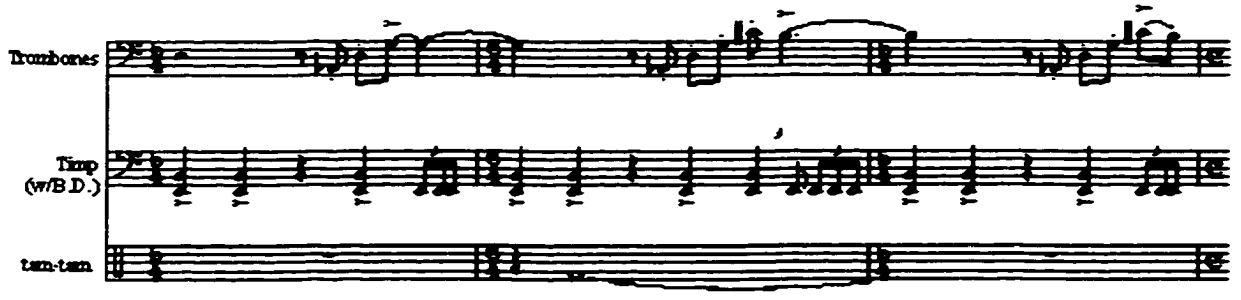
Example 5.28a: Trombone and percussion passage from *and the mountains rising nowhere*, mm 108-110.



Example 5.28b: Trombone and percussion passage from *and the mountains rising nowhere*, rhythmically transposed, mm. 108-110.



Example 5.28c: Trombone and percussion passage from *and the mountains rising nowhere*, rhythmically transposed down to a second level,mm. 108-110.



To summarize, rhythmic transposition is a reinterpretation of notation, mastered first in transcription and later by sight. There will be times where it may be more effective to split one measure of a complex meter into two measures of a less complex

meter.[91] In this circumstance, the player makes use of higher levels of subdivision while retaining the verbal language employed in counting.[92]

That our rhythmic vocabulary has increased particularly in wind ensemble literature is not surprising. As stated previously, an expansion of rhythmic dexterity within our compositions is only logical and more than likely inevitable in the evolution of organized music. This evolution parallels at a distance the evolution of harmony, and like that evolution, challenges us as both performers and listeners. This evolution requires an expansion of our musician's rhythmic vocabulary at earlier stages in their musical development and has brought the forces of percussion to bear in a role of equality never before experienced. This in turn causes us to consider the impact that percussion has on wind performance.

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[91] Consider a measure of common time where there is a dominance of thirty-second notes. In this setting it may be more effective to divide the measure into two groups of 4/8 and then transpose those into two measures of 4/4, making the thirty second notes appear as sixteenths.

[92] Over many years this author has observed numerous methods of counting rhythms and is still convinced that the fractional system is most effective. While it may not aid in articulation or diction as effectively as others, its basis in mathematics makes a very effective translation to music. It is also this author's experience, that young musicians who are weak in this system of counting are even more ineffective when they try to apply other systems.

Chapter VI

Percussion as Primary to the Compositional Process

In a 1993 Doctor of Musical Arts dissertation, Craig Pare concluded that the twentieth century had seen an increase in the use percussion in band compositions. Citing four specific works he identified a maturation of and increased sophistication in percussion use, singling out a new use of percussion as integral to the compositional process.[93] Three of the works Pare cited have already been discussed in this document: Vincent Persichetti's *Symphony for Band*, Karel Husa's *Music for Prague, 1968*, and Joseph Schwantner's *and the mountains rising nowhere*.

Pare discusses the role of percussion in the latter half of the twentieth century as becoming primary in the compositional process. To be considered primary in the compositional process, Pare determined that percussion had to state themes and motives on their own. In fact, in a number of examples to which Pare refers the percussion state themes and motives prior to any wind instrument. However, an even broader paintbrush can be applied when considering percussion as primary in the compositional process. The following criteria identify percussion in this role.

1. Size of percussion forces utilized, not only in player number but in variety of equipment and playing implements used.
2. Timbre combinations of winds and percussion used to create unique sounds and textures.
3. Materials given to percussion not vertically duplicated, giving them sole proprietorship over the passage.

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[93] Pare, 82.

These criteria are evident in the works of Varèse and Messiaen already cited in this document. In *Hyperprism* for example, nine players in the percussion section equal in number the nine wind players required. If the tenth optional percussionist is used, the percussion out-number the winds. In addition, the uniqueness and number of percussion instruments employed in *Hyperprism* coincides with what Pare called "the use of traditionally uncommon instruments," making use of "new combinations of percussion instruments," and the development of "new timbres obtained by combining percussion sounds with woodwind and brass instruments."[94] (See Example 6.1)

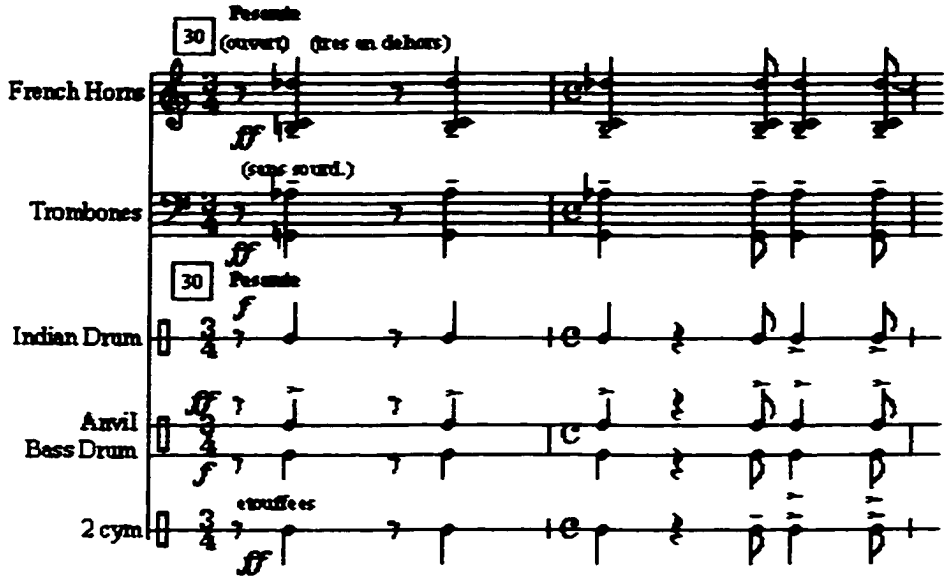
Example 6.1: *Hyperprism* by Edgar Varèse. Percussion instrumentation.

Indian Drum	Bass Drum	Tam-Tam (or Gong)
Lion Roar	Snare Drum	Crash Cymbals (2)
Sleigh Bells (2 sets)	Ratchets (2-small and large)	Suspended Cymbal
Tambourine	Siren	(Large Chinese)
Slap Stick (2)	Chinese Blocks (2-high/low)	
Anvil	Triangle	

In *Hyperprism*, new percussion sounds emerge from the unique instruments selected by Varèse. In the opening gesture, the bass drum, crash cymbals, gong and lion's roar combine not in their attacks, but in their resonance, shading the overall sound and creating depth and penetration. The combination of the Indian drum, tambourine, bass drum, and crash cymbals with muted trombones and horns at measure 30 in a unison rhythmic statement creates a thick, shimmering, and deeply impactive musical moment. (See Example 6.2)

[94] Pare, 82.

Example 6.2: Varèse: *Hyperprism*, mm. 30-31.

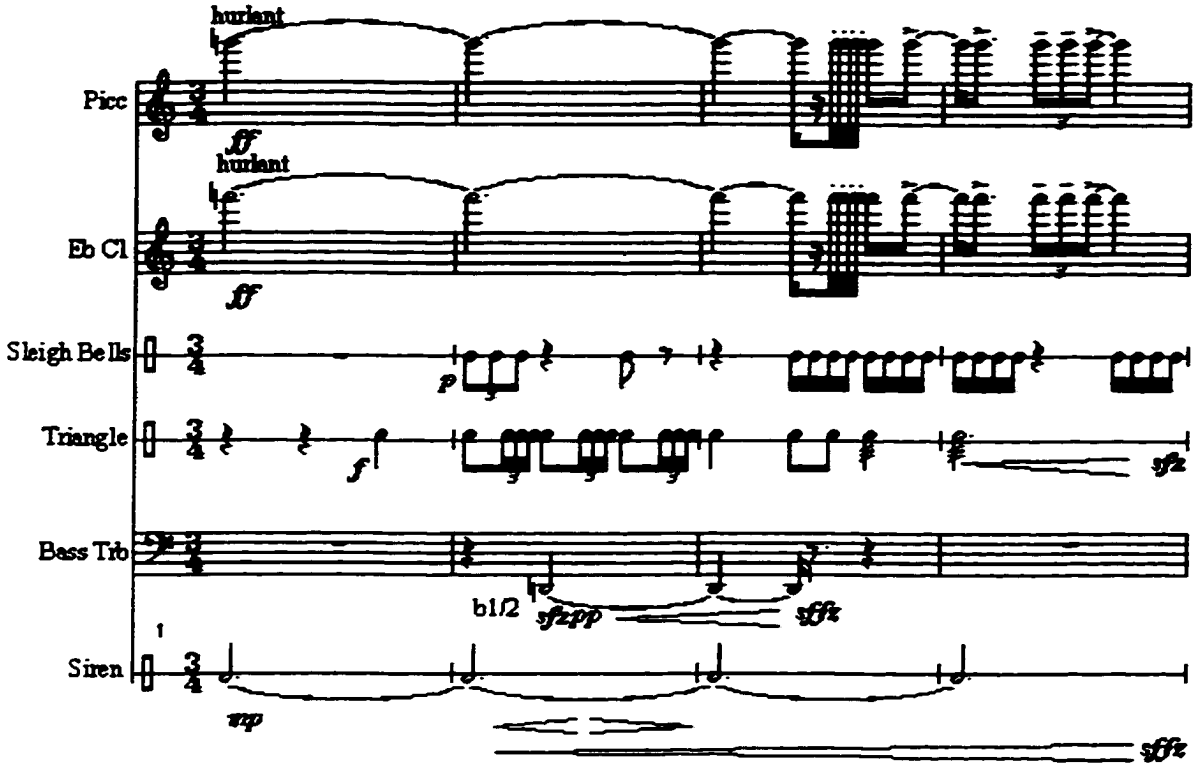


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Example 6.3, also from *Hyperprism*, further demonstrates percussion used in combination with winds to effect new sounds. This example (measures 72 –75) illustrates a combination of high piccolo and Eb clarinet with triangle and sleigh bells. This effect is perhaps best described as being like glass wind chimes, especially when the wind instruments break from their sustain and articulate the rhythm in the final two measures of the excerpt. The above instruments are juxtaposed with siren and bass trombone, which in their low tessitura and dynamic, interrupt the moment like a freight train. While two textures perform in stark contrast to one another, they serve as a marvelous indication of Varèse's concept of planes of sound repelling, merging or existing at the same moment in time.[95]

[95] There are other active percussion instruments in this passage, but those outlined in the example work in conjunction with one another while the others have a separate function.

Example 6.3: Edgar Varèse, *Hyperprism*, measures 72-74.

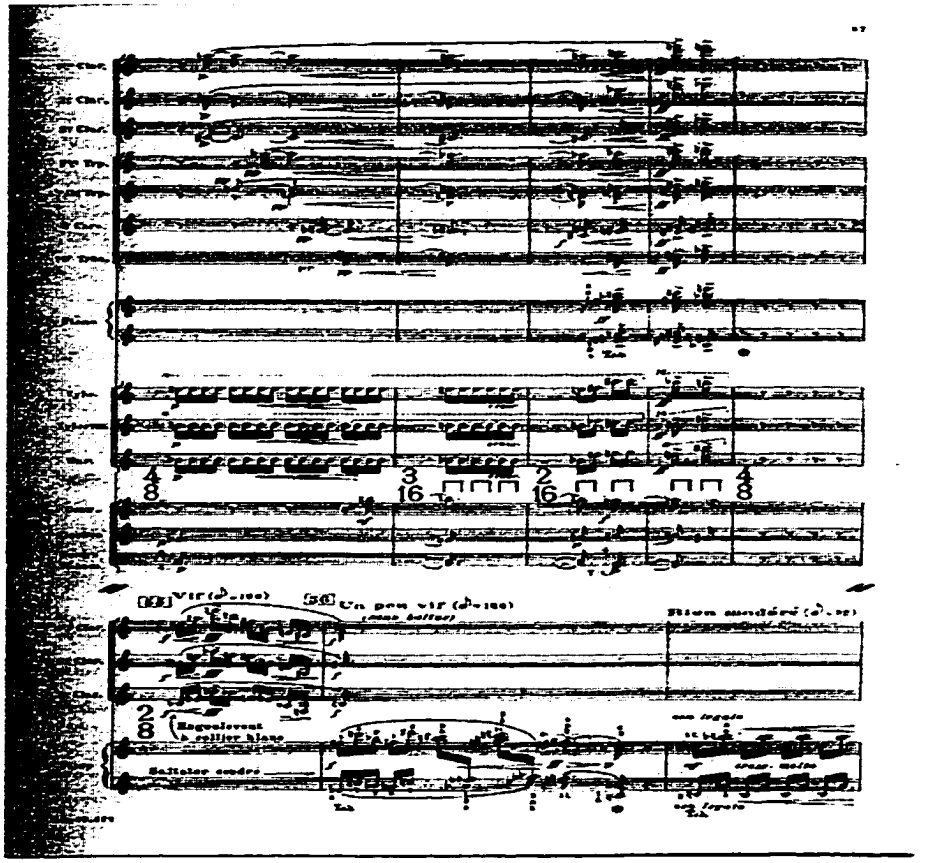


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Messiaen's *Couleurs de la Citè Céleste* is similar to *Hyperprism* in that the percussion forces employed nearly equal the winds in number. In addition to the thirteen brass and wind players, Messiaen calls for four gongs, two tam-tams, marimba, xylorimba (a name formerly given to marimbas of 41/2 octaves), xylophone, cencerros (tuned cow bells), chimes, and piano. Messiaen also directs that the percussion instruments should be placed near the front of the ensemble, obscured only partially by

the three clarinetists.[96] Often, the piano performs in a soloistic role and the mallet percussion frequently perform unique material, again indicating that these instruments are primary to the compositional process. Similar examples can be found throughout the score. (See Example 6.4)

Example 6.4: Meassiaen *Couleurs de la Citè Céleste*, five after rehearsal 54 to two after rehearsal 56. Soloistic use of piano and unique material in the percussion demonstrate these instruments to be primary in the compositional process.

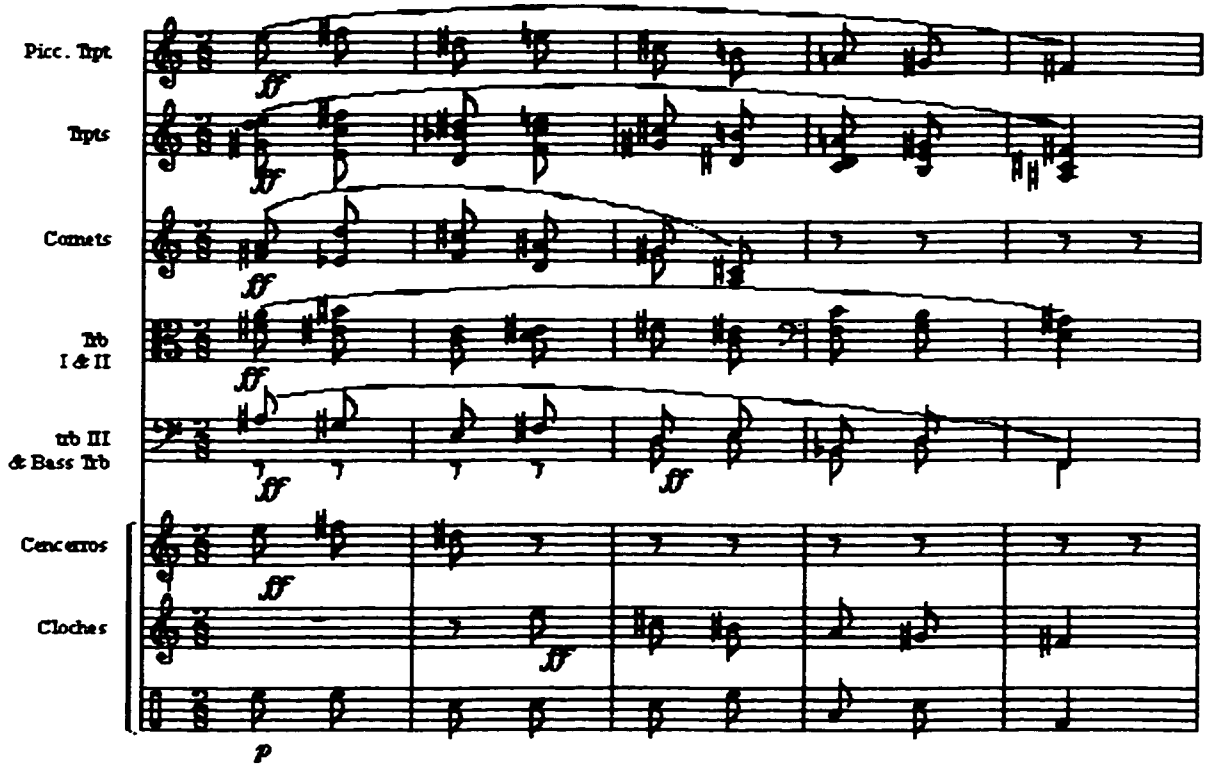


Couleurs de la Citè Céleste by Olivier Messiaen
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[96] Olivier Messiaen, Couleurs de la Citè Céleste, (Paris: Alphonse Leduc, 1966), preface to score.

Further illustrations of the use of non-traditional instruments (such as cencerros) can be seen in previous examples. (See Example 4.10, p. 86 and Example 4.6 p. 80) These earlier examples also illustrate traditional instruments (xylophone, xylorimba, marimba) being used in combination with wind instruments to create new timbres.[97] Additionally, an interesting use of gong, tuned cowbells and chimes in conjunction with winds is seen in a fragment of the closing "Alleluia du Saint-Sacrement" of *Couleurs.* (See Example 6.5)

Example 6.5: Messiaen: *Couleurs de la Citè Céleste.* Use of uncommon instruments.



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[97] Similar treatment is observable between rehearsal 67-68 in the score.

David Maslanka is another composer who makes extensive use of percussion. This is not only obvious in his major works, such as *Symphony No. 4* (1992) and *Symphony No. 2* (1987),[98] but includes works commissioned for high school bands such as *Morning Star* (1997).[99] The instrumentation for *Morning Star* is typical of Maslanka's percussion writing. Maslanka often utilizes a variety of mallet percussion instruments, relying heavily upon marimba, somewhat of a rarity in wind ensemble literature prior to 1980. Also included in *Morning Star* are numerous membranophones and metallophones. The complete instrumentation of percussion in *Morning Star* includes the following 25 instruments listed below.

Marimba	6 tom-toms	Sleigh Bells
Xylophone	bongos	Medium Gong
Vibraphone	tenor drum (2)	Tam-tam
Glockenspiel	bass drum (2)	Med. Crash Cymbals
Chimes	Tambourine	Sm. Sus. Cymbal
Crotales	Snare Drum	Lg. Sus. Cymbal

Typical of Maslanka's percussion writing is the fact that these instruments not only are used in support of winds (i.e mallet percussion doubling woodwind figures), but are given independent lines a well. Also typical are his use of tom-toms, bongos and other membrane instruments that feature highly charged rhythmic passages. In addition, his timpani scoring is often melodic and/or highly active in terms of pitch changing.

Consider Example 6.6 which illustrates a timpani passage from *Morning Star*. The rhythm moves in whole notes and the tempo is quite bright. If the percussionist

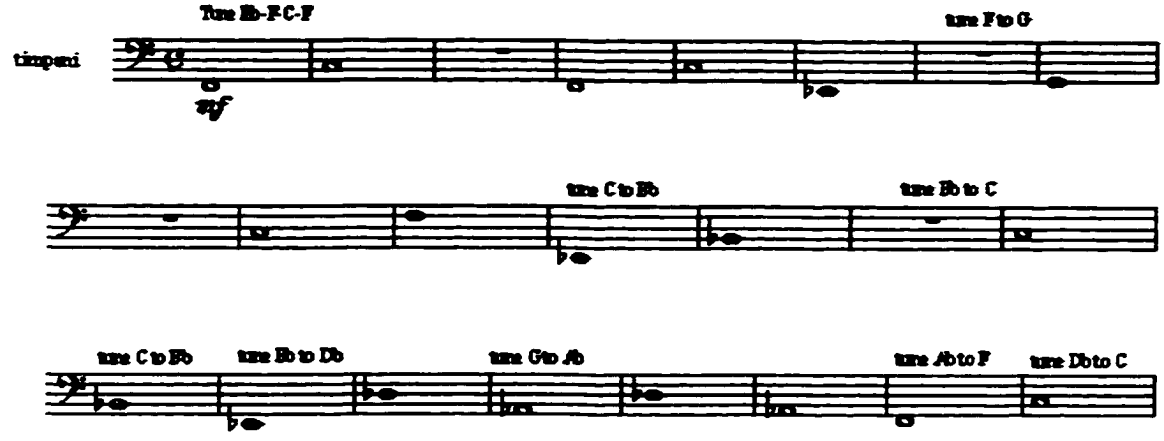
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[98] *Symphony No. 2* requires 55 percussion instruments for six players, including a call for the use of quart mixing bowls with small amounts of water in them. This has proven very difficult to accomplish, therefore most performances substitute antique cymbals.

[99] *Morning Star* was written for the Grand Ledge High School Wind Ensemble from Grand Ledge, Michigan and premiered in May of 1997 by that group.

plays on four drums, they should be tuned to Eb-F-C-F. In order to perform this passage a total of 8 pitches changes are required. This presents a challenge to high school percussionists and may also challenge some collegiate players.

Example 6.6: David Maslanka: *Morning Star* timpani excerpt. mm. 405-425



The timpani, used in combination with the low brass, are primary to the compositional process in the previous example. Noteworthy is that the dynamic indicated in the timpani is higher than any other instruments performing at that moment. The timpani part produces a rippling of sound waves over the brass, with the winds providing sustain and body to the chord. The conductor might consider what Maslanka stated in the preface to the score regarding the concept of this work,[100] which allows an almost religious, psychological interpretation of the musical moment. The depth of sound surrounds the performers as if immersed in a warm spring, sinking ever slowly into the embrace of the water, not only cleansing body, but soul as well. It is a moment of renewal, a baptism and a new beginning. Conveying this imagery to the timpanist may assist in developing the proper articulation and balance.

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[100] David Maslanka, *Morning Star*, (New York, Carl Fischer, 1999), preface to score. Maslanka writes, "*Morning Star* is about beginnings, the dawning of a new day, ..."

Just as *Morning Star* demonstrates an expanded instrumentation for high school wind groups, *Symphony No. 4* demonstrates this on an even larger scale at the professional level. The instrumentation in *Symphony No. 4* calls for over 45 percussion instruments and includes the following:

Xylophone	Small Wood block
Glockenspiel	Large Bull Roar
Vibraphone (2) with bows	Anvil
Marimba (2) with bows	Lg Sus Cymb (3) with bows
Chimes	Crash cymbals
Crotales (bow required)	Bass drum (2)
5 toms (2 full sets min. required 3 sets specified)	Tam tam (2)
	Sm. Sus. Cym.
snare drums (2)	Very Sm. Sus. Cym.
piccolo snare	5 non-pitched gongs

Piano and Organ

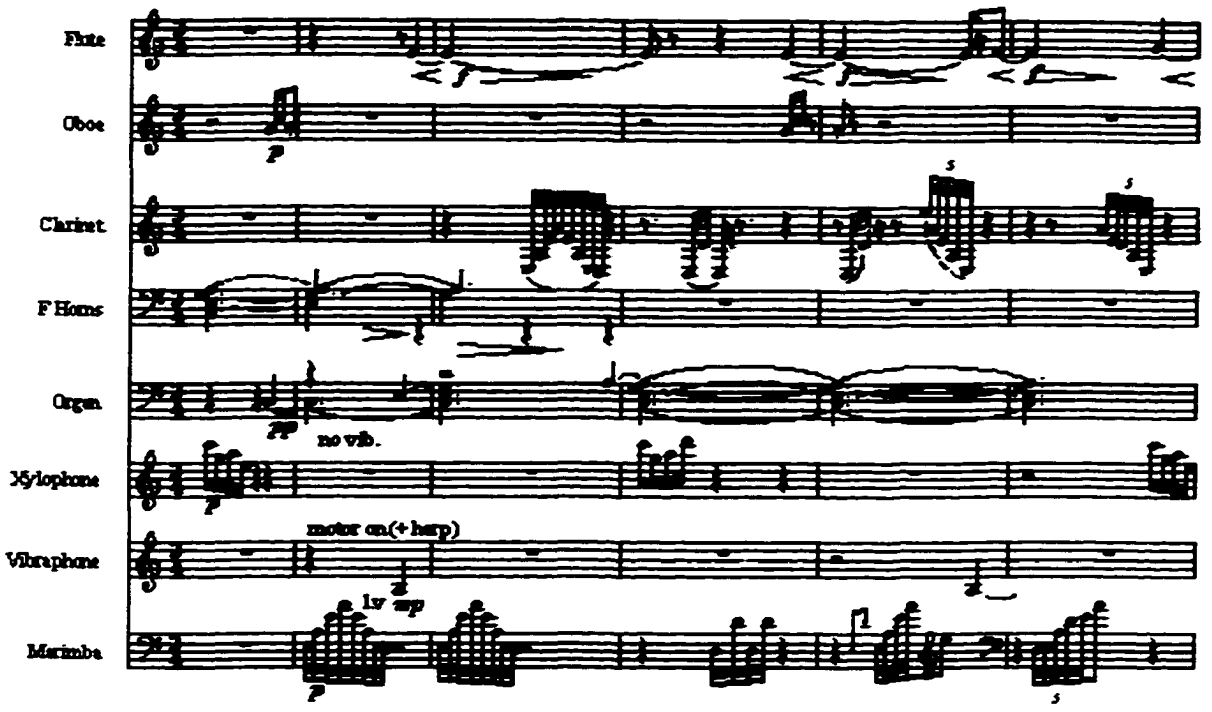
In *Symphony No. 4*, mallet instruments often coincide with woodwinds, not only serving to reinforce, but to present a specific combinatorial timbre. Similar to *Morning Star,* however, there are instances where mallet percussion perform unique material and therefore fulfill a role that is primary in the compositional process.

In the following excerpt from *Symphony No. 4*, the low register of the organ and horn provides a warm and solemn undercurrent. (See Example 6.7) The solo clarinet blends with the low register of the marimba, and though each share similar motivic ideas, they are independent. The flute, harp and vibraphone combine, adding a shimmering quality to the musical atmosphere, while the oboe and xylophone, again independent, provide an element which acts as relief to the dominating low registers.

Also similar to what has already been seen in *Morning Star*, Maslanka's timpani writing is fairly complex, requiring a solid rhythmic vocabulary, as well as a melodic sense and ability. Example 6.8 illustrates both of these facets, where the timpani function

melodically with the low reed and brass and the multi-toms performing a complex rhythmic passage.

Example 6.7: Maslanka *Symphony No. 4*, mm. 360-65.



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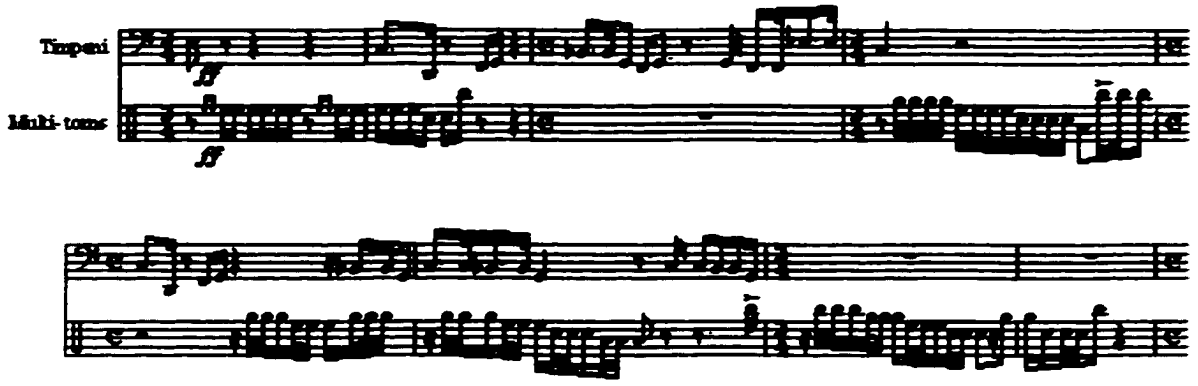
In general, Maslanka's percussion writing imitates (in compass) Joseph Schwantner in his work *and the mountains rising nowhere* (1977), which Pare cited as a benchmark work for the development and use of percussion in band literature.[101]

Other composers in the later half of the twentieth century have made extensive use of percussion and employ these instruments in a manner primary to the compositional process. In 1975, an aleatoric work by John Paulson entitled *Epinicion* featured

[101] Pare, pg 68.

percussion in a unique way. In this work, the percussion open and/or close every section, serving as a guide to the performers, especially in the improvisatory passages.

Example 6.8: Maslanka *Symphony No. 4*, mm. 588-95



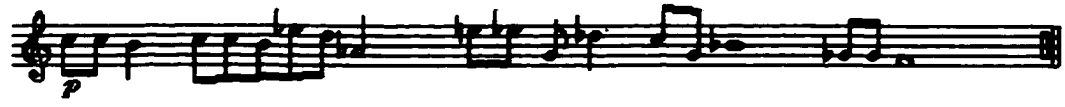
Symphony No. 4 by David Maslanka
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Epinicion opens with suspended cymbals followed by varied statements of the main theme. These appear first in muted trumpets, then in solo flute, followed by a fragmentation of the theme in piccolo, alto saxophone and bassoon. Paulson progresses to the improvisational section through a passage featuring brass and low reeds. Percussion statements close each of the previously cited passages serving as cues for progress in the work.

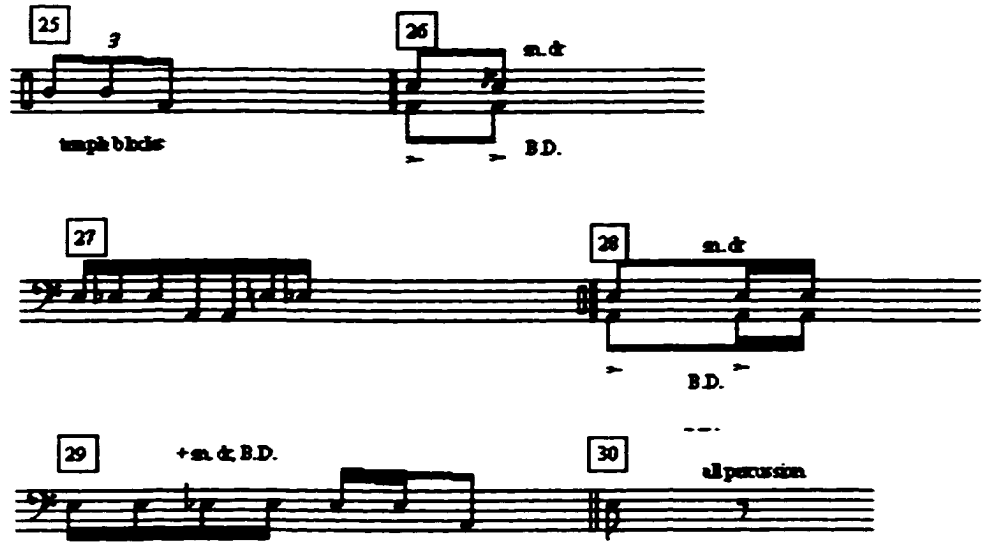
In the first free form section, chimes are used to state the main theme. As was the case in the introduction, each of the following sections is marked by a percussive gesture that indicates progression to the next section. Example 6.9 illustrates the theme of *Epinicion* as well as each of the percussive gestures used to outline of the form of the work.

Example 6.9: John Paulson: *Epinicion*. Theme and percussive markers.

Theme as stated in chimes



Percussion gestures that mark each section



Epinicion closes with a penultimate gesture by the percussion that is followed by somber, improvised passages in three solo instruments.[102] The percussion gesture provides the climactic moment, expressing the chaos, terror, and psychologically devastating affects of war. Each of the six percussionists is used to perform this passage, with one player manipulating gong and suspended cymbals in a final, tumultuous crescendo. The other five percussionists enter as the conductor cues them, performing

[102] According to the composer John Paulson, an Epinicion is a Greek song of triumph sung at the end of battle. The melos of the song is however, anything but triumphal sounding. This author had the pleasure of performing this work under the baton of John Painter while a member of the Illinois All State Band. Paynter's description of the battle scene and the mourning of the survivors as they combed the battlefield for their dead and wounded was exceptionally moving. His description of this penultimate percussive gesture was that it represented the realization of what war does to humanity and that from the survivor's perspective, it represented pure anguish.

what might be best described as a ping pong ball effect on various battery percussion instruments, also making a substantial crescendo as they accelerate through their gesture. (See Example 6.10)

Example 6.10: *Epinicion.* Ping pong ball effect in, rehearsal 38.



Each of the percussion gestures in *Epinicion* plays a vital role in establishing or changing mood. During the free form section of the work, these gestures heighten tension and lead to the climax. Furthermore, a wide variety of percussion instruments are employed, including mallet percussion instruments which are not relegated to doubling winds, but are given unique material as well.[103]

Another work that demonstrates percussion in a role primary to the compositional process is John Barnes Chance's *Incantation and Dance* (1964). Appearing five years after Persichetti's *Symphony for Band,* this work makes extensive use of percussion in layered, driving rhythmic patterns that provide the underpinning to the body of the piece. A program note describing the work states, "Here is no pretty tune but a paroxysm of rhythm, a convulsion of syncopation that drives on and on, mounting in tension, to a shattering climax of exaltation."[104]

Five years later, the composer Ron Neslon introduced *Rocky Point Holiday* (1969), which also prominently features a wide variety of percussion instruments. Nelson's instrumentation includes the following percussion instruments:

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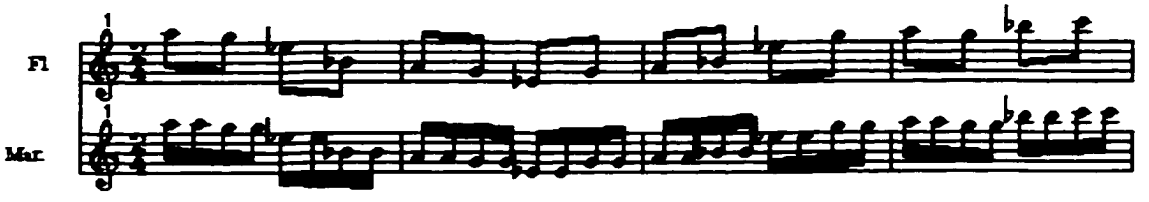
[103] Percussion instruments in Epinicion include: bells, vibes, chimes, xylophone, timbales, temple blocks, two suspended cymbals (small and large), tam-tam, snare drum, bass drum, and four timpani.

[104] Norman Smith and Albert Stoutamire, Band Music Notes, (Lake Charles, La.: Program Note Press, 1989), 46.

Celesta	vibraphone	marimba	suspended cymbals	timpani
xylophone	glockenspiel	bass drum	crash cymbals	
triangle	tambourine	gong	maracas	
bongos	piano	Field drum	anvil	

Of particular interest in *Rocky Point Holiday* is how the mallet parts are exploited for their timbral possibilities. Nelson uses them extensively in combination with harp, celesta and piano, often giving them unique material. He also treats these instruments traditionally at times, doubling woodwind lines for strength, clarity, and support. One technique Nelson employs is writing sixteenth-note passages in the mallets over a similar eighth-note wind passage, adding energy and direction. (See Example 6.11) In this setting, Nelson uses the mallet percussion to provide an effervescent quality, realizing their percussive nature as well as their tonal ability.

Example 6.11: Ron Nelson: *Rocky Point Holiday.* Percussion rhythmic enhancement of woodwind line to add energy and direction, six measures before rehearsal 16.

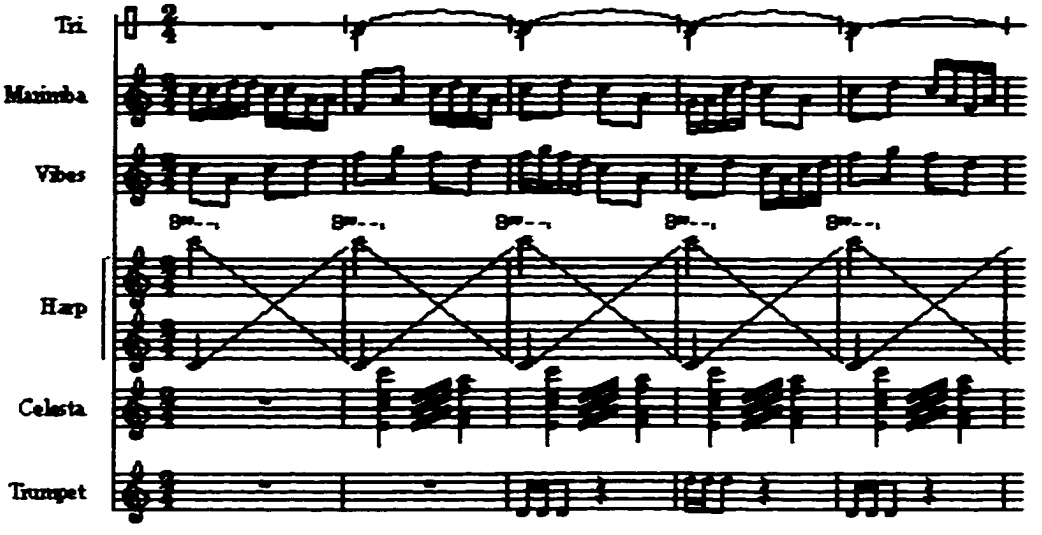


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In example 6.12, independent material in the mallets is shown in combination with harp, celesta, and triangle. Also notice that the trumpet below these instruments is muted and performs in more a percussive manner than a tonal one. Nelson's percussion writing exemplifies the expanded role percussion can play. Similar writing is seen in

other major wind works that span Nelson's composition career including *Medieval Suite* (1981), *Aspen Jubilee* (1988) and *Passacaglia* (1993).

Example 6.12: *Rocky Point Holiday*, one measure before rehearsal 16.



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Still other composers in the latter half of the twentieth century have employed percussion in primary roles. These include works like Warren Benson's *Danzón-Memory* (1990), *Wings* (1984), and *Polyphonies for Percussion* (1961) and Michael Colgrass' *Arctic Dreams* (1991) and *Winds of Nagual* (1985). Other notable composers include Francis McBeth in works like *Masque* (1968) and *Kaddish* (1977), Fischer Tull in works like *Sketches on a Tudor Psalm* (1971) and *Toccata* (1970), and Elliot Del Borgo in works like *Do Not Go Gentle Into That Good Night* (1979). A comprehensive listing is impossible, but it is apparent that composers after 1970 do not hesitate to make extensive use of percussion. Clearly, the twentieth century was a period of great exploration in this realm.

The impact this role has on conductors is felt in three ways. First, conductors must be willing to accept the primary role that percussion has been given in many compositions and be able to interpret this role meaningfully. This can be accomplished by removing stereotypical views of the perceived limitations of percussion instruments (and players). Percussion should be perceived as demanding of the same consideration given to any other instrument. With acceptance of this role, interpretive possibilities can be explored involving manipulation of sound through mallet choice, dynamic nuance, playing area, style and force of stroke and conceptual development. Logically, issues of articulation, blend and timbre then become paramount and their impact on the entire ensemble can be realized.

Second, and seemingly basic in concept, is the need for conductors and composers to have a thorough understanding of the percussion family of instruments. This includes understanding specifically what the required instrument is and the appropriate playing techniques required. An obvious consequence of an expanded percussion vocabulary is the need for appropriate equipment. Just as muted trumpet is a poor substitution for oboe, substituting bells for xylophone is equally undesirable, not to mention completely outside of the timbre spectrum intended. Hopefully just as obvious, two small tom-toms are a poor substitute for bongos. Conductors must ensure that their percussion inventories support the literature they perform. It is an expensive proposition to do so, but it is vital to give integrity to the music.

A third, more general difficulty is created through extensive use of percussion. This difficulty involves a conductor's ability to verbally describe sounds that result from the combination of percussion and winds as well as combinations of percussion

instruments. A wide array of adjectives and analogies are useful and should be at the conductor's disposal to stimulate and create mental images that impact the performance. Edward Lisk offers two pages of descriptors that can expand a conductor's vocabulary. As an exercise, he recommends:

> Speak the word with its *felt meaning*, using a variety of inflections. Express the words with various extreme levels of profoundness or with the tender, gentle care of a softly spoken expression. The variations of expression are only as expansive as your imagination. Most importantly, each term provides another avenue and source in the subtleties of feeling, expression and communication...*that which flows through all musical sounds and conducting gestures.*[105]

An inherent difficulty in this exercise lies at the essence of interpretation. To speak the "felt meaning" of a word or phrase is itself an interpretation. Given ten individuals reading the same phrase one will likely have ten variations on the theme. Interpretation involves experience and each individual will bring different perspective to the musical table. Therefore, a conductor who has not experienced sounds produced in the percussion section as malleable accepts what is given by the performer and does not influence the musical result. The same difficulties of interpretation influence literature, architecture, theatre, and visual art. Musician and author Edward T. Cone states it this way:

> Just as we can call every reading of a poem – even a silent one - a performance, so we might say that really to look at a picture or to view a statue from all sides or to walk through a building, is to perform the picture or statue or building. Actually, the contemplation of spatial art almost always involves not one but several performances – or at least several partial performances. We look from side to side, up and down, diagonally and spirally, taking our time and clarifying for our own satisfaction first one and then the other connection.[106]

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[105] Lisk, pg 102.

[106] Edward T. Cone, Musical Form and Musical Performance, (New York: W.W.Norton and Co., 1968), 33.

Musicians search for the elusive "perfect" performance, knowing full well that this not an attainable goal. Yet is this not what makes the musical art unique? Each performance of a work represents the selection of interpretive choices. These choices make explicit aspects of the music that we as interpreters deem primary. Unlike architecture or spatial art, music is experienced in a linear fashion: the musical event occurs and a relationship is built to what precedes it. While there is anticipation of where the music may move, confirmation is withheld until the next event passes or until the work ends. Unlike viewing a statue or painting, live music is experienced with an inability to go back and analyze individual aspects of its performance. Again, Edward Cone offers this insight:

> But when we read a poem aloud, or actually play a piece of music, we must choose a single complete performance. The more complex the poem or the composition, the more relationships its performance must be prepared to explain – and the less likelihood that a single performance can ever do the job. The composition must proceed inexorably in time; we can not go back to explain; we must therefore decide what is important and make that as clear as possible, even at the expense of other aspects of the work. After all, there will be other performances! Every valid interpretation thus represents, not an approximation of some ideal, but a choice: which of the relationships implicit in this piece are to be emphasized, to be made explicit?[107]

If conductors agree with these statements and acknowledge the ways in which percussion has evolved over the last century, then they are obligated to develop a language that enhances and illuminates a more meaningful interpretation of percussion and wind sonorities. Such a language acknowledges the impact winds and percussion have on each other. Perhaps the greatest resource for the development of such a language is the human voice, making one possible interpretive solution the emulation of sounds

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[107] Opcit, pp. 33-34.

through vocalization. In this manner a personal model of the sound is built and most easily imitated.

Vocalization is a physical imitation, providing an experience of "felt meaning." This physical imitation can be verbally described and enhanced with the development of mental imagery. For the conductor, once such a concept is understood, the sound is redirected and evolves to a physical gesture in the baton, hand, body, face, or impulse of will.

Conductor's may also benefit from the percussionist's manner of sound production. A percussionist's style of stroke has an impact on the quality of sound produced. A conductor who observes these movements can absorb them directly into their gestural vocabulary.

Consider an analogy most commonly associated with performance on bass drum. Many musicians have heard conductors ask bass drummers to "draw the sound out of the drum." A conductor who requests this emulation often imitates the desired stroke, using a circular motion. What the conductor desires in this circumstance is a less *staccato* and more *legato* articulation. The performer does not really draw the sound out of the drum. Rather, the style of stroke is changed from a direct attack to a glanced or softer attack. A more astute conductor who uses this analogy also makes reference to where the drum should be struck in an effort to manipulate the body and depth of the sound. In using this analogy the conductor has developed a gesture meaningful to the percussionist and himself and has done so with conceptual rather than technical description.

It is reasonable to suppose that percussion will continue to be used extensively in compositions for the wind ensemble. Further, it seems reasonable to expect that the

current generation of composers will continue to create expansive works like Manslanka's symphonies and Schwantner's *and the mountains rising nowhere*, deeply involving percussion and percussive gestures in their compositional technique. Through the composer's expansive use of percussion, a demand for more interesting and challenging percussion writing has also emerged, in turn furthering the need for better percussion education.

Only history will evaluate the outcomes of these developments, but it is clear that the expanded compositional possibilities provided by percussion have helped to propel wind composition to new heights. To ignore these developments is the fault of the conductor, not the music. Francis McBeth wrote:

> The wind literature has accrued more great works in a short amount of time than any repertory in history. It is the podium alone that is our Achilles heel at this point in our history; it is our most serious problem. Masterpieces of any medium become "banal" in the hands of amateurs.[108]

McBeth's comments came in a 1981 response to a letter he had received from an individual doing doctoral research on the wind ensemble movement. Nineteen years later his comments are still appropriate and applicable to the impact of percussion developments in wind ensemble literature.

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[108]Cited in: Frederick Fennell, The Wind Ensemble, (Ouachita University, Arkansas, Delta Publications, 1988), 4.

Chapter VII

Conclusions

The twentieth century has been a period of unparalleled growth for percussion and bands. The perspective of the past one hundred years demonstrates that the band movement is still in its adolescence relative to the over four-hundred years of orchestral and choral music. Historically, we are in a unique position to evaluate the impact wind and percussion writing has had on musical growth during this period, both in and outside the wind ensemble. The following timeline concisely illustrates this unparalleled growth and facilitates this discussion, providing a review of benchmark compositions for wind ensemble.

1918 *L'Histoire du Soldat* by Igor Stravinsky
Extensive use of multi-percussion, sometimes in primary role.

1922-23 *Hyperprism* by Edgar Varèse
Percussion forces exceed wind instrumentation, winds imitate and emulate percussion sonorities.

1923 *Octandre* by Edgar Varèse
Large percussion forces employed.

1924-25 *Intégrales* by Edgar Varèse
Large percussion forces employed.

1931 *Ionisation* by Edgar Varèse
Major work for percussion exemplifies the composer's dedication to percussive sound. It would be another twenty years before a work of similar caliber was written for percussion ensemble.

1958 *Symphony No. 6* for Band by Vincent Persichetti
Percussion of indefinite pitch used to state themes before wind players and a rhythmic vocabulary in the winds reminiscent of percussion writing.

1966 *Couleurs de la Citè Céleste* by Olivier Messiaen
Highly complex rhythmic vocabulary and extended use of percussion.

1968 *Music for Prague, 1968* by Karel Husa
Very dense rhythmic vocabulary and unique third movement devoted enrtirely to percussion.

1977 *and the mountains rising nowhere* by Joseph Schwantner
Percussion forces unparalleled by any previous work, highly dense rhythmic vocabulary and dominating treatment of percussion.

1983 *Symphony No. 2* by David Maslanka
Percussion forces take on proportions only seen in Schwantner, but with more focus on mallet instruments than Schwantner.

1984 *A Child's Garden of Dreams* by David Maslanka
Percussion forces continue to be vital to his writing.

1986 *Symphony No. 4* by David Maslanka
Percussion usage continues to be extensive and is now a defining characteristic of his writing.

1988 *Fire Works* by Gregory Youtz
Demonstrates the intent of a composer to have an entire ensemble utilized as a drum set.

1991 *Arctic Dreams* by Michael Colgrass
Demonstrates another prominent composer making extensive use of percussion.

1992 *Danzón-Memory* by Warren Benson
Demonstrates another established composer making extensive use of percussion.

Through the above timeline, it becomes obvious that the use of percussion was championed early on by Edgar Varèse. The gaps of time between the works by Varèse and Persichetti, and then between Persichetti and Messiaen may indicative resistance to the increased use of percussion. Many factors might have influenced this, including percussion instrument development, changes in the standards of percussion pedagogy, physical limitations of equipment in ensembles, and even psychological resistance to considering percussion worthy of a role beyond their traditional one. Regardless of the reasons, it is evident that after Persichetti and Messiaen, the gaps of time between important works using percussion decreases by the late 1980's and 1990's where percussion writing in wind ensemble literature has enjoyed its greatest use.

This is due largely to a recent focus on the wind ensemble as a professional organization that exists to make music for the sake of music and not merely to perform a function. As Richard Franko Goldman states, "The band never existed purely for the purpose of making music; it was invariably formed and made music for some specific need or occasion."[109] This change occurred, in no small way, through the band commissioning movement that began around 1945 with Edwin Franko Goldman.

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[109] Richard Franko Goldman, The Concert Band (New York: Rinehart and Company, 1946), 6.

Early in the twentieth century, bands relied primarily upon military band works or transcriptions of orchestral works for their repertoire. The commissioning movement has had a great impact on the development of a unique, quality wind and percussion repertoire that elevates the band's status beyond functionality, providing a highly artistic outlet for serious wind and percussion players.[110]

It is possible to understand the development of percussion as directly related to the development of the wind ensemble. It is no coincidence that the two have experienced incredible growth concurrently, especially post 1940, and it seems logical that the band medium would provide opportunities for percussion development since the orchestral tradition had not previously included such a deep interest in percussion. It is also not important to attempt to determine which affected the other more greatly. The fact remains that they influence each other in their coexistence. Like siblings growing up together, each borrows from the other, learning and maturing, one taking on characteristics of the other and yet remaining individual.

Conductors should not fear the challenges encountered when interpreting the expanded role percussion has assumed in wind composition. On the contrary, the challenges can be the most rewarding aspect of interpreting and conducting music. Keeping these four factors in mind as they prepare scores, conductors can better plan rehearsals and execute performances.

1.) Winds performers are influenced by percussion performance, either in direct imitation or interpretive emulation, relative to sonority, timbre, texture, and articulation.

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[110] Frank Battisti, The Twentieth-Century American Wind Band/Ensemble (Ft. Lauderdale, Fl.: Merideth Music, 1995), 65-77.

2.) Percussion performers are influenced by wind performance, either in direct imitation or interpretive emulation, relative to sonority, timbre, texture, and articulation.
3.) An increased rhythmic vocabulary, largely influenced by percussive possibilities, has placed greater demands on performers in terms of articulation and expanded rhythmic/technical ability and is observable in compositions where winds fulfill the percussive role of support and punctuation.
4.) An increase in the use of percussion has furthered compositional possibilities and has lead to a role for percussion that is often primary to the compositional process.

Each of these factors has a relevance to the study, rehearsal, interpretation and conducted performance of wind ensemble literature. The following guide will aid in the identification and interpretation of these issues.

Guide for Interpreting Wind Imitation and Emulation of Percussion

Conductors can identify passages where there is an implicit indication for winds to emulate and imitate percussion by following the steps outlined below.

1. Complete an analysis of the percussion voices in the score, looking for various levels of activity.
2. Determine the relative uniqueness of the percussion part or search for duplication/repetition in the wind voices.
3. Evaluate the implements to be used on the percussion instruments and tone of these instruments, developing verbal descriptors and mental imagery that will facilitate conveying the quality of the sounds to the wind players.
4. Evaluate the aspect of the wind performance that calls for imitation or emulation, be it rhythmically related, texturally related, or related to sonority.

Once this identification has been accomplished, conductors can make interpretive choices. These may involve following the three steps listed below.

1. Manipulate articulation in the passage to achieve the desired imitation, focusing on inflection and dynamically shading the passage.

2. Manipulate balance between wind voices to achieve desired textural elements and sonority in order to more accurately reflect the texture and sonority of the percussion element being emulated.
3. If the passage is simple imitation, be prepared to make explicit to the players how the texture and sonority change between the voices and how they effect the progress or egress of the work.

Having worked out this plan for rehearsal, conductors can then translate this information into physical actions and gestures that convey a desired meaning. Often, this involves borrowing from the percussionist the style of stroke used to perform a passage and then translating it into a conducting gesture.

It is also important that conductors not become overly involved in lengthy verbal descriptions of sounds, but rather develop a wide vocabulary of succinct analogies and descriptors. In the latter circumstance, ensemble members develop a habit of watching the conductor for physical interpretation rather than waiting for a verbal description. This also fosters a better psychological connection between the players, conductor and the music, with a conductor's passionate gestures providing inspiration and motivation. Conductor Anthony Maiello states:

> The art of conducting is a privilege, an opportunity to recreate and create beauty. Being part of the creative process and emotional experience is complex and virtually impossible to describe with words. The ability to go beyond the technical aspects of making music, where nothing stands between the creator and that which is being created, is a dream to which every musician aspires. The luxury of "being" the phrase, "living" the melodic line or "breathing" the style of articulation are all prerequisites...[111]

Most musicians would agree with Maiello that words are often wholly inadequate in their ability to convey musical meaning. Yet, aside from personal experience with a wide emotional spectrum, words remain our link to becoming more expressive. This is

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[111] Anthony Maiello, Conducting – A Hands on Approach (New York: Belwin Mills, 1996), 201.

greater reason for conductors to choose their words carefully and avoid cumbersome, cluttered verbal description. Experience on the podium demonstrates that brevity yields the most effective results.

To clarify, consider some of the terminology that Percy Grainger used in his scores. Instead of giving a dynamic *forte*, he used the phrase *to the fore*. How much more effective in conveying issues of blend and importance is this phrase. It direct the performer to be heard, to lead, to be primary, while *forte* leaves the musician only the level of volume. Another term Grainger often used was *clingingly*. This impacts a player's psyche and implores an expression of heartfelt longing, of resistance to departure and keen desire. It implores conductors to stretch notes to their fullest value, to drag the baton with a heaviness and weighted gesture, to reproduce in body, face, and gesture the essence of *clinging*. How much more enriched is the conductor whose entire being lives in the musical moment, and how much more enriched are the performers who are inspired and drawn into that aesthetic experience.

Guide for Interpreting Percussion Imitation and Emulation of Winds

By following the procedure outlined below, a conductor can identify musical passages where there is an implicit indication for percussion to emulate and imitate winds.

1. Complete an analysis of the wind voices in the score, looking for various levels of activity, including themes and motives.
2. Determine the relative uniqueness of the winds and search for duplication/repetition in the percussion considering not only pitched, but non-pitched percussion as well.

3. Evaluate the articulation and tone of instruments, developing verbal descriptors and mental imagery that will facilitate conveying the quality of the sounds to the percussion.
4. Evaluate the aspect of the percussion performance that calls for imitation or emulation, be it rhythmically related, texturally related, or related to sonority.

Once this identification has been accomplished, conductors can make interpretive choices. These may involve the following steps.

1. Manipulate articulation in the passage to achieve the desired imitation, focusing on inflection, mallet and stick choice and dynamic shading.
2. Manipulate balance between percussion to achieve desired textural balance and sonority to accurately reflect the texture and sonority of the winds being emulated.
3. If the passage involves simple imitation, be prepared to make explicit how the texture and sonority change between the voices and how they effect the progress or egress of the work.

As before, having worked out this plan for rehearsal, conductors translate this information into physical actions and gestures that convey the desired interpretation. A result of this effort involves more frequent melding of gestures to highlight the emphasized aspect of the imitated or emulated line, diminishing the need for time beating and leading to more expressive conducting. It may also involve wider focus on dynamic nuance and creating reflective conducting gestures, such as those borrowed from the style of stroke a percussionist develops in their imitation of a passage. When considering percussion emulation of winds, a key to excellence suggests conductors should manipulate their gestures to reflect a desired musical outcome, allowing sonority and articulation to lead the interpretation.

Guide for Interpreting Percussion When Primary to the Compositional Process

It is important that conductors recognize when percussion instruments perform in a role primary to the compositional process. Such a role is most obvious in solo or soli passages or when there is minimal activity in the winds and high activity by the percussion. In other cases this role is more difficult to identify, as in passages where material is traded between winds and percussion, or when percussion performs unique material, either in solo passages or in combination with winds. Once identified, conductors can consider the following six questions to direct a more meaningful performance.

1. What instruments are being employed and what balance issues will be faced?
2. To what degree will mallet choice positively impact issues of blend and balance?
3. To what degree might dynamics be manipulated to combine the sounds most effectively?
4. If the material is related to any wind material, is there a need for imitation and emulation in this passage? If so, how might it be accomplished?
5. If the material is unique, do the wind players borrow from this material later in the piece? If so, is there a need for imitation and emulation and how might it be accomplished. If not, of what importance is the percussion material and how might is be best exposed in the performance?
6. Are there percussive elements inherent in the wind writing surrounding the percussion that relate, enhance, clarify or punctuate the percussion? If so, how can these musical elements be exploited?

In seeking answers to these questions, conductors develop solutions that enhance the performance of the work. By developing greater variety of performance choices, evaluating and incorporating those deemed most musically appropriate and meaningful, conductors increase their chances of arriving at an artistic interpretation. This concept is certainly not new, though advancements in percussion writing now require conductors to thoroughly analyze and probe the percussion for their musical and extra musical qualities.

It also suggests that conductors must relate percussion to the winds around them more artfully, rather than merely accepting their presence or presupposing a supportive or coloristic role.

Guide for Interpreting Winds When in the Percussive Role of Punctuation and Support

An increasingly complex rhythmic vocabulary has developed in wind band literature over the past century and is especially evident post 1970. The increase in percussion usage and the dominant role of percussion in expressing rhythm has no doubt influenced rhythmic vocabulary among wind players. Relative to this expanded vocabulary is a role reversal between winds and percussion where winds are increasingly called upon to perform in the role of rhythmic punctuation and support. From this role reversal comes important considerations for conductors. These include interpreting the direction and meaning of phrases that are rhythmically dominated, accomplishing vertical alignment in complex rhythmic passages and interpreting a more effective articulation for these. To facilitate a more meaningful performance, conductors could follow the procedures below.

1. Evaluate the rhythmic flow, identifying forward or tension creating passages and passages that provide arrival or rest and release from that tension, evaluating and creating a hierarchy of rhythmic cadences and other points of rhythmic emphasis.
2. Add dynamic nuances such as crescendo and decrescendo, accent, *tenuto*, rubato, etc., to add weight to passages deemed important and to provide flow to the overall line.
3. Evaluate existing articulation, or add/alter articulation to bring out inherent inflection, to develop a hierarchy of important points, avoiding a sense of isolation in rhythmic fragments and fostering a true sense of phrasing.

Having accomplished this conductors then develop gestures that mirror their evaluative choices, relying primarily upon gestural ability and secondarily upon verbal ability to convey an interpretation. Conductors should ensure that all emphasized musical elements are reflective of a hierarchical analysis, with relative emphasis clearly gesticulated so that the performers see this interpretation emanating from the podium. As the relationship between winds and percussion develops in a musical work, a new consideration of articulation may be warranted and required.

Interpreting Articulation as Three -Dimensional And Using Mental Imagery

With an increased rhythmic vocabulary and a veritable plethora of percussive sonorities possible, it becomes apparent that concepts of articulation need to be reevaluated. Rather than suggest a multitude of articulations and that these should or could somehow be catalogued, it may be best to generalize articulative concepts while fostering variations through contextual experiences, thus expanding the possibilities.

This author has proposed two basic types of articulation exist. These are the clean and soft attack. All other types of articulation are subcategories or variations on these two types. Rather than attempt to verbally define these variations or to represent them in a one-dimensional drawing, they are best represented as three-dimensional images, projected into space with a definite beginning, body, and natural release as they travel in time and relate to each other.

This concept of articulation borrows from Varèse's idea of planes of sound interacting, repelling, and melding with one another. From the development of a three-dimensional articulative concept, a direct correlation can be made to the conductor's

gesture that demonstrates the concept of articulation through the baton, hand, and impulse of will. Using three-dimensional imagery gives a better sense of a passage's energy, density, texture, length, and impact. It also fosters a broadening of the conductor's gestural palette, developing fluency in execution and technique.

Developing mental imagery in the preparation and rehearsal of scores is also beneficial. Successful use of imagery techniques is realized when conductors have cognition of their ensemble's imagery ability. To effectively and meaningfully connect members of an ensemble with the *melos* of a given work, versatility and development of imagery techniques becomes a necessary skill. Through development of aural, oral, visual, tactile and olfactory images, conductors can create an expanded resource of analogies to ensure greater impact in musical settings.

Summary

An increased use of percussion in wind literature during the twentieth century is tractable prominent composers such as Stravinsky, Varèse, Persichetti, Husa, Messiaen, Schwantner, Maslanka and numerous others. As a result, other composers have produced music with an increasingly complex rhythmic vocabulary. The increase in rhythmic language has caused a role reversal between winds and percussion where wind writing has taken on what was previously a percussive role, that of rhythmic punctuation and support. In as much as there has been a role reversal, the increased use of percussion has lead to a role that places these instruments in a position primary to the compositional process. Further, as this role reversal has evolved, so too, has the need for greater attention to how wind and percussion sounds relate, calling conductors to consider the

possibilities that arise from imitation and emulation between wind and percussion instruments as well as their combinatorial sonority.

The wind ensemble has been greatly effected by these trends and has proven an incredible host for the development of percussion. Prominent composers see this ensemble as malleable, allowing for new means for musical expression with limitless possibilities for new sounds, sonorities, and technical demands. At the close of the twentieth century, expansive percussion writing has become a norm in literature of high quality, not merely for the forces employed, but for the endless possibilities of sound.

The growth of percussion in the wind ensemble has far reaching effects. First, percussion education will need to keep pace with the ever-increasing demands of technique and musicianship. As quality repertoire of the professional wind ensemble grows, there will be a demand for quality literature with a similar increase in percussion usage as seen at the secondary school band level.[112] In turn, better preparation of music students by more qualified music teachers will be required, preparation that fosters musical thinkers, not just performers. The greatest impact then, may be felt in the rehearsal hall where performers are encouraged to listen more critically and think more imaginatively, searching for ways of melding their instruments into a greater, refined ensemble sound.

Second, music publishers will feel the effects of these developments. This is

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[112] There is already much discussion taking place among publishers and band leaders about the quality of band literature available. From the band director's view, the publishers are selling primarily low difficulty and low quality music. From the publisher's viewpoint, there are not enough bands buying more challenging works to keep them viable (to make profit). The fact that dialogue is taking place among these two groups at Music Educator's Conventions around the country is hopeful. A solution can only be reached when the quality of music education at the elementary and secondary levels improves to the point where more teachers are willing to present more challenging works to their students.

already evident through the development of the music rental library, which holds a growing repertoire of wind works deemed fit for professional ensembles or as inaccessible for a large number of ensembles. Because the music publishing industry is a business and therefore motivated by profits, it makes sense that the industry would invest their publishing efforts in an area that is financially beneficial their business. Publishers therefore target their largest saleable groups, which are school music programs, and specifically, average school programs. Since fewer organizations will purchase them, more challenging works are less profitable, hence the rise of the music rental industry.

Finally, for conductors, the development of percussion within the wind ensemble presents further opportunities for musical growth. The need for conductors to be historians, theoreticians, performers, critic, and interpreter have always been apparent, but is made greater by developments of the last century. Our desire to analyze and interpret, to seek and create meaningful musical expression, must expand and keep pace with the tonal and textural possibilities that instruments afford us. Leinsdorf suggests that conductors are called to be the composer's advocate, but musicians are primarily called to be the music's advocate, a fact that encourages conductors to find meaning in the music that even a composer may not have comprehended. This truth has never been more evident than with the expansion of the percussion section in the compositional process and the relationship these new possibilities have developed with the wind section of the modern wind ensemble.

Suggestions for Additional Research

Additional research is needed to more accurately define the relationship that exists between wind and percussion articulation. A quantitative study using oscilloscopes might bring more mathematical focus on the ability of wind and percussion instruments to emulate one another, providing concrete data on the achievement and/or accuracy of imitative and emulative gestures. This kind of study may be divided into pitched and non-pitched percussion categories in combination with winds and may serve to heighten awareness of how to artfully blend these sonorities.

Additionally, study of mental imagery in the music ensemble rehearsal may add significant knowledge to the areas of ensemble and individual pedagogy. This would relate to studies already done concerning the use of verbal and non-verbal communication skills by conductors. Such study would also involve exploring the level of aesthetic experience performers achieve in the presence and, through a control group, the absence of mental imagery techniques. Digital technology could be used to graphically depict performances before and after mental imagery has been incorporated in an effort to physically identify changes in performance.

Finally, further research involving the relationship between a percussionist's physical gestures and a conductor's may prove useful to the conducting profession, particularly in the area of conducting pedagogy. A cataloguing of percussion performance gestures and their application to conducting might yield increases in the conductor's technical vocabulary, developing more effective visual communication. This study may involve videography of percussive gestures and the application or transference to conducting gestures, providing a valuable resource for conductors.

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