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The purpose of this study was to find rationales for polymetric notation by studying selections of twentieth-century music. By discussing the nature of various passages, notational methods were linked to each different polymetric scenario. A distinction was made between instances of polymer that were implied within the framework of one metric structure and those that were explicit, having separate metric structures indicated in the notation.

After presenting polymetric examples in their original notation, various alternative notations were speculated upon. Implied polymer was found to have limitations when applied to situations that were originally notated explicitly. It was certainly possible, however, to re-notate explicit polymer examples as such. The composer's rhythmic intent is usually lost when these ideas are confined to one metric structure.

Additionally, I presented various alternate notations for a passage of implied polymer in my string quartet, *Dead Leaves Swirl at My Doorstep*. The exercise revealed some of the limitations of implied polymetric schemes as well as important considerations for notating polymetric passages in a single metric structure.

POLYMER IN TWENTIETH-CENTURY MUSIC:  
A STUDY IN NOTATIONAL METHODS

by

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## CHAPTER I

### INTRODUCTION

Polymeter in twentieth-century music has become more complex with each generation of composers. As polymeter has gained complexity, notational methods have evolved. These methods have now, in fact, become almost as numerous as the composers who experiment with polymeric ideas. Despite the myriad of methods for conveying these ideas, the best one for each individual polymeric situation remains elusive. Many of these passages could potentially be notated one of several ways. By studying examples of polymeric notation, I intend to determine if there is a method that is best suited to a given polyrhythmic idea, according to the nature of that idea and the intent of the composer.

As I was composing my string quartet, *Dead Leaves Swirl at my Doorstep*, I found that there were several ways of notating my polymeric ideas and that each seemed equally viable. The choices of other composers in similar situations were illuminating but their choices were not always dependent solely upon the nature of the polymeric passage. Sometimes the composer's intent is the deciding factor in how the passage is notated. Regardless, in some polymeric situations there are several notational methods to choose from.

Gardner Read presents several examples of polymeter in his book, *Modern Rhythmic Notation*. Read's chapter on polymeric notation makes a fundamental distinction between ways of achieving polymeter: implicit polymeter and explicit polymeter. Implicit polymeter is polymeter that is indicated by irregular accents and phrasing within a given metric framework.<sup>1</sup> Explicit polymeter, on the other hand, is essentially the employment of multiple simultaneous time signatures to outline the different metric structures present.<sup>2</sup> This is an important distinction to make because each method for achieving polymeter has different inherent notational considerations. Read also mentions that implicit polymeter is often seen on a smaller scale than explicit polymeter, almost to the extent that it could be argued that implicit polymeter is more specifically polyrhythm.<sup>3</sup> Such a distinction does not, however, negate the fact that any polymeric idea, however temporally restricted, can theoretically be notated both implicitly, with accents, slurs and beaming, and explicitly, with multiple simultaneous time signatures.

Implied polymeter can be seen often in Olivier Messiaen's music as well as Stravinsky's, Bartok's and Britten's. Messiaen, in fact, discusses the notation of polymeter briefly in a chapter of his book, *The Technique of my Musical Language*.<sup>4</sup> His discussion reveals indirectly both the need for explicit polymeter in more complex pieces

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1 Gardner Read, *Modern Rhythmic Notation* (Bloomington and London: Indiana University Press, 1978), 123.

2 Read, 123.

3 Read, 138.

4 See chapters VI and VII in Olivier Messiaen, *The Technique of my Musical Language* (Paris: Alphonse Leduc, 1944), 22-30. Messiaen also refers to these instances of polymeter in his music as polyrhythm. Essentially, Messiaen's polyrhythms are instances of implied polymeter by Read's definition.

and the need for a set of guidelines for implying meter in less complex pieces. According to Messiaen, when notating polymeter, it is necessary to “gather our rhythms into one meter.”<sup>5</sup> Often this requires writing the rhythms in a normal meter that has no relation to them even if it is “in contradiction to the rhythmic conception of the composer.”<sup>6</sup> He suggests strongly the importance of “multiplying the indications of slurs, dynamics, and accents.”<sup>7</sup> If performers observe every articulation, then the listener will hear the intended polyrhythm. However, Igor Stravinsky opposes this idea. The following is a rather illuminating excerpt from an interview with Stravinsky and Robert Craft.

R.C. Meter. Can the same effect be achieved by means of accents as by varying the meters? What are barlines?

I.S. To the first question my answer is, up to a point, yes, but that point is the degree of real regularity in the music. The bar line is much, much more than a mere accent, and I don't believe that it can be simulated by an accent, at least not in my music.<sup>8</sup>

According to Stravinsky, Messiaen's idea of implied polymeter is limited in that it masks the original rhythmic intent of the composer. In Stravinsky's work, one will see polyrhythm notated with constantly changing meters that conform to the metric accents of one part but are contradictory to those of another. Stravinsky made attempts in his music to avoid notating implied polymeter in a neutral meter, often opting instead to

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5 Messiaen, 22.

6 Ibid.

7 Ibid.

8 Igor Stravinsky and Robert Craft, *Conversations with Igor Stravinsky* (New York: Doubleday, 1959), 21



write complex metric structures with changing meter, in order to preserve his rhythmic intent.<sup>9</sup> Read, himself, warns against “notational simplification” not serving a composer’s true intent.<sup>10</sup> Notational clarity, however, does not always have to come at the expense of ruining the composer’s rhythmic ideas by placing bar lines in the wrong places.

Even if Messiaen was only just short of finding a need for explicit polymeter, his point about needing to gather rhythms into one meter was not without merit. Depending on the nature of a passage, it may be more appropriate to bar the passage in a single meter. However, when one crosses the threshold into more complex combinations of meters and tempi, implying a polymetric idea within the confines of a singular meter becomes nearly impossible.

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<sup>9</sup> See Igor Stravinsky, *Les Noces*, (Mineola, NY: Dover, 1998) first tableaux rehearsals 12-14 for an example of this kind of polymeter. The accompaniment is an ostinato in 2/4 while the vocal parts change from 3/8 to 2/8 to 4/8.

<sup>10</sup> Read, 139.

## **CHAPTER II**

### **TYPES OF POLYMER**

For the purpose of discussion, I will present several examples of different kinds of polymer and various ways that they could have been otherwise notated. Therefore, it becomes necessary to categorize them. Implied polymetric scenarios can be broken into two distinct categories which require different notational considerations: polymer with two or more simultaneous meters and polymer with two or more simultaneous metric structures (changing meter). Simultaneous meters, for our purposes will refer to the juxtaposition of rhythms that could fit into two separate time signatures. Simultaneous metric structures will refer to polymer where one or more of the rhythms involved are in a series of constantly changing time signatures. Explicit polymer can be divided into multiple scenarios with different notational considerations. Beyond simultaneous meters and simultaneous metric structures, they can also encompass simultaneous tempi. Because the inherent considerations of such scenarios are often multi-faceted, I will discuss them all under the blanket term, explicit polymer.

## Implied Polymeter with Simultaneous Meters

Olivier Messiaen was one of the earliest pioneers of polyrhythmic ideas. Much of Olivier Messiaen's music, thus, is beset with polymeter. In *La nativite du Siegneur*, there is a passage of implied polymeter in the fourth movement, *Le Verbe*. Throughout the piece, there are measures of differing length but Messiaen does not indicate changes in time signature. At the beginning of the polymetric idea in measure 31, the bar lines indicate a meter of 10/16 or 5/8 to which the right-hand pattern adheres. The left-hand part consists of a rhythmic pattern that repeats every nine sixteenth notes, effectively outlining a 9/16 meter within the 10/16 meter (see Figure 1).

The image shows a musical score for Olivier Messiaen's *Le Verbe* from *La Nativité du Seigneur*, measures 31-34. The score is in G major and 10/16 time. It features a right-hand part with a 'legato' texture and a left-hand part with a 'staccato' texture. The left-hand part consists of a repeating rhythmic pattern of nine sixteenth notes, creating an implied 9/16 meter within the 10/16 meter. The right-hand part consists of a melodic line with a dotted quarter note, an eighth note, and a quarter note, repeated twice. The score is marked 'Plus Vif' and 'pp'.

Figure 1. Olivier Messiaen, *Le Verbe* from *La Nativité du Seigneur*. Measures 31-34. The left hand pattern is repeated every nine sixteenth notes while the notated meter is 10/16.

Messiaen chose not to imply the extra-metrical idea in the left hand, merely beaming the passage consistently from measure to measure. Alternatively, he could have beamed each new iteration of the left-hand rhythmic idea the same way, even placing an accent on the implied downbeats (see Figure 2).

The image shows a musical score for a piece titled "Plus Vif". The score is written for piano and consists of two systems. The first system is marked "legato" and "pp staccato". The right hand has a melody with notes beamed across measures, while the left hand has a complex, multi-measure rhythmic pattern. The second system shows the same material with different beaming and accents in the left hand to imply a different meter.

Figure 2. An alternate method of implying polymeter in Messiaen's *Le Verbe*.

Such an example of implied polymeter does not serve the composer's intent, however. Messiaen was merely attempting to achieve a complex rhythmic texture by means of superimposing rhythms of different lengths. The alternate notation goes so far as to show two different time signatures with all of their respective metrical accents.

Other examples of implied polymeter with simultaneous meters can be seen in Igor Stravinsky's *Le Sacre du Printemps*, Aaron Copland's *Dance Symphony* and Béla Bartók's *Music for Stringed Instruments, Percussion and Celesta*.<sup>11</sup>

<sup>11</sup> See Read, 125, 131, 136 respectively for discussion of implied polymeter in these three pieces.

## Implied Polymeter with Simultaneous Metric Structures

Several examples of implied polymeter with constantly changing meters can be contained within a neutral meter. Others have irregular structures that do not lend themselves to such an organizational method.

An example of effective barring in a neutral meter is found in Britten's opera *Peter Grimes*, (Interlude IV and Act II, Scene 2). There is an ostinato pattern in the bass and timpani that spans eleven quarter notes (or two measures of 4/4 and one of 3/4.)

**44** **PASSACAGLIA**  
**Andante Moderato** (♩ = 56 at the start)  
(sempre un poco rubato)

The musical score is presented in two systems. The first system (measures 1-5) features a piano part with a bass line and a timpani part. The bass line contains an ostinato pattern of quarter notes: G<sub>2</sub>, A<sub>2</sub>, B<sub>2</sub>, C<sub>3</sub>, D<sub>3</sub>, E<sub>3</sub>, F<sub>3</sub>, G<sub>3</sub>, A<sub>3</sub>, B<sub>3</sub>, C<sub>4</sub>. The timpani part has a similar pattern. The piano part is marked *pp* and *pp deliberato*. The second system (measures 6-10) shows the piano part continuing with dynamics *pp espress.*, *espress.*, *pp*, and *più f e sonore*. The bass line continues with dynamics *p dim.*, *pp*, and *p*. The timpani part continues with dynamics *pp* and *p*.

Figure 3. Britten's *Peter Grimes*, (Interlude IV). The ostinato pattern in the timpani and bass.

The other parts play melodies of differing lengths, often starting in the middle of a given iteration of the ostinato pattern (see Figure 4).

The image displays a musical score for rehearsal number 45, consisting of two systems of piano and woodwind parts. The first system, starting at measure 18, features a piano part with a *pp marcato* dynamic and a woodwind part with a *pp* dynamic. The second system, starting at measure 21, features a piano part with a *poco a poco cresc.* dynamic and a woodwind part with a *più f* dynamic. The woodwind part in the second system shows a complex rhythmic pattern with many notes, while the piano part in both systems has a more sparse, rhythmic accompaniment.

Figure 4. Britten's *Peter Grimes*, (Interlude IV and Act II, Scene 2), rehearsal number 45.

The rhythm in the woodwinds at rehearsal number 45 can be gathered into a series of shorter measures if one takes into account the articulations and accents (see Figure 5).



Figure 5. Britten, *Peter Grimes*, (Interlude IV), rehearsal number 45 re-barrated.

The piece is barred in 4/4 because any other metrical choice would require constantly changing meter in all parts. Barring in the neutral meter of 4/4 is practical. Composers will often notate passages such as this one in a “neutral meter that is minimally disruptive to the performers”<sup>12</sup> and facilitates the conductor’s job. Another example of an implied polymeter with changing meter is in Benjamin Britten’s *Serenade for Tenor, Horn and Strings, IV. Dirge*. The entire piece is notated in 4/4, but closer analysis reveals that there is an implied polymeter.<sup>13</sup>

An example from Paul Hindemith’s music presents a polymetric idea with simultaneous metric structures that favors changing meter instead of a neutral meter. The passage in question occurs in measures 7-10 of Hindemith’s String Quartet no. 3 (see

12 J. Kent Williams, *Theories and Analysis of Twentieth-Century Music*, (Fort Worth: Harcourt Brace College Publishers, 1997), 112.

13 See Williams, 111-115. William's discussion of polymeter includes an analysis of “Dirge” from Britten's *Serenade*.

Figure 6). The metric structure in the first violin is different from that of the second violin, viola and cello. The first violin changes from 6/8 to 5/8 to 3/4 and then 5/8 before becoming realigned with the metric structure of the other instruments. The metric structure of the other instruments is quite different. Their metric structure moves from 5/8 to 3/4 to 5/8 and then to 6/8. Hindemith indicates the difference in the metric structure by beaming the first violin part across the bar lines in places. A neutral meter would not work for Hindemith's purposes here because the meters are too irregular. Instead of encasing his rhythms in a neutral meter, he retains the complex changing meter structure of the second violin, viola and cello parts. Notating the passage like this does not disrupt the original rhythmic intent and the parts still remain clear to the performers. Alternatively, Hindemith might have barred the passage according to the violin I part (see Figure 7). Doing so, however, would disrupt the metric structure of the other three parts.



4

*ff*

7

*mf cresc.*

*mf cresc.*

*mf cresc.*

*mf cresc.*

9

*ff*

*ff*

*ff*

*ff*

Sw

Figure 6. Hindemith String Quartet no. 3, II. Measures 4-11.

4

*ff*

7

*mf cresc.*

9

*ff*

*ff*

*ff*

*ff*

Svo

V

*ff*

Figure 7. Hindemith String Quartet no. 3, II. Measures 4-11, re-barréd according to the first violin.

Implied polymeter can encompass various situations, all of which are confined to one common meter signature or metric structure. Therefore, the notational considerations revolve around how best to place the rhythms into the metric structure of the piece. As polymetric ideas have become more intricate, however, composers have had to devise ways to break out of the bar lines, indicating explicitly the presence of polymetric structures.

### **Explicit Polymeter**

As previously mentioned, the more complex a polymetric idea becomes, the less likely that it can be notated as an implied polymeter. Examples of actual polymeter can be found in the music of composers as early as Mozart, who, in *Don Giovanni*, placed three orchestras on stage playing three different dances in opposing meters.<sup>14</sup> The wide array of twentieth-century examples each bring their own notational methods to the table. Without the tyranny of bar lines and the constant need for meter signature to agree, actual polymeter can stretch the boundaries of notation. Implied polymeter must, by its nature, have rules to fit rhythms into meters that they would not normally fit into. Explicit polymeter gives composers the freedom to create more complex ideas. Fitting those complex ideas into normal meters, however, is difficult or inappropriate, because to do so would be contrary to the composer's intent.

The following examples illustrate polymetric ideas that are limited in their

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<sup>14</sup> See Read, 139-140 for a discussion of the passage in question and how alternative methods of notation would have missed the dramatic point of the sequence.

notational possibilities because of their complexity. Charles Ives' *Symphony no. 4, mvmt. I*, contains a perfect example of several simultaneous time signatures and simultaneous different tempi. The two written meters have like denominators, but Carter implies different tempi by the use of consistent quintuplets and quadruplets divisions of the measure (see Figure 8).

Figure 8. Charles Ives, *Symphony no. 4, I*, page 3. Rhythmic reduction of four simultaneous rhythmic ideas. It is comprised of essentially, 3/4 against 6/4, with embedded 4/4 and 5/2 meters with non-isochronous notes.

There are effectively four meters happening simultaneously. Attempting to simplify and reduce this passage into a manageable neutral meter is problematic, not only because of the existence of the 5/2 meter, but because its note values are not equal to that of the written 6/4 or 3/4 meter. Barring the passage in 3/4 would produce tied notes while notating the 5/2 passage as a separate tempo and time signature would add further clutter. Ives' apparent intent was to make clear the existence of two simultaneous tempi without having to indicate two different tempo markings.

Elliot Carter's String Quartet no. 1 is an example of both implied and explicit polymeters. The piece is barred in a 3/4 meter, but in this particular section, the first violin's measures are consistently divided into quintuplet rhythms, effectively implying a 5/4 meter in another tempo. Also, the cello part has an implied polymetric structure. Every seventh quarter note has a dynamic accent indicating a 7/4 meter structure embedded in the 3/4 meter. The second violin, however, is notated in a different time signature, 6/4 (or 12/8). Not only is there a different time signature but also there is a different tempo indicated. Carter has even given the second violin an alternate notation where the bar lines coincide with those of the other instruments.

The image shows a musical score for five staves. The top staff is for the first violin (vln. I) and contains quintuplet markings (5) over groups of notes. The second staff is labeled 'vln. II alternate notation:' and is in a 6/4 time signature. The third staff is for the second violin (vln. II) and is in a 3/4 time signature, with a tempo marking '(♩ = 135)'. The fourth staff is for the viola (vln. III) and the fifth staff is for the cello (vln. IV). The score includes various dynamic markings such as *mf*, *p*, *espr.*, *p*, *mf*, and *mp*. There are also accents and slurs throughout the piece.

Figure 9. Elliot Carter, *String Quartet no. 1*, page 29.

Certainly Carter could have notated this passage in a number of ways. If he was willing to use brackets in the first violin to create an irrational division, perhaps he could have notated the 9/8 meter in the alternate second violin notation as a 3/4 meter with triplet divisions. Essentially, he could have implied the polymeter instead of making it explicit. As evidenced by his alternate second violin notation, he already intended to specify a separate meter there, potentially to avoid the irrational division of the 3/4 meter. The violin II part from the previous example is notated below in Carter's original notation, his alternate notation and in my own alternate notation (See Figure 10). In my notation, there is no need for a separate tempo marking.<sup>15</sup> All of the bar lines in all of the parts will coincide.

My alternate notation

vln. II alternate notation (Carter)

vln. II original notation

Figure 10. Elliott Carter, *String Quartet no. 1*, page 31. Rhythmic reduction and alternate notation.

Carter avoided notating the first violin in 3/4, possibly because he wanted to avoid irrational divisions of the measure altogether in that particular part. If this was the case,

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<sup>15</sup> Ives implied simultaneous tempi in the notation of his piece *The Unanswered Question*. See Williams, 112-118 for a discussion of his methods.

he could have written the first violin in 5/4 meter and indicated a new tempo marking as well. Perhaps, Carter was after two separate intents in notating both explicit and implicit polymeter in the same piece. This raises the question, then, whether my alternate notation is true to the composer's original intent. Do eighth notes in 9/8 sound exactly like triplet eighth notes in 3/4? Would a performer interpret them the same way? This, itself, would make a fascinating study.

While various situations call for explicit polymeter, it is certainly true that others that have been written explicitly could just as easily be implied. Even implied polymeter could certainly be written explicitly. The difference between the auditory results of each is disputed. Speaking of the music of Ives, Elliott Carter attests that, though they may be written precisely, Ives' polyrhythms often call for a certain amount of freedom with expression.<sup>16</sup> Explicit polymeter in Ives and Carter, is explicit, not because they have a very strict rhythmic idea in mind, but because they expressly desire a freedom from strict meter.<sup>17</sup> Implied polymeters, on the other hand, by their nature are usually found in pieces with a more rigid meter.

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16 ed. Jonathan W. Bernard, *Elliott Carter: Collected Essays and Lectures*, (Rochester, NY: University of Rochester Press, 1997), 91.

17 See pp.138-173 in Read for further examples and discussion of explicit polymeter.

### CHAPTER III

#### ***DEAD LEAVES SWIRL AT MY DOORSTEP: AN EXERCISE IN IMPLIED POLYMER***

In *Dead Leaves Swirl at My Doorstep*, I faced notating a passage with three opposing metric structures, some of them with constantly changing meter (see Figure 11). The violins in this section play an ostinato pattern, which alternates between groupings of three and two. The viola and cello parts are first notated in 9/8, but then after a brief rest in a 5/8 measure, begin playing in 6/8. The cello and viola parts are initially heard as a syncopation against the violins, but their pattern continues separate from the violins. In measure 55, the cello becomes metrically displaced from the viola part by one eighth note. In measure 67, all three meters are realigned metrically but in a 3/4 meter.

Writing the passage as an implied polymer, keeping one metric structure in the foreground, seemed like the best choice. All of the parts share a common pulse, there were no irrational divisions of the measures and all of the notes were isochronous. However, the metric structure that should dominate was not immediately apparent.



47

Vln. I  
Vln. II  
Vla.  
Vc.

*p* *mf* *f* *mf*

*p* *mf*

*p* *mf*

Detailed description: This system contains measures 47 through 51. It features four staves: Violin I, Violin II, Viola, and Violoncello. The key signature is three flats (B-flat, E-flat, A-flat) and the time signature is 9/8. Measures 47-51 show a dynamic progression from piano (*p*) to mezzo-forte (*mf*) to forte (*f*) and back to mezzo-forte (*mf*). The strings play a rhythmic pattern of eighth and sixteenth notes with accents.

52

Vln. I  
Vln. II  
Vla.  
Vc.

*f* *p*

*f* *p*

*f* *p*

Detailed description: This system contains measures 52 through 56. It features four staves: Violin I, Violin II, Viola, and Violoncello. The key signature is three flats and the time signature is 9/8. Measures 52-56 show a dynamic progression from forte (*f*) to piano (*p*). The strings continue with a rhythmic pattern of eighth and sixteenth notes with accents.

57

Vln. I  
Vln. II  
Vla.  
Vc.

*mf*

*mf*

Detailed description: This system contains measures 57 through 61. It features four staves: Violin I, Violin II, Viola, and Violoncello. The key signature is three flats and the time signature is 9/8. Measures 57-61 show a dynamic progression from mezzo-forte (*mf*) to piano (*p*). The strings continue with a rhythmic pattern of eighth and sixteenth notes with accents.

10

61

Vln. I

Vln. II

Vla.

Vc.

pp

mf

pp

mf

p

65

Vln. I

Vln. II

Vla.

Vc.

69

Vln. I

Vln. II

Vla.

Vc.

mf

mf

mf

f

mf

mf

f

mf

f

mf

Figure 11. *Dead Leaves Swirl at My Doorstep*. Measures 47-72 in the final notation.

Barring the passage in 6/8 throughout resulted in awkward tied notes in the cello and viola and a general lack of clarity about metric accents in all parts. Constant meter changes from 3/8 to 3/4 would accommodate the pattern in the violins. However, this results in unnecessarily confusing parts for the violist and cellist (see Figure 12). In this version of the notation, where there were dotted half-note values in the cello and viola, the bar lines resulted in awkward tied notes. It was legible and playable, but when I considered the alternative, it occurred to me that the meter changes for the violin parts were not necessary. The violin parts have dynamic accents and pitch accents that effectively outline a metric structure nested within the viola and cello parts. As such, the violinists do not necessarily need bar lines to indicate their metric structure.

With the metric structure favoring the cello and viola part, there was little to no disruption of the rhythmic ideas in the violins. I was able to effectively indicate the meter in the violins with accents and by beaming across bar lines.

47 *p* *mf*

52 *f* *mf* *f*

57 *p* *mf*

63

Figure 12. *Dead Leaves Swirl at My Doorstep*. Alternate bar lines version, reduction.

With the dominant metric structure decided upon, I had my final notation. However, the viola part still had awkward tied notes. Had I wanted to clean up this notation even further, the other option would be to add dashed bar lines as seen in Elliott Carter's first string quartet. Indeed, I could have added the dashed bar lines only to the performers individual part and not to the full score. However, the performers would not always have matching measure numbers in their parts.

To conclude, the appropriate metric decision with any passage of implied polymeter will ultimately provide the most legible notation. The use of dashed bar lines, beaming and dynamic accents can all clarify the existence of implied polymeter. However, they are not always necessary. Pattern repetition, pitch accent and durational accents can all serve to imply polymeter. Any other indicators are up to the composer's discretion.

However, the placement of bar lines is mostly dependent upon the nature of the passage. Barring polymetric ideas in a neutral meter is not always practical nor is it always necessary in every case, especially if a neutral meter will produce awkward or even visually straining notation. Thus, a set of notational considerations for implied polymeter might be appropriate.

When implying polymeter, there are obviously different considerations for simultaneous meters and simultaneous changing meters. For simultaneous meters, it is necessary to decide in what meter the passage will be notated, normally the neutral meter. For simultaneous changing meters, it is necessary to decide the dominant metric

structure.

When barring according to a dominant metric structure, the following factors must be considered. The most regular metric structure is the one that should dominate. If all of the metric structures are equally irregular, the structure that is played by the most instruments should take precedence. In the interest of avoiding unnecessary tied notes and brackets, one should bar according to the part with the longer measure length, or the part that features longer note values.

## CHAPTER IV

### CONCLUSION

Polymetric notation can be separated into explicit and implicit methods. Several pieces even exhibit both implied and explicit polymeter. Implied polymeter can be seen as a simplification of the notation of complex ideas. Explicitly notated polymeter, on the other hand, allows the composer to write the most complex polyrhythms without being confined to the tyranny of the bar line. Most examples of polymeter can be notated either explicitly or implicitly.

Notating implicitly a polymetric idea that was originally explicitly notated proved that a composer's intent cannot always be served within the limitations of implied notation. Implied notation does work, however, in certain situations like the Britten examples and in my own work. Trying to notate implied polymeter explicitly proved unnecessary in these cases, though it was certainly possible. Explicit notation only seems appropriate when there is some special rhythmic or dramatic intent that the composer cannot achieve by confining all of his or her polyrhythms to a single meter.

It would be interesting to study, as in the case with the Carter string quartet, what happens when one notates simultaneous tempi in an implied notational scheme. One could examine how performers respond differently to triplet eighth notes in 3/4 and eighth notes in 9/8. This could potentially further illuminate whether or not implied

polymetric notation is inadequate in certain polymetric situations.



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