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Blurred Lines: An Analysis of Karel Husa's *Music for Prague, 1968* Using Fuzzy Serialism

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FUZZY SERIALISM

by

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BLURRED LINES: AN ANALYSIS OF KAREL HUSA'S *MUSIC FOR PRAGUE, 1968*
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The wind band work *Music for Prague, 1968* by Karel Husa is a well-respected work that has withstood the test of time. Husa, a native of then-Czechoslovakia, composed the piece in less than a year from the United States. The piece serves as a method of expressing his feelings regarding the invasion of his homeland where his family was still residing. Husa accomplished this expression through the use of a nationalistic theme, the Hussite War Song, and his own integration of twelve-tone serialism.

This study looks at pre-existing literature surrounding Husa's use of serialism, including an analysis by Husa himself. It aims to provide a thorough analysis of the work, primarily areas that have been previously mentioned to contain no tone-rows. This study presents an understanding of serialism using the method of fuzzy serialism. This analytical tool will provide a method of analyzing works that are believed to possess some degree of serial techniques that cannot be clearly understood through strict serial analysis. Fuzzy serialism will be applied to the second and fourth movements of the work, highlighting thematic materials and the loose application of serialism within them. Through my analysis of *Music for Prague, 1968* I aim to guide wind band conductors toward Husa's use of serial techniques and thematic materials for a more effective interpretation and performance of the piece. I also propose the use of fuzzy serialism to be applied to other quasi-serial works of many genres outside of the analyses provided within this study.

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CHAPTER 1: INTRODUCTION

The Prague Spring was a dark time in history for many Czechs. At the height of the Cold War and with motivation to maintain their own independence from Russia, the Czechs fought an only briefly successful battle against Russian invaders who were determined to seize control of Prague. This invasion, from an American perspective, did not make a large impression against the backdrop of the space race and larger Cold War. This was a tragic event for Czech American Karel Husa. Husa, a composer who had studied throughout Europe and made his way to the United States in 1954, was just getting ready to work on a commission for Ithaca College as a dedication to his hometown.[1] *Music for Prague, 1968* was premiered in Washington, D.C. by the Ithaca College Concert Band in 1969. It has since been performed by many professional and collegiate wind ensembles and was arranged for orchestra by Husa.[2]

Music for Prague, 1968 (*MfP*), consists of four movements entitled "Introduction and Fanfare," "Aria," "Interlude," and "Toccata and Chorale." The score contains a Foreword by Husa that discusses its thematic material; the composer instructs for it to be published in concert programs or read to the audience at each performance of the work. In the Foreword, Husa describes the types of symbolism present in the piece (Prague church bells and bird calls), as well as its three primary motivic ideas: the three chords labeled as the "Chorale Chords," the sounding of bells, and the war song "Ye Warriors of God and His Law."[3] The war song is the most important and prominent thematic material throughout the work. Specifically, he uses the

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[1] Byron Adams, "*Karel Husa's Music for Prague, 1968*: An Interpretive Analysis," *The Instrumentalist* 42 (1987), 20.
[2] Karel Husa, *Music for Prague, 1968*, Musical Score, 1969.
[3] Husa.

opening melodic material of the war song to create twelve-tone rows woven throughout the entire work to varying degrees.

The use of tone rows and the war song theme used in *MfP* have been the focus of a small cluster of scholarship by Byron Adams, Robert Casey, and Christopher Michael Neal.[4] The current literature surrounding this piece shows only direct uses of the primary rows and a few other row forms that have been located. As chapter 2 will show, these analyses all tend to contain gaps in the same general areas, showing strong use of the row forms within the first movement, a bit less use within the second, an entirely serialized third, and a complete lack of row forms within the fourth movement. Although these studies all lack findings of serialism in the same areas, a more cohesive understanding of the work could be produced by analyzing areas where the use of serial composition is not explicitly clear.

This study will explore the role of serialism throughout the fourth movement as well as areas of the second movement where others found no promising results through a compositional technique I call "fuzzy serialism." Combining the tried-and-true method of locating and labeling 12-tone aggregates with a technique proposed by Joseph Straus[5] for analyzing set classes that are closely but not directly related, this method of fuzzy serial analysis takes into consideration how closely-related aggregates presented in a given musical context are to row forms found within a given matrix. This method illuminates for the first time how the 12-tone rows of *MfP* inform the landscapes of the second and final movements. The multitude of "fuzzy rows" in these movements conveys a more profound understanding of how serial techniques operate in *MfP* and

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[4] Adams, "Karel Husa's Music for Prague, 1968: An Interpretive Analysis"; Robert Casey, "Serial Composition in Works for the Wind Band" (St. Louis, Missouri, Washington University at St. Louis, 1971); Christopher Michael Neal, "Karel Husa's Music for Prague, 1968: An Exploration of Compositional Process and Historical Background" (Norman, Oklahoma, University of Oklahoma, 2002).
[5] Joseph Straus, *Introduction to Post-Tonal Theory*, 4th ed. (W. W. Norton & Company, Inc., 2016), 177.

how the thematic materials within the fourth movement are related to each other. Understanding fuzzy serialism can help unlock the language of this piece for performers and conductors and a broad range of other works that hinge on loose serial techniques.

Purpose and Organization of the Study

This study expands upon the current available literature related to *MfP*. Its goal is to add analyze of those sections that have been neglected by previous studies such as some sections of the "Aria" and the "Toccata and Chorale." Those studies that have gone into detail about these sections have only done so in terms of their relation to the historical contexts that informed Husa's composition. Some studies briefly mentioned thematic and motivic materials but lacked information about how those themes and motives may be related through serial techniques. Areas in the piece where serial composition was utilized and provides further analytical contexts for consideration for future performances and studies of *MfP*.

This study will first look at the existing literature, that provides some limited twelve-tone analysis of *MfP*. Husa's own analysis of the work will serve as the touchstone, and other writings will be explored in chronological order. The studies reviewed include works by Byron Adams and Robert Casey, that both look at the work through the perspective of wind band conductors. Another analysis by Christopher Michael Neal focuses on compositional and historical perspectives of the piece. Next, the study will dive into the music, taking a chapter to explain the compositional technique I am calling fuzzy serialism and how it can be used to understand the compositional technique of the fourth movement. Fuzzy serialism will then be used to account for the composition of the second movement previous authors have determined it was not serial in its composition. The study concludes with an application of fuzzy serialism to a work by

Copland and suggestions for the use of the analytical method outside of the two pieces discussed in this paper.

CHAPTER II: PRE-EXISTING LITERATURE

Most of the literature surrounding *Music for Prague, 1968* focuses on the historical context of the piece and Husa's thematic and motivic ideas as a means of projecting wartime emotions through a piece of wind band repertoire. Few writings address the serialism of the composition, and only two works discuss the specific applications of tone rows within the piece.

Husa's Analysis of MfP

In 1971, Husa's own small written analysis of *MfP* was published. Though brief, his analysis identifies thematic materials and tone rows utilized throughout the work and serves as a foundation for other analyses of sections of the piece. The primary thematic material provided by Husa is his preferred notation of the Hussite song "Ktož jsú boží bojovníci" or "Ye Warriors of God and His Law," the opening phrase of that is shown below in Figure 1.1.[6]

Figure 1.1: "Ye Warriors of God"

Husa summarizes his own harmonic conception of the work: "Although *Music for Prague, 1968* is not written in any tonality, the song's use at the beginning and end of the work gives it a strong 'center note' that is D, even if the last unison at the end is on E."[7] Husa transposes the war song to begin on D and reinforces this pitch center by the constant use of Eb and C# in the war song melody when presented in the timpani. Husa also utilizes the altered E

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[6] Karel Husa, "Music for Prague 1968," *The College and University Band: An Anthology of Papers from the Conferences of the College Band Directors National Association, 1941-1975*, 1977, 259–66.
[7] Husa, 260.

and C as within the primary row for the work by placing them next to D as a trichord, reinforcing the relationship of the war song melody to the rows used within the work.

He also draws attention to what he describes as a "chorale-like motif of three notes, always harmonized" that appear throughout each movement of the work (with the exception of the third movement) as another motivic idea.[8] Their presentation in mm. 3-4 in the flutes, clarinets, and horns are the first harmonic idea heard in the piece. It serves as a recurring harmonic idea throughout, further contributing to a sense of cohesion between movements. Shown in Figure 1.2, the chorale chords serve as their own motivic idea. However, Husa does sometimes pair this harmonic progression with the war song melody. He references mm. 62-70 in the first movement as an example, with the chorale chords presented as an accompanimental figure beginning in the basoons, alto and bass clarinets, horns, trombones and expands to other instruments as the line progresses with a rapid sixteenth note figure of D, Eb, Db, and C presented as an ostinato in the other voices as a reference to the war song melody.

Figure 2.2: Reduction of the Chorale Chords from "Introduction and Fanfare" mm. 3-4

The basis for each of the tone rows is clarified as the third key component of the work, a piece of information that has been investigated by Adams, Casey, and Neal, and will be focused on in this study as well. The original sketch of the prime row used in the first movement is shown below in Figure 1.3.
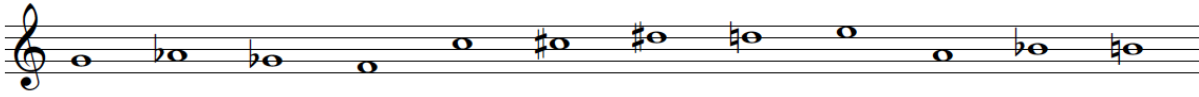
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[8] Husa, 261.

Figure 1.3: P₇ as created by Husa

It is important to recognize that Husa did not consider *MfP* to be an exemplar of strict serialism noting: "They [twelve-tone rows] are treated very freely, repeating many notes, sometimes using the twelve notes not in order, not avoiding occasional octaves, and so on."[9] This view of serialism is crucial to completing any analysis of *MfP*, as a row may be entirely present in a certain form but spread throughout various instruments and the order mixed. However, Husa also touches on the importance of the use of specific transposed versions and retrograde inversions of his rows, that aid in discerning the rows present throughout the work.[10] Finally, he identifies a major third/minor second intervallic pattern as a fourth touchstone of his composition—it is only present in the "Aria" (Movement II).[11] This element is only explored in his own analysis, and none of the others reviewed here address it.

Karel Husa's Music for Prague, 1968: An Interpretive Analysis by Byron Adams

Other than Husa's own brief analysis of his work, the article published by Byron Adams in *The Instrumentalist* is one of the most broadly distributed pieces of literature regarding *MfP*. Adams organizes the article in three sections: an introduction to the context of the piece's

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[9] Husa, 262.
[10] Husa, 263.
[11] Husa, 264.

conception and motivic ideas, an incredibly succinct motivic and formal analysis through each movement, and the challenges put forth by the work for the conductor who wishes to perform it. This article may have served as a springboard for the theses written by both Neal and Casey, who took sections of this article corresponding to their fields of study and further investigated the work. Adams offers a unique perspective as a composition student under Husa. He notes that the work "is the first of Husa's scores to combine an existing traditional melody with the personal and experimental serial procedures" and that Husa "does not allow serial procedures to become merely systematic." [12] This is an important distinction, as most authors have attempted to show only the systematic use of serialism within *MfP*. However, if Husa mentioned that the use of serial techniques was not strict than why should an analysis stop at only looking at the instances where serialism is clear?

Adams puts forth a concise formal analysis of each movement, outlining the presence of important melodic and rhythmic motivic elements. His formal analysis of the final movement of the piece is one of the only pieces of existing literature to analyze the movement. This formal analysis serves as a starting point for locating any fragments of serialism within a movement that has been untouched by the authors who have analyzed this work. Adams also includes an Errata at the end of his publication.

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[12] Adams, "Karel Husa's Music for Prague, 1968: An Interpretive Analysis," 20.

"Music for Prague, 1968" in Serial Composition in Works for the Wind Band by Robert Casey

Robert Casey was one of the first to attempt a serial analysis of Husa's work utilizing composer's provided rows and prominent row forms.[13] As part of a series of analyses of serial works for wind band, Casey expanded upon Husa's noted rows and more intricately outlined their usage throughout each of the movements to that the row was related. His discussion of the first movement and the row shown previously by Husa (Figure 1.3) summarizes its use within the first ten measures of the work, as well as the pitch classes (pcs) that have been left out in the second statement of the row and pcs that have been swapped in order (notably order numbers 7-11).[14] Casey notes that "Very little of the material in measures 11 through 24 can be related to the set or one of its transformations,"[15] reflecting Husa's mention of the rows being treated more freely than in other serial works. Casey also highlights that related rows P_1 and R_6 (Figures 1.4a and b) characterize the opening section of the "Introduction and Fanfare," noting important omissions and relations to the "chorale-motif" that he refers to as the "three-chord motive." Notably, Casey skips over most of the first movement, underscoring only the use of the prime form of the row again with the return of the A section of the movement before moving onto the "more serial" second movement.
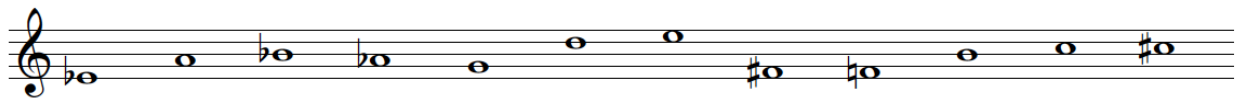

Figure 1.4a: P_1

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[13] It is important to be aware that Casey labels his rows using the P_0 = Prime Row labeling method and begins counting order numbers at 0. The rows and order numbers are labeled and referred to as Casey has in his own analysis for this section for ease of reference.

[14] Casey, "Serial Composition in Works for the Wind Band," 148.
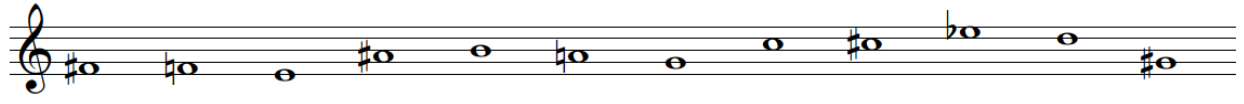
[15] Casey, 146.

Figure 1.4b: R₆

     The increase in the use of serial technique in the "Aria" allows Casey to provide a more thorough analysis of the second movement than the first. He notes the first trumpet call in the first movement (concert pitches D-E-Db-C at m. 37) and order numbers 1-4 of the row used in the first movement (G#-A-G-F#) are also a key component of the row on that the movement's composition was based.[16] Casey also provides a matrix for the "Aria" row that Neal referenced in his own analysis of the work (and informs this study as well). The bass line throughout this movement is a rhythmically augmented version of the prime row and its retrograde, moving throughout various instruments and with a few notable omissions in others. Casey refers to this method of bass writing as "reminiscent of Renaissance cantus firmus techniques."[17] Husa also expands upon the use of the row simultaneously as a melodic motive within the vibraphone and marimba through the first section of the movement (ending at m. 31.) Casey notes the omissions and "out-of-order" tones throughout this section until he deems the marimba and vibraphone are freed from serialism. These instruments eventually return to the retrograde form of the row, though Casey's attention to it is less detailed.

     The second movement also contains another melodic use of the row that Casey deems the "principal melodic formations" played throughout by the saxophone choir and is derived from RI₁ (Figure 1.5a) from the opening movement.[18] The melody eventually shifts into content using

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[16] Casey, 149.
[17] Casey, 151.
[18] Casey, 153-4.

RI5 (Figure 1.5b) and then fizzles out into a melody that is more difficult to relate to the original

set in what Casey deems another section of "free composition" until the return of the bassoon,

clarinet, and saxophone melody (beginning at m. 53), where he relates the melody back to I5

(Figure 1.5c) and then the ending to I1 (Figure 1.5d).
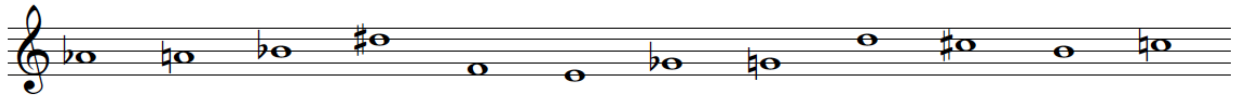
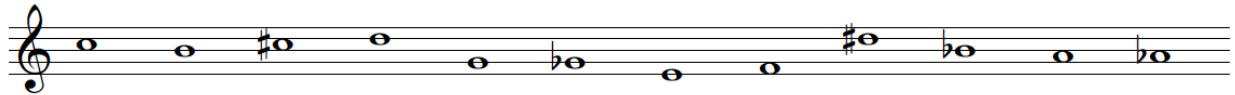*Figure 1.5a: RI1*
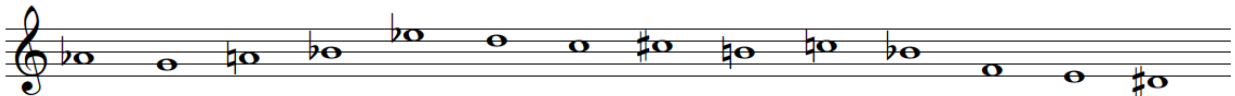
Figure 1.5b: RI5

Figure 1.5c: I5

Figure 1.5d: I1

   Casey discusses the third movement with an eye to detail and an exhaustive analysis of

the serial organization of percussion through rhythmic values, timbres, and dynamics that

accurately demonstrate Husa's concept of "strict mirror writing."[19] Casey concludes his analysis

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[19] Casey, 155-64.

by noting that the fourth movement does not contain a use of serial procedures and therefore does not warrant a serial analysis.

Karel Husa's Music for Prague, 1968: An Exploration of Compositional Process and Historical Background by Christopher Michael Neal

This analysis builds upon the work completed by Casey to determine prominent row forms and their locations in *MfP*. However, Neal uses a more overtly musicological lens on the motives and their relation to the invasion of Czechoslovakia. His dissertation includes chapters on the Hussites, the evolution of Czech nationalism and its culture, and the invasion of Czechoslovakia. Much of this discussion focuses on the historical importance of the Hussites and their war song "Ye Warriors of God and His Law," and how it serves as the primary motive that Husa uses throughout the work. Neal also focuses on the use of the war song throughout time, particularly focusing on its prominence in *Ma vlast* by Bedřich Smetana and how his use of the folk tune may have contributed to Husa's decision to include it. Neal's musical analysis focuses specifically on the use of serial techniques and symmetric relations throughout the first three movements of the work, as well as what he considers "free rotation of smaller motives" within the fourth movement.

Neal also emphasizes the "Bell Motif," that is a 1-2-1 succession of interval classes and applied more broadly throughout the work. Neal's writing is heavily driven by this concept, its name derived from Husa's use of the church bells in Prague as inspiration for musical ideas, as well as the visual of a swinging pendulum inside a bell being played to "reflect the alteration between states of being."[20] The Bell Motif serves as a justification of many structural

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[20] Neal, "Karel Husa's Music for Prague, 1968: An Exploration of Compositional Process and Historical Background," 104-13.

relationships, form, and symmetry throughout each of the movements. Much of Neal's work is focused on ties between the serial discoveries of Casey's previous studies and their relations to his own Bell Motif as a demonstration of symmetry in each movement, as well as the ways performers and conductors may reference the historical background of the piece to bring out specific motives and ideas within their own performances of the work.

Though the existing analyses of *MfP* have been written and provide detailed insight into much of the work, none looked at places within the piece where serialism may be present in less strict or clearly defined presentations. These studies serve as a solid foundation for a complete analysis of the work, pointing to areas where strict serial methods dwindle, and other methods of composition may come to light. However, even the creator of serialism did not believe in a firm note-by-note use of the technique. Schoenberg, upon the creation of his method, noted that serialism is meant as a compositional tool, and even in its closest strict adherence there is still room for alterations of the row forms and their transformations. In his 1936 essay that responds to theorists taking his compositional method too literally as a method of analysis, he laments: "What I feared, happened. Although I had warned my friends and pupils to consider this as a change in compositional regards, and although I gave them the advice to consider it only to fortify the logic, they started counting the tones and finding the methods with that I used the rows."[21] To use such strictness in serial analysis was discouraged at the creation of the serial method itself. If Schoenberg did not hold serialism to its most exact form, why would composers like Husa feel inclined to? The next chapter aims to look at those areas where strict serial

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[21] Arnold Schoenberg, *Style and Idea: Selected Writings of Arnold Schoenberg*, ed. Leonard Stein, trans. Leo Black (Belmont Music Publishers, 1975) 214.

composition is not at the forefront, notably the fourth movement, and propose a compositional

method by that the movement was likely composed.

CHAPTER 3: ANALYSIS OF IV. TOCCATA AND CHORALE

As explored in the previous chapter, the final movement of *MfP*, "Toccata and Chorale,"

has only been sparsely analyzed, and then only from a formal perspective. Though Husa may not

have explicitly utilized serial methods of composition in this movement, the emphasis of serial

techniques throughout the first three movements implies the value of viewing this movement

through a serial lens. That is the goal of this chapter.

Methodology

I felt it was important to go into the analysis of the fourth movement with fresh eyes,

looking simply for the presence of rows before factoring in thematic materials or formal analyses

to be sure any serial analysis was thorough. Upon the discovery of multiple aggregates (i.e., the

placement of all twelve pitch classes near one another), the next step was to take any clusters of

pcs that sounded at the same time and determine the possibilities for the first trichords or

tetrachords that could create the prime row. Once these possibilities were all written out, each of

the possible row forms were compared to the matrices of rows found in the first two movements.

Traditionally, multi-movement works are grounded in a single row, so it was important to

consider the possibility of the aggregates to match either of the matrices previously provided. It

would be no surprise that Husa would utilize multiple row forms or a new row form within the

final movement given his use of a new row for each of the other movements. If the matrices from

the first two movements were eliminated as possible matches, the rows were then compared to

each other to determine whether any rows in the movement were directly or closely related. This

step was crucial, as there were many possibilities for a new row to become the row upon that the

other discovered rows were based. To ensure no possible matches were missed, matrices for each

of the aggregates were created and compared to all the possibilities for the other sets discovered, accounting for any combinations of the beginning trichords or tetrachords. The sets as they were found were also considered as retrogrades if they were consistently eliminated as matches to account for the possibility that the initial presentation of a row may have been the retrograde of its prime form. Sets with no matches were marked and then the next possibility was subjected to the same comparison until all sets were compared. If a set was found to have an exact or close match, it was noted and then compared again to the other possibilities for each of the sets found and their retrogrades to ensure no matches were missed. This process is more thoroughly outlined within the next section.

Preliminary Findings

Upon initial analysis, a sizeable number of aggregates were discovered throughout the beginning of the "Toccata and Chorale" up until rehearsal M. For the sake of clarity, all pcs listed in the following analysis will be provided in concert pitch. The first aggregate discovered is presented at m. 34 beginning after the rest on beat 3 in the 1st and alto clarinets, ending at rehearsal B. The resulting row, P3, is shown below in Figure 3.1a and in its musical context in 3.1b. The row form bracketed and repeated pcs are placed in parentheses for clarity. One other version of this row, P4, is presented at m. 91 after the rest on beat 2 in the clarinet family, baritone saxophone, and joined later by the English horn and oboe. However, P4 is presented without its fifth pc, G, as shown in Figure 3.2a and b.
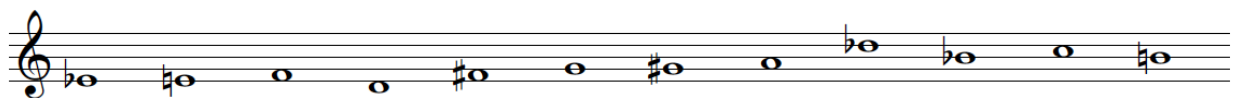

Figure 3.1a: P3

Figure 3.1b: Mvt IV, mm. 34-7 showing P₃

Figure 3.2: P₄

Figure 3.2b: mm. 89-93 showing P₄

The next aggregate that is presented is in m. 55 in what is considered the second theme by Adams and Neal. This aggregate, shown in its musical context in Figure 3.3, does not have any strong relations to the other rows already identified. The next presentation of this theme occurs at rehearsal F (m. 115) in the clarinet and saxophone families. An aggregate is formed by the pitches in this theme and a few of the oscillating eighth notes that complete the thematic idea in m. 118. This row, shown in Figure 3.4, is not related to either of the previously discovered aggregates, but does show promising relations to subsequent aggregates and will be labelled as P_{10}. These relations to aggregates that are uncovered later in the movement designate this row as the governing prime form for the movement and allow for the disregard of prior aggregates as significant. In m. 133 this theme returns in the trumpet family and appears to be a presentation of P_7. However, there are five pcs that are not presented in the order given in the matrix and one pc

(D) that is omitted. This relationship is not close enough to be considered a serial relationship, though there are fragments of P_7 that are worth acknowledging. Many of the other aggregates throughout this movement seem at first to be related to P_{10} but are not consistent with its intervallic content beyond the initial trichord or tetrachord. Due to this lack of consistent relationships between rows, the movement cannot be sufficiently analyzed using traditional serial methods.

Figure 3.3: Second Theme of Mvt IV, mm. 55-63

Figure 3.4: P₁₀

Figure 3.4b: mm. 115-20

Fuzzy Serialism

To understand the relationships that were discovered among rows and "near-rows" in the "Toccata and Chorale," a new analytical method must be developed. Like traditional tonal voice leading and the smoothness that can sometimes be found in the transformations between pitch sets, the transformations between two tone rows derived from the same prime form can sometimes be discovered through analysis. This is not to say that the transformations performed are easily heard, especially in music such as the final movement of *MfP*, where the aggregates are few and far between. However, these transformations and related row forms can sometimes be uncovered by looking at thematic and motivic ideas throughout a movement.

Inspired by a method of comparing set classes that are closely related discussed by Joseph Straus, I have developed a method for identifying relationships in serial music in that tone rows appear in collections that resemble each other but are not direct transformations of the same row. In his *Introduction to Post-Tonal Theory*, Straus mentions the terms quasi- or fuzzy transposition and quasi- or fuzzy inversion in that two set classes are related by transposition or inversion except for a few intervals that are varied only by a few half-steps.[22]

To understand what fuzzy transposition is, it is important to understand what a traditional set-class transposition entails. Set-class transposition refers to the transformation of some chord (trichord, tetrachord, etc.) by a certain number of half-steps resulting in a new chord that shares the same intervallic content of the original but not all the same pcs. The transformation is labeled using the letter "T" and a subscripted number that denotes the number of half steps are present between the original and the transformed chord. Figure 3.5 demonstrates this concept. If a

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[22] Straus, *Introduction to Post-Tonal Theory*. 177-8.

trichord consisting of the pcs C-F-Gb is transformed by T₄, it is shifted up four half-steps and the resulting trichord is E-A-Bb.

Figure 3.5: T₄ when applied to C-F-Gb

Fuzzy transposition, then, requires the relationship between the two trichords to contain at least one interval of transposition different than the others. To label these fuzzy relationships, he utilizes the symbol of the asterisk to denote that the relationship is not direct and a parenthetical number below the transpositional or inversional interval to mark how many half steps away from a perfect transposition or inversion the set classes were discovered to be. Straus' labeling system is shown in Figure 3.6a. The labelling system for fuzzy serialism is quite similar. However, instead of labeling the distance from the perfect relationship between two sets (that both appear as real musical objects), the labelling system here will refer to the differences between two row forms that would create a perfect transformation between the version under investigation and its idealized form. The asterisk is used before the row name to denote the row transformation as close but not direct. Unlike the parenthetical expression below in the label for a fuzzy transposition, however, the parenthetical expression below the row name contains two numbers. The first number shows how many pcs within the row are out of order or displaced. A pc is "displaced" if it occurs in the row form within the expected ordering before it occurred within the actual ordering. This is considered a displacement only if the pc occurs before the actual ordering because it alters the order in that the rest of the pc in the row can be presented. It also alters the expected intervallic relationships present within the row as it is actually ordered.

The second number designates how many pcs within the fuzzy row are missing. For example, the label (3,1) indicates that three pcs are displaced and one pc is absent. Figure 3.6b illustrates this instance. The ideal form of P2 appears in the top system. The version in the bottom system differs in that Ab, C, and A all appear before F, Gb, and G and that B is missing. For the sake of formatting, when fuzzy serial transformations are written in a block of text rather than accompanying a figure, the coordinates may be listed as subscripts following the transformational number (i.e. *R3 (1,1)).

*T$_3$
(2)

Figure 3.6a: Straus' labeling format and demonstration for fuzzy transposition, with T$_2$ as expected immediately following

F	--------	G		F	——	G#
F	--------	B		F	——	A
#	——	b		#	——	D

P$_2$

*P$_2$
(3,1)

Figure 3.6b: Labeling format for fuzzy serial transformations and comparison between a fuzzy row form and its standard presentation

Figure 3.6c: *P$_2$ (4,3) would not be considered a fuzzy row

One other piece to consider when utilizing this labelling method is the potential for a large distance the fuzzy row form is in relation to its ideal version. If a row has excluded or displaced over half of the aggregate, could it really be considered a presentation of the row form? I believe the answer to be no. To create criteria by that to judge this, we must look at the parenthetical expression below the row transformation. If the coordinates in the parentheses add up to or are under 6, then the row can be considered a fuzzy transformation of the prime row. However, if the coordinates presented in the parentheses add up to a number above 6, then the row should not be considered a presentation of the transformed row. For example, if a potential row (or "near-row") requires a fuzzy label of (4,3), then it could not be considered a row form even under the conditions of fuzzy serialism—though it could be regarded as a partial presentation of the row depending on other analytical criteria. Figure 3.6c uses our previous row, P_2, but alters it by displacing A,B, Ab, and C. This presentation is also missing F, Gb, and G. With four pcs displaced and three others not present within the provided example, the number of pcs that exist in the expected order to draw connections back to P_2 are incredibly slim. This eliminates the possibility that the example provided in Figure 3.6c should be considered a "row" or even a "near-row."

Tracing fuzzy serialism in the analysis of both "IV. Toccata and Chorale," as well as "II. Aria," crystallizes and clarifies the pitch content of passages for that Casey and Neal spent paragraphs discussing that pcs were shifted. The labelling system for fuzzy serialism allows for easy comparisons between the row and other near-presentations of it, as well as any other serial relationships that are present throughout a work. I believe that this theory could prove useful in the analysis of works other than *MfP* where composers experimented with serialism in less-strict applications. The final chapter of this study will demonstrate that applicability.

Findings

The "Toccata and Chorale" contains three rows that are presented in multiple transformations. The first row, as discussed in the preliminary findings and shown in Figure 3.1, is P_3, played by the 1st and alto clarinets beginning on Eb in m. 34 and continuing to the end of m. 36. A transposition of this row, P_4, is presented later in m. 91 in the clarinets, baritone saxophone, and joined by the English horn and oboes in mm. 92 and 93 respectively. This statement of P_4 is missing G, the fifth pc in the row. Using the labelling method for fuzzy serialism, this row (shown in Figure 3.2) is considered *$P_{4\,(0,1)}$.

The second aggregate used in the movement is part of what Adams and Neal designated the second theme. Though fragments of this row are found at the theme's first presentation at m. 55, P_{10} is not completely presented until rehearsal F (m. 115), where the melody changes to a more legato presentation in the clarinets (excluding the Eb clarinet) and saxophones. The completed row form is the same as shown in Figure 3.4. Although the pc G makes an appearance in beat 3 of m. 117, it is not included in the row until a measure later when it is more saliently present, as the other pcs within the row have all occurred for longer durations or multiple times. The theme is handed off to oscillating staccato eighth notes in the upper woodwinds and horns, where the row is completed by the presence of pc C at the end of m. 117 and G and F in the horns. The presented fragments of this row occur at the first instance of the second theme at m. 55 (Figure 3.3). This series of pcs found results in the row *$P_{8\,(7,0)}$. Since more than half the pcs are displaced, this series of pcs does not meet the threshold for being considered a fuzzy row.

The trumpet theme and other forms of the row do appear later throughout the piece. The next instance is just briefly after its prime form in m. 133 by muted trumpets and is picked up in m. 137 by the low clarinets, saxophone family, and string bass. This row, *$P_{7\,(5,1)}$, is given in

Figure 3.7a and as presented in the music is shown in Figure 3.7. The omitted pc, D, is designated by parentheses. Even though there are multiple instances of displaced pcs, these pcs follow the expected order of the row despite distractions in that presentation. Retained groupings of pcs are shown using slurs. Retained groupings of pcs that occur in retrograde are designated using slurs with an asterisk following the final pc of the group.
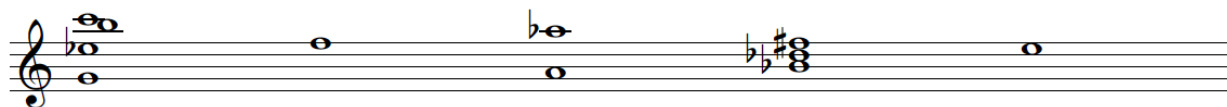

*Figure 3.7a: *P7 (5,1)*

*Figure 3.7b: *P7 (5,1) as presented beginning in m. 133*

The next instance of a related aggregate occurs in mm. 150-52 in the contrabassoon, saxophones, and brass. The resulting row is *P1 (3,1). The row and its aggregate as presented within the movement are given in Figures 3.8a and b.
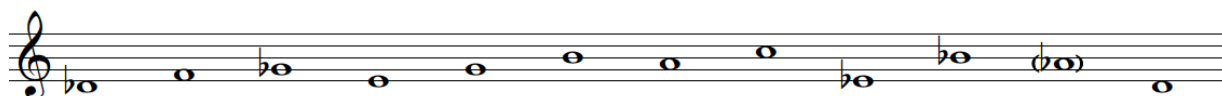
*Figure 3.8a: *P1 (3,1)*
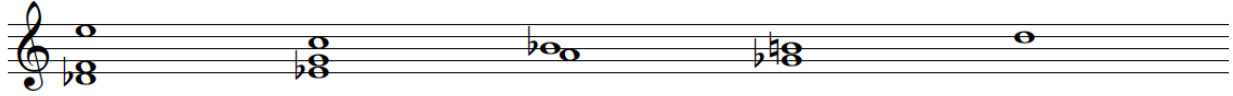
Figure 3.8b: *P₁ ₍₃,₁₎ as presented at m. 150

Rows *R9 (4,0) in m. 152 (with Db making a very late appearance in m. 158 in the second trombone) and *RI11 (1,1) in mm. 195-9 in the horns, low brass, and string bass are also present. These fuzzy rows and their corresponding idealized forms are shown below in Figures 3.9 and 3.10.

Figure 3.9a (cont.): *R9 (4,0)

*Figure 3.9a: *R₉(4,0)*

*Figure 3.9b: *R_{9 (4,0)} as presented at m. 152, the first score excerpt includes the parts for the saxophone family and Tpts 1-4*

*Figure 3.10a: *RI_{11 (1,1)}*

*Figure 3.10b: *RI$_{11 (1,1)}$ as presented at m. 195*

The next aggregate emerges at m. 64 from pcs in the English horn, bassoon,

contrabassoon, brass, and percussion. The resulting row, shown in Figure 3.11, is P$_{10}$. There were

other aggregates present related to this row, the first being at m. 69 starting with the C in the

baritone saxophone that returns in the 1st horn at the end of m. 72 and continuing in the 2nd and

3rd horns through the prolonged pcs present in the brass voices. The resulting row relation

(Figure 3.12) is *P$_{0 (3,3)}$, as E, Ab, and G have been omitted. The row presented at m.152 (Figure

3.9b) is also related to P$_{10}$, with Db as the only omission. This row, *I$_{10 (5,1)}$ is shown in Figure

3.13 as it relates to I$_{10}$.

Figure 3.11: P$_{10}$ at m. 64

Figure 3.11b: P_{10} at m. 64, instrumentation shown in first image is score order E. Horn through Timpani.

Figure 3.12a: *P_{0 (3,3)}

Figure 3.12a (cont.): *P$_{0\,(3,3)}$

*Figure 3.12b: *P0 (3,3) as presented at m. 69*

*Figure 3.13: *I10 (5,1)*

One other aggregate occurs at m. 70 in the trumpets and includes the F# in the clarinet from the previous figure. The resulting row, *R2 (6,1), is shown in Figure 3.14a with its aggregate within the music given in Figure 3.14b. The numbers of this row's fuzzy serialism label sum to 7, meaning that it doesn't constitute a true row form by the theory's principles. However, in this presentation the row contains trichords whose order has been retained—they were merely shifted around within the row. For example, the initial trichord (A-Ab-Bb) is preserved. The next trichord in the row, B-Eb-F, is also preserved. If this trichord were to be presented in the music without displacement, the resulting row would be *R2 (3,1). The preservation of this trichord despite its displacement within the row results in a palpable relationship despite its borderline status as a row form.
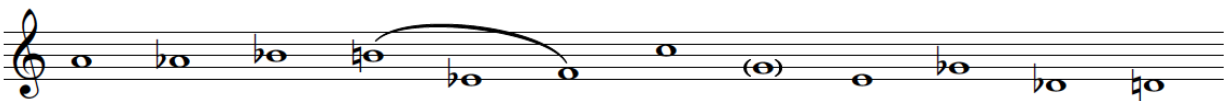

*Figure 3.14a: *R2 (6,1)*

Figure 3.14b: *R₂ (6,1) as presented at m. 70

Adams noted that "He [Husa] uses serial procedures to promote the greatest possible thematic unity through motivic interrelation."[23] The fourth movement clearly demonstrates this tendency. However, the location of row forms throughout *MfP* cannot stop short at just finding rows or near-rows and relations within the fourth movement. If the "Toccata and Chorale" contains such an abundance of examples, what may the "Aria," whose pedal points and percussion parts are the only aspects analyzed in published scholarship, yield under the auspices of fuzzy serialism? The next chapter will explore this issue.

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[23] Adams, "Karel Husa's Music for Prague, 1968: An Interpretive Analysis," 20.

CHAPTER 4: PICKING UP PIECES IN "II. ARIA"

As fuzzy serialism was located throughout the final movement of *MfP,* it is crucial to look back at other movements to note other instances where this lens may also prove fruitful. This chapter will review "Aria" and designate areas where fuzzy serialism is present rather than the strict serial composition that has previously been discovered.

Casey's analysis of the second movement outlines many instances of the row shown in Figure 4.1a.[24] However, when Casey approaches m. 31, he begins to find the pcs presented in the percussion parts were increasingly disorganized, to the point of no longer finding strict serialism as a method of composition. Casey's analysis makes clear that certain pcs are omitted or displaced, and that patterns may emerge from these omissions or displacements. Though no patterns could be uncovered, the acknowledgement that pcs were omitted and displaced throughout this movement provides a hint that fuzzy serialism may be the perfect lens for this context.

This analysis focuses on the rows in the pitched percussion parts. The first displaced pcs appear at m. 17: the row here, shown in Figure 4.1b, is $*P_{7\,(3,0)}$. In m. 23, the row is revisited in a closer form to its original: $*P_{7\,(1,0)}$ (Figure 4.1c) with only G displaced, following Ab and Gb. At m. 25 the row is presented as $*P_{7\,(1,1)}$ (Figure 4.1d) with C omitted and D occurring between C# and D#. Following at m. 27 is $*P_{7\,(2,0)}$ (Figure 4.1e) with Gb displaced between G and Ab and Db occurring before C.

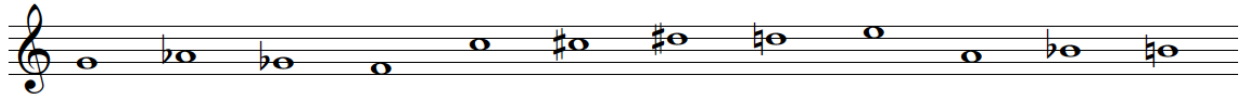[24] Casey, "Serial Composition in Works for the Wind Band," 150.
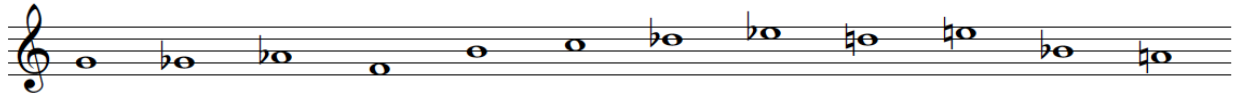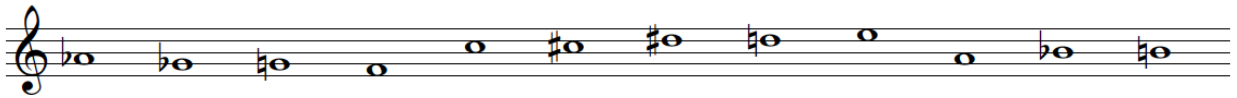
Figure 4.1a: P₇

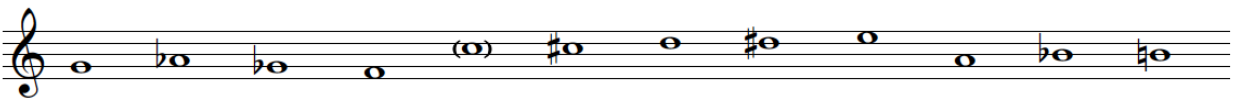*Figure 4.1b: *P₇ (3,0)*
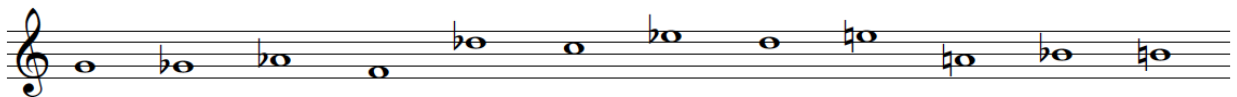

*Figure 4.1c: *P₇ (1,0)*

*Figure 4.1d: *P₇ (1,1)*

*Figure 4.1e: *P₇ (2,0)*

The row *R₇ (4,2) is present beginning in m. 30. The initial trichord G-Ab-Gb is retained in

its retrograde form, though it is displaced within the row. F is also displaced, and E and D are

omitted in this presentation of the row. This iteration of the row is shown in Figure 4.2.

*Figure 4.2: *R₇ (4,2)*

The row *P₅ (3,2) (Figure 4.3a) is present beginning in m. 32, however, it does require

alteration to be accounted for using fuzzy serial analysis. Much like the row *R₂ (6,1) from the

fourth movement, this row upon initial analysis does not appear to share more than a fragmentary

relation to the prime row. The omissions in *P₅ (3,2) include Eb and A. One of the displaced pcs in

the row, Ab, greatly affects the row's relationship to its prime form—every pitch that appears in the music after Ab is displaced within the row as compared to its ideal form. However, if a closer look is taken, except for the interjection of C-B (a dyad that is also displaced) all the pcs apart from Ab occur in order according to their appearance within the music. It is the retention of this order that could allow for the row to be considered *P5 (3,2). However, this example serves as an exception rather than the standard, as its traditional fuzzy row label would be *P5 (6,2). The presentation of the aggregate from within the piece for comparison is shown in Figure 4.3b.
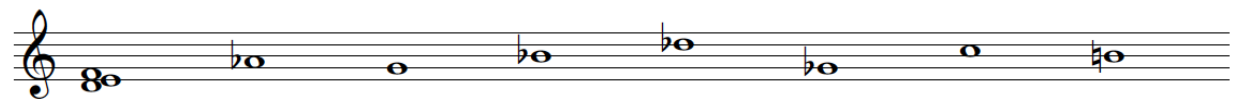
*Figure 4.3a: *P5 (3,2)*

*Figure 4.3b: *P5 (3,2) as presented at m. 32*

Casey did not locate any row forms between mm. 32-52. The aggregates shown prior end in m. 36. Although there are many repeated patterns and figures, from mm. 36-52 a fuzzy row can be uncovered solely in the marimba and vibraphone parts, as shown in Figure 4.4 with measure numbers denoting where specific pcs can be located. This row is just shy of being considered *RI3: if Ab and Gb were switched around within the row, this aggregate could be considered *RI3 (4,1). However, with the Ab and Gb occurring in retrograde in the matrix, the coordinates are pushed over the sum of 6 at (6,1).
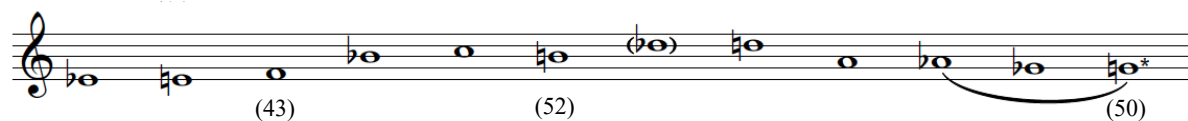
Figure 4.4: *RI$_{3\,(6,1)}$

There were other instances of rows found throughout the movement that were not strictly related to those located by Casey or in the percussion parts. Score excerpts providing an outline of where these row forms are located are all provided in Figure 4.5 Many of these row forms overlap, with one row beginning before another has finished, and some are clearly denoted by phrase markings, beginning with the pickup to m. 33 in the low clarinets, saxophones, and 3rd and 4th trumpet parts. This aggregate shares a close relation with both I$_8$ and R$_4$, with each containing six displaced pcs. However, R$_4$ maintains the trichord Bb-A-D, and it is for this reason the row is considered *R$_{4\,(6,0)}$ as shown in Figure 4.6a. The aggregate as it occurs beginning in at the pickup to m. 33 is shown in Figure 4.6b. It shifts between parts, adding bassoon 1 and horns 3 and 4 immediately at m. 33. This row excludes the rhythmic ostinato in the upper woodwinds, but is picked up by the piccolo, flute, oboe, and English horn parts in m. 36 at Rehearsal K. Also at K is the presentation of a new row form beginning on b. 3 in trumpets 1-3, horns 3-4, trombones, and baritone. The resulting row is *P$_{5\,(4,1)}$ (Figure 4.7) and concludes at the phrase marking in m. 37. The new phrase, beginning on beat 3 of m. 37, starts with the brass and incorporates the woodwind and percussion parts, concluding by beat 3 of m. 39. The resulting row is *P$_{5\,(3,0)}$, shown in Figure 4.8.[25] Overlapping this row is a presentation of *I$_{7\,(4,1)}$ (Figure 4.9) that begins on the downbeat of m. 39 and contains the pcs in the rhythmic ostinato. Beginning in the flutes, oboes, and upper three clarinet voices (Eb, 1st, and 2nd), the line adds in

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[25] Other closely related row forms, P$_4$ and RI$_8$, were excluded as they contained fewer of the initial heptachord before a displaced pitch was located.

4th trumpet on beat 2, as well as alto and bass clarinet and all horn parts on beat 4. The row concludes by beat 2 of m. 40, shifting to transitional melodic material in many of the lower voices.

Figure 4.5: mm. 33-40
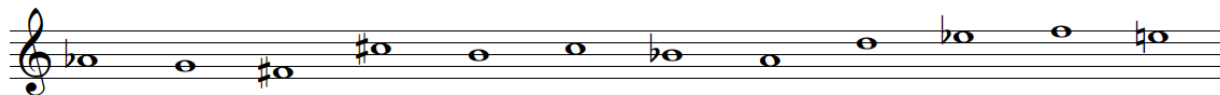
Figure 4.5 (cont.): mm. 33-40

Figure 4.6a: *R4 (6,0)

Figure 4.6b: *R4 (6,0) as presented beginning one beat before m. 33
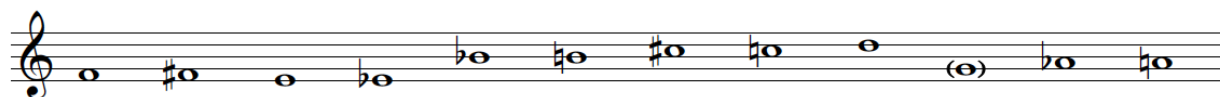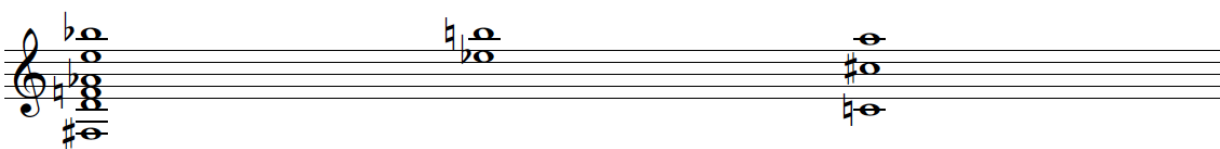

Figure 4.7a: *P5 (4,1)
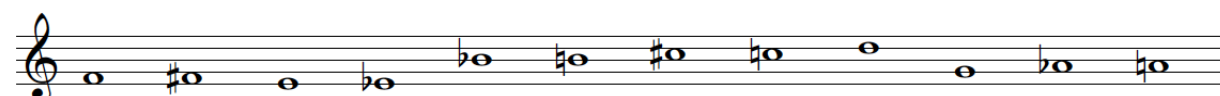

Figure 4.7b: *P5 (4,1) as presented at Rehearsal K

Figure 4.8a: *P5 (3,0)

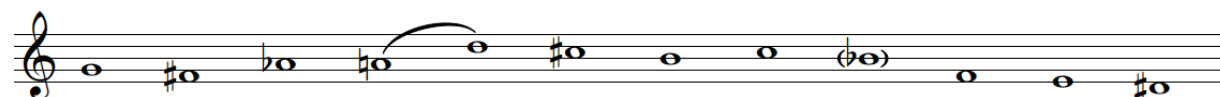*Figure 4.8b: *P5 (3,0) as presented in m. 37*
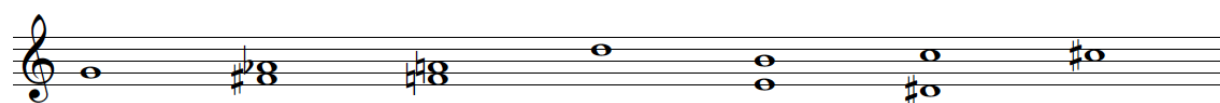

Figure 4.9a: *I7 (4,1)

Figure 4.9b: *I7 (4,1) as presented in m. 39

The brass voices, except for baritone and tuba, then present *I$_{4 (0,3)}$ in m. 41. A pivot to a retrograde row (found by Casey also) occurs here in the baritone, tuba, and string bass are joined by the trumpets and trombones on beat 2 of m. 42, where the row concludes. The presentation of *I$_{4 (0,3)}$ is different than many of the rows found throughout the work in that it is presented as stacked chords rather than as an accompanimental or melodic gesture. These pcs are directly correlated to the chorale chords,[26] with the omitted trichord from the row containing two of three pcs not employed within the chords. Looking back at Husa's own analysis of the work, finding this direct link to the chorale chords in this movement with an attention to the omissions from the row makes clear the harmonic cohesion present throughout the entirety of the work.[27] The row, its presentation, and the chorale chords are shown in Figure 4.10, though the score example is not exhaustive, as some of the pcs the row contains are present in the woodwind parts as sustained pcs.
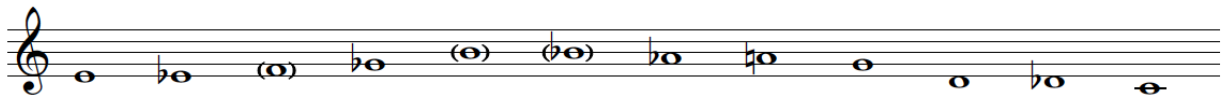

*Figure 4.10a: *I$_{4 (0,3)}$*

Figure 4.10b: Chorale Chords

[26] Adams, "Karel Husa's Music for Prague, 1968: An Interpretive Analysis." 20.
[27] Husa, "Music for Prague 1968." 261.

*Figure 4.10c: *I4 (0,3) in m. 41*

In mm. 41-8 (Figure 4.11), a closely related row form can be located. If trichords and dyads that appear in the expected order are accounted for the resulting row is *P2 (6,1). Shown in Figure 4.12, this row contains melodic material presented in the low clarinets, saxophones, horns, and baritone. Some of the pcs repeat and, after expanding to include double reed instruments and string bass, the aggregate continues with new pc content in m. 46 with A. The final pcs appear in m. 47 (B) and m. 48 (C#), where the row concludes an eighth note before m. 49. The melodic line continues with a new row, this time *P3 (6,0) (Figure 4.13) in mm. 49-52 with a similar instrumentation as the previous row form. Following the presentation of this aggregate, Casey's analysis accounts for the remainder of the piece with rows such as I5 and I1 in complete, ordered aggregates.
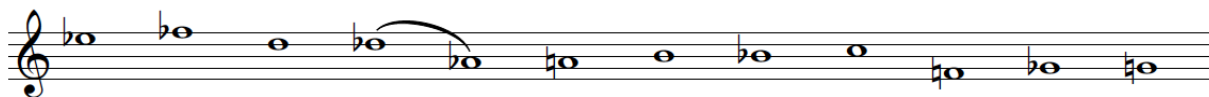

*Figure 4.12: *P2 (6,1)*

Figure 4.13: *P3 (6,0)

With the entirety of the movement considered, it is clear serialism is prevalent throughout much of the work. Though the row forms and their presentations may not be clear in most of Husa's work, the influence of serial procedures is made obvious in an analytic method that can recognize fuzzy serialism. This engagement with fuzzy rows may also provide a deeper understanding of many other serial works that have heretofore proven resistant to analysis that depends on stricter adherence to a given row. The following chapter will demonstrate the value of this "fuzzy' analytic method to another composition and then contextualize the method next to Schoenberg's own attitude towards serialism.

CHAPTER 5: CONCLUSION

Karel Husa's *Music for Prague, 1968* is a well-respected piece of repertoire. Although authors have touched on the historical influences and implications as a war-time composition, an exhaustive exploration of serialism's role and influence throughout the entire work has proven elusive.[28] The first and second movements make classic use of serialism, as demonstrated by Adams, Casey, and Neal. Casey's analysis of these movements, as well as his thorough analysis of the completely serial third movement, provide a solid stepping-stone for analyzing *MfP*.

Acknowledging and analytically embracing the fuzziness of Husa's composition shows that serialism seeps into the second movement more than others had previously discovered. This analysis has also unearthed loose versions of multiple row forms based closely around thematic materials in the fourth movement of the work.

With the understanding that fuzzy serialism can be effectively applied to the focus of this thesis, it is also important to understand the broader applications of this analytical tool. To that end, let us briefly explore how it can be applied to the second movement from Aaron Copland's *Quartet for Piano and Strings*. This quartet has been previously analyzed using serial techniques to the extent that they were applicable, as Copland (much like Husa) explicitly stated he used serial-like methods of composition for the work. However, this piece uses a row that, in most musical presentations contains only 11 pcs, saving the final pc for unique or special functions.[29] The prime form on that the piece is based, $*P_{10\,(0,1)}$, is shown in Figure 5.1. In the second

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[28] Adams, "Karel Husa's Music for Prague, 1968: An Interpretive Analysis"; Casey, "Serial Composition in Works for the Wind Band"; Neal, "Karel Husa's Music for Prague, 1968: An Exploration of Compositional Process and Historical Background."

[29] James McGowan, "Harmonic Organization in Aaron Copland's Piano Quartet" (University of North Texas, 1995), http://libproxy.unl.edu/login?url=https://www.proquest.com/dissertations-theses/harmonic-organization-aaron-coplands-piano/docview/250226404/se-2.

movement of the work, the row is presented throughout the movement to varying degrees of
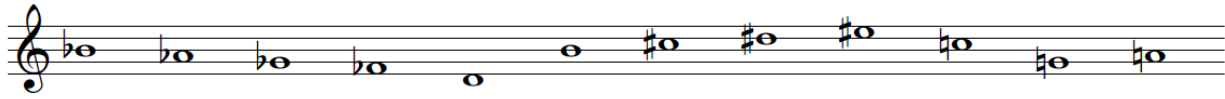
completion.

*Figure 5.1: *P10 (0,1)*

      For this movement, the "Meno mosso ancora" (mm. 97-114) was analyzed using fuzzy

serialism techniques to pick up where previous analysts left off.[30] This section is semi-canonic in

nature and hinges on row forms that omit pcs. Figure 5.2 shows the analyzed section of the score

with each row form labeled and enclosed within brackets. The aggregate as it occurs within the

piece are shown below in Figures 5.3a and b. In m. 97-8, *P9 (3,3) appears, with the retention of

the opening melodic theme F-Eb-Db and the omitted pcs, C-D-E, displaced as a trichord to the

middle of the row. The row includes the first beat of the piano and the G# in m. 98, excluding the

viola and the left hand of the piano on beat 2. Immediately following *P9 (3,3), is *P5 in m. 98.

This row begins with the viola melody, contains its echo in the left hand of the piano, and

includes new and repeated pcs through m. 99. The row is close to being considered fuzzy in its

presentation, with the coordinates resulting at (3,4). However, the dyad of Bb/C is held invariant

despite being displaced, and B/A are presented as a dyad in retrograde form, so the row would

not qualify as a fuzzy form by one as shown below in Figures 5.4a and b. At mm. 100-101, *P1

(4,1) is presented with C as the single omission and shown in Figure 5.5a. If we look at the way

the row is presented in its context versus its ideal form, it is clear the trichords formed in the

violin (C#-B-A) and viola (F-D-E), indicated with dashed slurs, are maintained within the row

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[30] McGowan.

form with G as an interruption but that the hexachord formed by these pcs are stacked in the musical context shown in Figure 5.5b.

Figure 5.2: Excerpt from Copland's "Quartet for Piano and Strings"

Figure 5.2: Excerpt from Copland's "Quartet for Piano and Strings" continued

Figure 5.3a: *P9 (3,3)

Figure 5.3b: *P9 (3,3) as presented in m. 98

Figure 5.4a: *P5 (3,4)

Figure 5.4b: *P5 (3,4) as presented in m. 99

Figure 5.5a: *P1 (4,1)

Figure 5.5b: *P1 (4,1) as presented in mm. 100-1

From here, the row forms used beginning at m. 102 are often demarcated by rests and begin with the 32nd note pickups immediately following, though not every presentation of this rhythmic figure denotes a new row form. The pickup to m. 102 begins with *RI2 (2,1) with F as

the omitted pitch and C, B, and D being displaced. The row concludes on beat 2 of m. 104, and

its presentations are shown in Figure 5.6a and b. Immediately following is a row form that is

close to *P$_0$, however, with the omission of F the coordinate sum of (6,1) is 7. It should be taken

into consideration that the trichord G#-F#-E is maintained and if it were to be presented in the

correct row placement within the musical context the row would be considered *P$_0$ (3,1). This
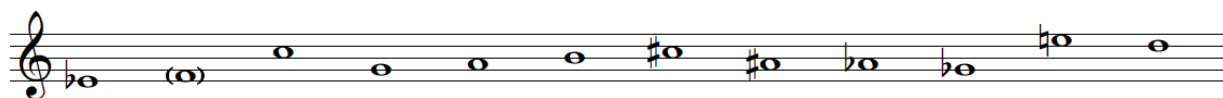
discrepancy is shown in Figures 5.7a and b.

*Figure 5.6a: *RI$_2$ (2,1)*

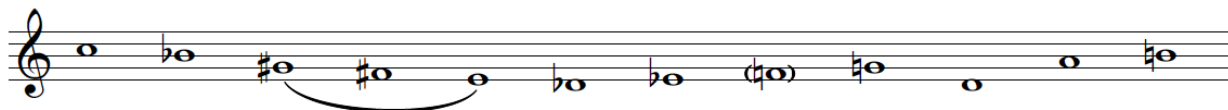*Figure 5.6b: *RI$_2$ (2,1) as presented in m. 102*

*Figure 5.7a: *P$_0$ (6,1)*

*Figure 5.7b: *P$_0$ (6,1) as presented in m. 104*

The next row form is presented beginning in m. 106. There is a special consideration

here, as the pc D, that is part of the initial tetrachord, is not presented until the end of the row.

The pcs F and B are omitted, the dyad of Db and Bb is maintained but displaced, and the trichord

E-F#-G# is retained in retrograde form within the row. If the shifting of pc D to the end of the

row is considered, the resulting row is *RI2 (3,2) as shown in Figures 5.8a and b. At m. 109, *I7 (4,2)

can be located with F and Bb as omissions. Figures 5.9a and b demonstrate the presentation of

this row, with G# considered a displaced pc as it appears at the end of the row. A row form

appears at m. 110 as *I3 (5,0). It should be noted that the dyads G/A and D/C are retained and—in

congruence with the hexachord in m. 100—are presented within the row with a single pc (B)

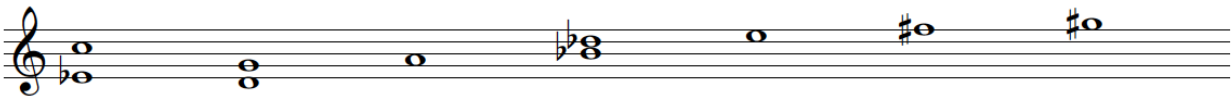interrupting (Figures 5.10a and b).

*Figure 5.8a: *RI2 (3,2)*

*Figure 5.8b: *RI2 (3,2) as presented in m. 106*
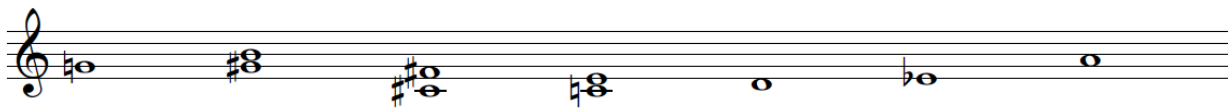

*Figure 5.9a: *I7 (4,2)*
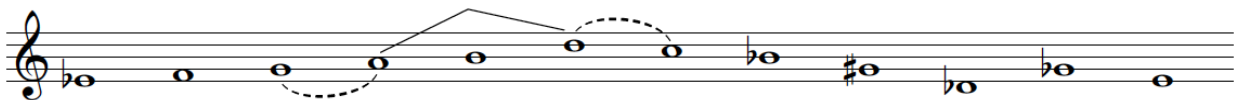

*Figure 5.9b: *I7 (4,2) as presented in m. 109*

*Figure 5.10a: *I3 (5,0)*

*Figure 5.10b: *I3 (5,0) as presented at m. 110*

Consideration of fuzzy serialism can illuminate a wide variety of works well beyond the scope of this thesis, even reaching as far back as Schoenberg's Op. 25 *Suite for Piano*—the first work ever to be based upon a single twelve-tone row. The method of analysis can be used to foster clearer understanding of works already recognized as quasi-serial either by analysts or composers. It has potential to be used for further exploration of many pieces, highlighting relationships that may have been difficult to recognize previously.

Systematic consideration of fuzzy serialism can begin to unravel our tightly-knit definition of serialism and begin to find more applications of serialism that resonate with Schoenberg's original intentions: "To mention such commonplace wisdom should appear superficial, were it not that the theorists always fall into the error of believing their theories to be rules for composers instead of symptoms of the works, rules that a composer has to obey, instead of peculiarities that are extracted from the works."[31] Understanding this fault and applying new methods create an opportunity for more penetrating analyses of works ranging from Schoenberg's first serial pieces to *Music for Prague, 1968*.

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[31] Schoenberg, 214.

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