AN ANALYSIS OF GROWTH IN KAREL HUSA'S MUSIC FOR PRAGUE 1968

THESIS

Presented to the Graduate Council of the
North Texas State University in Partial
Fulfillment of the Requirements

For the Degree of

MASTER OF MUSIC

By

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May, 1976

Davidson, Richard C., An Analysis of Growth in Karel Husa's "Music for Prague 1968." Master of Music (Theory), May, 1976, 64 pp., 4 tables, 38 illustrations, bibliography, 6 titles.

The problem is to relate four parameters, thematic development, chord tension, tonality, and rhythm to musical Growth in Karel Husa's Music for Prague 1968. The analytical technique consists of determining a typology and relating that to Growth and is applied in small dimensions to the "Introduction" and in large dimensions to the whole composition.

Movement in the composition is goal oriented, and each parameter contributes in different ways, one providing contrast, another continuity, and another variety. Shapes are delineated by cadences characterized by a decrease followed by an increase in Movement. Growth is characterized by Shapes in which Movement starts at a low level, moves to a climax three quarters through, and relaxes for the end of the Shape.

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CHAPTER I

INTRODUCTION

Historical Implications

Karel Husa was born in 1921 in Prague, Czechoslovakia. He studied at the Prague Conservatory and at the Paris Conservatory and Ecole Normale. Among his teachers were Arthur Honegger and Nadia Boulanger. In 1954 Husa was appointed to the Music Faculty at Cornell University as Professor of Composition and Director of the Cornell University Symphony and Chamber Orchestras, the position which he presently holds. Husa's works have been performed internationally, and he has won many awards including a Gugaenheim Fellowship for composition and the 1969 Pulitzer Prize in Composition for his String Quartet No. 3. He is also an internationally known conductor.[1] The prominence of this man, and a lack of critical analysis of his work create the impetus for this analysis of Music for Prague 1968.

> It was in late August 1968 when I decided to write a composition dedicated to the city in which I was born. I have thought about writing for Prague for some time because the longer I am far away from this city (I left Czechoslovakia in 1946) the more I remember the beauty of it. During these tragic and dark moments of Czechoslovakia in August 1968, I suddenly felt the necessity to write this piece for so long meditated.[2]

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[1]Karel Husa, "Karel Husa, List of Works and Recordings" (Ithaca, 1973), p. 1.

[2]Karel Husa, "Notes on Music for Prague 1968" (Ithaca, 1973), p. 1.

In August of 1968 the Warsaw Pact nations led by Russia decided to occupy Czechoslovakia, because the Alexsander Dubcek regime had become too liberal. The Czechoslovakian government was not only making economic deals with the western countries, but was moving away from communism idealistically through greater freedom of speech and added incentives toward more free enterprise. The Czechoslovakian people did not fight back physically but mounted an all out campaign of hate and resistance toward the invading troops.[3]

The "Foreword" to the score gives an idea of the feelings experienced by the composer toward his native country during this time and how these are incorporated into the composition:

> Three main ideas bind the composition together. The first and most important is an old Hussite war song from the 15th century, "Ye Warriors of God and His Law," a symbol of resistance and hope for hundreds of years, whenever fate lay heavy on the Czech nation. It has been utilized also by many Czech composers, including Smetana in My Country. The beginning of this religious song is announced very softly in the first movement by the timpani and concludes in a strong unison (Chorale). The song is never used in its entirety.
>
> The second idea is the sound of bells throughout; Prague, named also the City of "Hundreds of Towers," has used its magnificantly sounding church bells as calls of distress as well as of victory.
>
> The last idea is a motif of three chords first appearing very softly under the piccolo solo at the beginning of the piece, in flutes, clarinets and horns. Later it reappears at extremely strong dynamic levels, for example, in the middle of the Aria.
>
> Different techniques of composing as well as orchestrating have been used in Music for Prague 1968 and some new sounds explored, such as the percussion section in the Interlude, the ending of the work, etc.

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[3]Harry Schuartz, Pragues 200 Days; the Struggle for Democracy in Chechoslavakia (New York, 1969), pp. 71-240.

> Much symbolism also appears: in addition to the distress calls in the first movement (Fanfares), the unbroken hope of the Hussite song, sound of bells, or the tragedy (Aria), there is also the bird call at the beginning (piccolo solo), symbol of the liberty which the City of Prague has seen only for moments during its thousand years of existence.[4]

The work was commissioned by Kenneth Snapp for the Ithaca College Concert Band and was first performed by that organization on January 31, 1969, in Washington, D.C. for the Music Educators National Conference. The orchestral version was written in the summer of 1969 and first performed on January 31, 1970, with the composer conducting the Munich Philharmonic Orchestra.[5]

Definitions

1. Dimensions (small, middle, and large) of analysis indicate the amount of detail to be considered. If the emphasis is on minutia, the analysis is concerned with small dimensions, conversely large dimensions are concerned with the broader aspects of composition.

2. Movement refers to the progression of activity in musical sound to or from inactivity. Other measurements of Movement include the amount of stability or instability and tension or relaxation. Inactivity, stability, and relaxation all indicate a low degree of Movement, whereas activity, instability, and tension indicate a high degree of Movement.

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[4]Karel Husa, Music for Prague 1968, for Orchestra (New York, 1969), p. 2.

[5]Husa, "Notes," p. 2.

3. Cadences are the lower points in sound Movement.

4. Shape is the articulation of Movement as indicated by cadences. Words like phrase, period, and sonata allegro describe different sized Shapes. Jan LaRue defines Shape as ". . . the memory of Movement."[6]

5. Growth is the constant interaction of Shape and Movement and encompasses the maturing process of a composition from its beginning to the final decay.

6. Melody is that part of the mass of sound which has dynamic prominence and motivic significance. This definition includes the traditional single line melody, as well as chordal motives and non pitch oriented motives.

7. Chord tension is the feeling of movement generated by any vertical structure.

8. Tonality occurs when one tone takes precedence over the other tones. This tone may or may not be associated with a hierarchy of subordinate tones.

9. Events are happenings of any size. The attack of a note, a single pitch, a motive, or a complete composition--all are events.

10. Serialism is the systematic ordering of events by formula usually resulting in Movement which is static. The Movement will not be static if the internal functional possibilities of the serialized events are emphasized. For

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[6]Jan LaRue, Guidelines for Style Analysis (New York, 1970), p. 115.

example, a tone row can be constructed so as to emphasize a tonality, thereby creating a predisposition for each note and creating tonal Movement.

11. Rhythm is Movement generated by the frequency of change, or the frequency of appearance of any event.

Analytical Techniques

Many of the terms used, plus the basic procedure are taken from Jan LaRue's book, Guidelines for Style Analysis. The procedure consists of first discovering the "typology" of a parameter then relating that parameter to a larger consideration such as Shape. For example, a parameter such as melody is typed as being step-wise, angular, pointillistic, etc.. This typelogy is then put into perspective on a larger level. For example, a change of typology (angular to step-wise melody) may help to indicate a change in Shape or an increase in Movement.

Four parameters of sound (thematic development, chord tension, tonality, and rhythm) will be discussed as they relate to Growth, which will be separated into its separate parts, Shape and Movement. Following each discussion of a parameter, a graphic representation of its effect on Growth will be given similar to Figure 1.

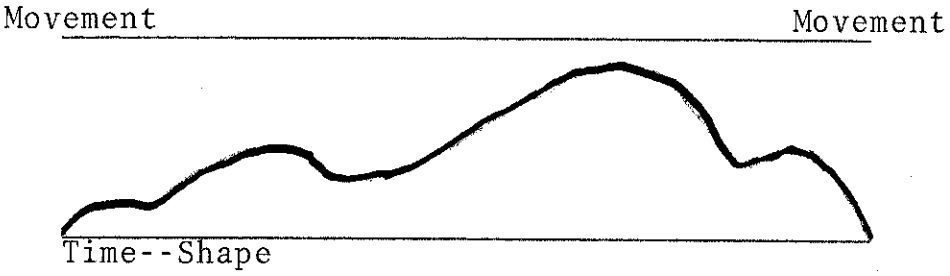

Fig. 1--Growth as a function of Movement and Shape

The vertical progression on the graph represents sound Movement, with greater amounts of Movement occuring at peaks and lesser Movement occuring at the valleys. The valleys are points of repose and affect the end of one Shape and the beginning of another Shape. The horizontal progression represents time, and the whole represents Growth.

The analysis of the "Introduction" to Music for Prague 1968 will be discussed in small dimensions, followed by a discussion of the whole work in middle to large dimensions, emphasizing the larger aspects of the composition.

CHAPTER II

SOUND PARAMETERS AND GROWTH

Thematic Development

The progression of one thematic area to another is Movement. In this composition all of the thematic material of importance is derived from the fifteenth century Hussite war song, Ye Warriors of God and His Law.[1]

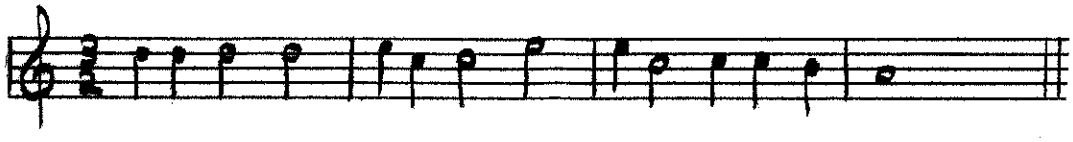

Fig. 2--Example of Ye Warriors of God and His Law

Throughout the composition these notes are manipulated in a myriad of ways including chromatic alteration, expansion of the intervals, retrograde, inversion, random and vertical ordering of the notes. Two tone rows are also used in the development of the thematic material. The thematic Movement starts with the uncertainty of these tone rows and progresses toward the more familiar ground represented by the Czech folk song.

Shape is helped by thematic development because different techniques of development produce different characteristics

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[1]Karel Husa, "Notes on Music for Prague 1968" (Ithaca, 1973), p. 2

for each section. For example, a chromatic version of a melody will differ in character from a modal version, and the difference helps to delineate sections.

Chord Tension

All of the movements in Music for Prague 1968, with the exception of the "Interlude" contain an accompaniment which can be described as vertical in nature. These accompanying chords consist of from one to ten pitches which are held for one or more measures and are derived from the melodic materials, making the notes D, E (flat), C (sharp), B flat, and A important as the basic building blocks for chord construction. Two other notes, F and G (flat), have significance because they are used as thirds to the chord roots, D and E flat, giving these chords a tertian feeling. The method of construction consists of starting with a major or minor second then adding a minor third up or a perfect fourth down, forming the basis for most of the chords found in the composition. A Typical three note structure might consist of D, E, and F or D, C sharp, and A.

Because of the extreme individuality of chord construction plus the lack of a viable system for analysis extant, it is necessary to devise a system for chord tension analysis tailored for this composition. This system consists of six categories, with category I containing the least amount and category VI containing the most amount of harmonic

tension and an even amount of increase or decrease from one category to the next. The amount of tension found in each category is based on the number of pitches plus the number of minor second (major seventh) intervals found in each vertical structure. The use of the dissonant minor second interval as a guideline is justified in that most of the chords in Music for Prague 1968 have at least one minor second relationship, and the chords seem to be derived from melodic elements which consist of adjacent chromatic tones. The following table illustrates the system of analysis of chord tension used in this thesis.

TABLE I

HARMONIC TENSION CATEGORIES

Categories	Number of pitches	Number of minor second relationships
I	Two to four	None
II	Two to five	One
III	Four to six	Two
IV	Five to seven	Three
V	Six to eight	Four to five
VI	Seven to ten	Six to nine

Chord tension effects both Movement and Shape. Greater amounts of tension, as represented by the larger numbered

categories, increase movement. Points of relative repose, as represented by the lower numbered categories, are dips in movement and help to delineate shape.

Tonality

Tonal centers can be found throughout the composition, and many atonal techniques are used in conjunction with the tonal hierarchy. For example, in the "Aria" a twelve-tone ostinato is used throughout as the accompanyment to a tonal melody. In discovering tonal implication, Hindemith's method of melodic analysis and chord root analysis is used.[2] The chord roots and the main notes of the melody are found and related to a tonal center, using the hierarchy of pitches established in the composition instead of Hindemith's "Series 1." In discovering the chord roots, Hindemith's "Series 2" listing the harmonic force and implied roots of intervals is of great help. This together with the tonal order found in the composition helps to realize a fairly accurate picture of roots, root movement, and tonal implication.

The tonal hierarchy in Music for Prague 1968 is derived from the Hussite song, Ye Warriers of God and His Law (see example 1 on page 6). D is the key center, and E is used as a standard supertonic, or when flatted functions as an upper leading tone gravitating toward D. The C (natural

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[2]Paul Hindemith, Craft of Musical Composition (New York, 1945), pp. 156-164.

or sharp) functions as a standard leading tone. The B is flatted most of the time and functions as a preparation for the dominant. G is absent from the Hussite song, but appears in the composition in a standard subdominant role and allies itself in a third relationship with B flat as a preparation for the Dominant. The last note of the Hussite song, A, assumes importance in a dominant role as the piece progresses toward the end.

An increase in the feeling of Movement is felt when a key center is left, and the further removed from that center, the greater the effect is on Movement. In this composition the supertonic and leading tone are closest to the key center, with the subdominant and the submediant representing greater Movement and the dominant creating the greatest amount of Movement. This order follows the order of pitches found in the Hussite song--D, E, C, B, and A.

Shape is influenced by tonal Movement in that a new structure might be punctuated by a change in tonal emphasis. Also, several structures representing a standard progression such as tonic--subdominant--dominant--tonic might indicate a binding of these into a larger structure.

Rhythm

Rhythm is an integral part of every parameter and plays an important part in generating Movement. An increase in the frequency of change or appearance of any rhythm will

increase the feeling of Movement. The texture of the rhythms also effects Movement, in that a smooth rhythm generates less Movement than a syncopated or agitated rhythm.

Rhythm is significant in determining Shape, in that the beginnings and endings of structural points are characterized by a smaller amount of Movement and, or, an abrupt change in rhythmic activity. The characteristic cadence in Music for Prague 1968 comes to a point of repose, with an increase in Movement at the beginning of the next structure.

CHAPTER III

"INTRODUCTION" TO MUSIC FOR PRAGUE 1968

Thematic Development

There are three significant melodies in the "Introduction" to Music for Prague 1968 which serve as vehicles for thematic development. These are the timpani ostinato, the main melody, and the chorale-like motif.

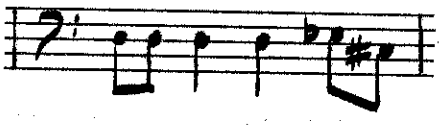

Fig. 3--Timpani ostinato, measure 24 of "Introduction"

The timpani ostinato is a chromatic alteration of the first six notes of the Czech folk song and consists of three adjacent chromatic tones which are repeated six times in several rhythmic configurations throughout the "Introduction." There is no thematic development in the ostinato, with the possible exception of the last statement in which a C sharp is replaced by a C natural. This pitch change produces a little Movement after letter B in a voice that is otherwise static.

The main melody is disjunct and changes greatly in character from its atonal beginnings to the short modal section at

the end. The first part of the main melody is constructed around the following tone row.[1]

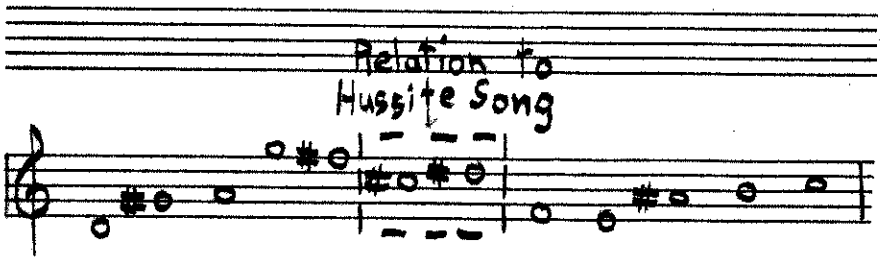

Fig. 4--Tone row used in the "Introduction"

The C sharp and D sharp are the chromatically altered tones which surround D and form the basis for the chromatic development of the first three pitches from Ye Warriors of God and His Law, D, E, and C. The following example is taken from the first part of the main melody and uses the row from the example above as a basis for construction.

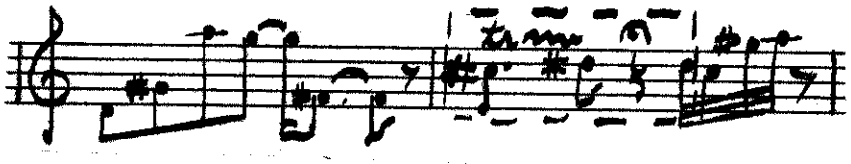

Fig. 5--Main melody, first section, measures 5 and 6 of "Introduction."

The row is followed exactly in the melody above for the first seven pitches, and the eighth pitch deviates replacing the F from the row with D. The D is a resolution of the C sharp and D sharp giving the main melody its first reference

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[1]Karel Husa, "Notes on Music for Prague 1968" (Ithaca, 1973), p. 7.

to the thematic germ of the composition, Ye Warriers of God and His Law. This free interpretation of the row is continued during the middle part of the main melody and is illustrated in the example below.

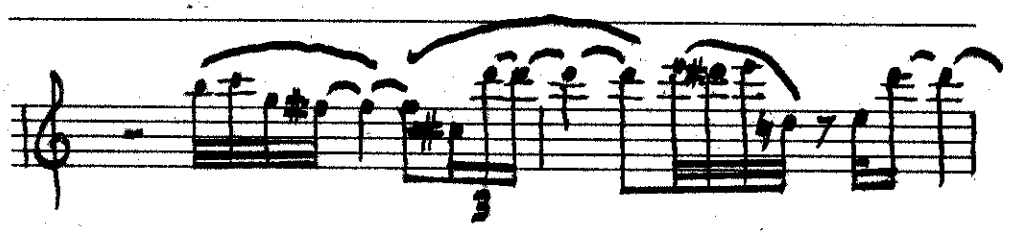


Fig. 6--Main melody, middle section, measures 16 and 17 of "Introduction."

The example above is closer to the thematic germ, with an emphasis on D and its thematic partners E (flat) and C (sharp). The section ends on a cadence which emphasizes D, C sharp, and F. The introduction of F as a note of importance gives a minor character to the D tonality. F is not in the Hussite song. But as a minor third up from D, the F is derived from the minor third down formed by the D and B in the song.

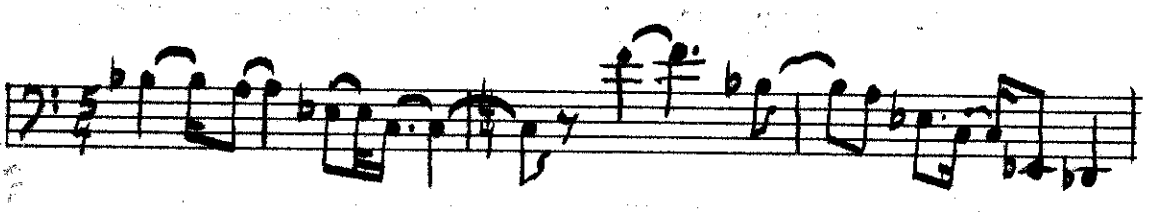


Fig. 7--Main melody, closing section, measures 31-33 of "Introduction."

Figure number seven is taken from the ending part of the main melody and shows further development within a mode which is similar to that in the Hussite song. Also, the two notes from the song, B (flat) and A, which have been neglected become thematically important. This last part is very different from the beginning of the main melody and is the closest in character to the Hussite song.

The Movement generated by the main melody is very strong moving from a vague reference of the thematic germ in the beginning to a close reference at the end. The following is a graphic illustration of the Movement.

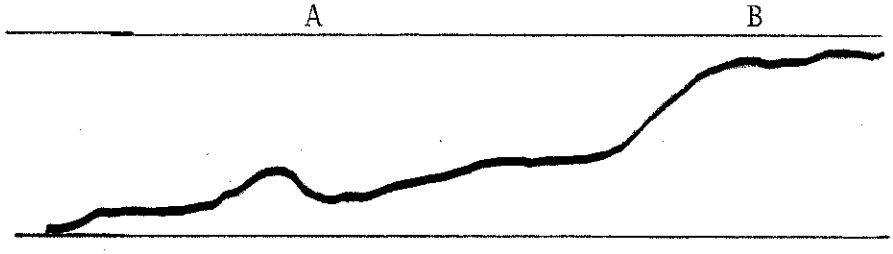


Fig. 8--Movement generated by main melody during the "Introduction."

The chorale-like motif is a three chord statement, in which each voice moves by step up or down and returns to its original pitch. This motif is used throughout the entire composition with four statements contained in the "Introduction." The first statement is the only deviation from the stepwise movement described above. The following example clearly shows the typical voice movement for the motif.

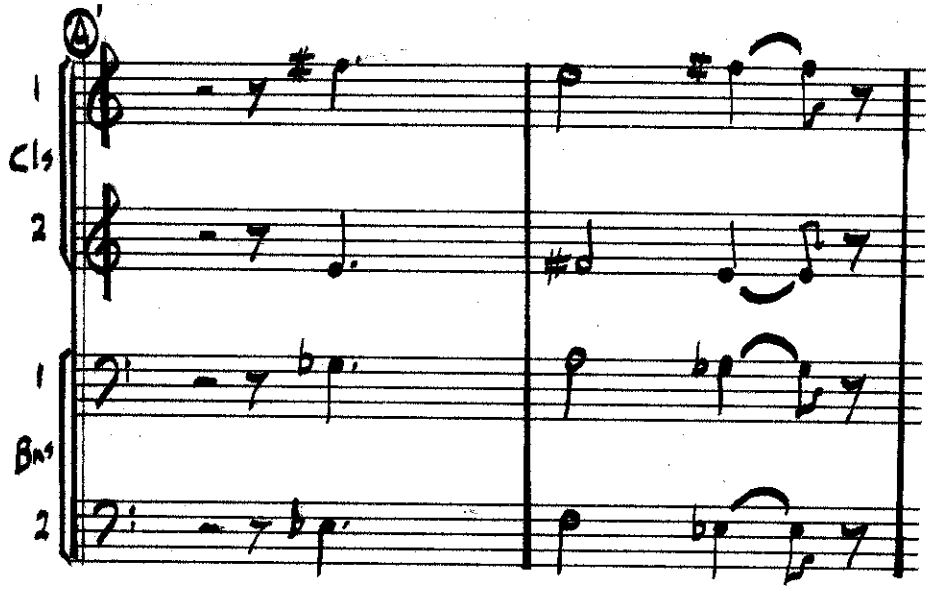


Fig. 9--Chorale-like motif (second statement), measures 15-16 of "Introduction."

The chorale-like motif produces Movement thematically through a vertical development of the intervals formed by the notes of the Hussite song as they relate to the tonal center, D. The first interval in the song is a major second up (D to E). The second is a major second down (D to C). The third is a minor third down (D to B), and the last is a perfect fourth down (D to A). In the motif the major second intervals are usually changed to minor seconds by a chromatic alteration of the C to C sharp and the E to E flat. The minor third down is either changed to a major third down by a chromatic alteration of the B to B flat, or is inverted forming a minor third up. The perfect fourth is used unaltered or in inversion as a perfect fourth up.

The first chord in Figure 9 contains the following pitches, E flat, E, D, and G flat. The first three notes of this chord are a transposition of the first three notes in the Hussite song, with E flat being the tonal center surrounded by its upper and lower neighbors, E (F flat) and D. The G flat is a minor third up from the E flat (melodic inversion of the minor third down from the song) and turns the structure into a tertian ninth chord with E flat as the root. The second chord is also a ninth chord, except that it is based on a D minor triad and does not contain a seventh. It is also melodically derived because three of its pitches, D, E, and A, are in the Hussite song, and the F from the chord replaces B from the song as its melodic inversion. The third chord in the motif is a repetition of the first chord.

The four statements of the motif in the "Introduction" occur three measures from the beginning, at letter A, seven measures after letter A, and at letter B. The chords of the first statement are seventh chords and are constructed from melodic elements. The chords of the second statement are the ninth chords described above and form the basis for the eleventh chords of the third statement. The eleventh chords are formed by adding A flat to the E flat ninth chord and G to the D minor ninth chord. The interval added in both cases is a perfect fourth up which is the melodic inversion of the last interval of the Hussite song. The chords of the

fourth statement use the same type of structure as the third statement with an added major seventh and different roots, B flat and C. These chords now contain the raised leading tone (added major seventh) in addition to the lowered leading tone from the song. The addition of the chromatically raised leading tone, rather than the thirteenth, to the eleventh chords of the previous statement emphasizes the dual nature of construction (melodic plus tertian principals) of the vertical materials in this composition. The vertical development of the melodic materials contained in the chorale-like motif produces movement from the less complex chords of the first statement to the very complex chords of the last statement. This Movement is illustrated in the following graph.

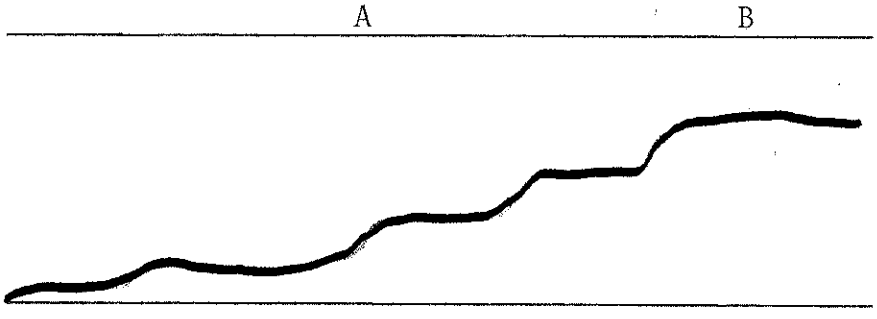


Fig. 10--Movement generated by the Chorale-like motif through thematic development.

The three melodic elements of the "Introduction," ostinato, chorale-like motif, and main melody work in conjunction with each other producing an over-all effect on thematic development and its effect on Movement. The ostinato produces little or no Movement and functions as the foundation

giving continuity to the "Introduction." The chorale-like motif contributes a steady yet mild increase in tension from the beginning to letter B and gives the thematic development some continuity. The main melody is very different from beginning to end producing a great amount of Movement and very little continuity. The combined effect of the three melodic elements is a steady rise in tension from the beginning to end, with most of the Movement occuring between letters A and B, as represented in the following graph.

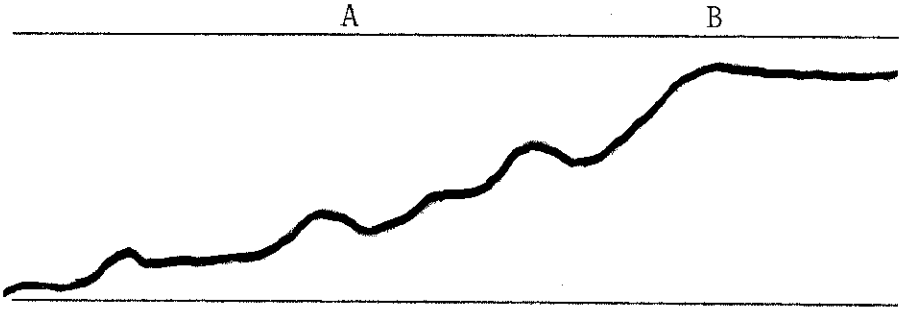


Fig. 11--Movement generated by thematic development in the "Introduction."

In terms of thematic development, the only shape discernible is a three part shape consisting of the flat area at the beginning (introduction to the "Introduction"), the large middle part (development), and the slowly rising area before and after letter B (transition to the "Fanfare"). The ostinato does not contribute to this shape with the exception of the one slight change after letter B giving extra character to the transition. The first statement of the chorale-like motif is the only deviation from the stepwise

voice movement of the following statements and helps to separate the introductory phrase from the middle section. The last three statements of the chorale-like motif are similar in character and place the middle section after the first phrase continuing through letter B. The main melody reinforces the three part Shape with great contrast in thematic treatment for each section. The introductory phrase of the main melody is strictly based on a tone row. The development section starts during the second phrase where the tone row becomes less important and is left during the third phrase for a tonal chromatic treatment of the thematic material. The main melody signals the transition at letter B with a modal reference to Ye Warriors of God and His Law. This three part Shape is diagramed below.

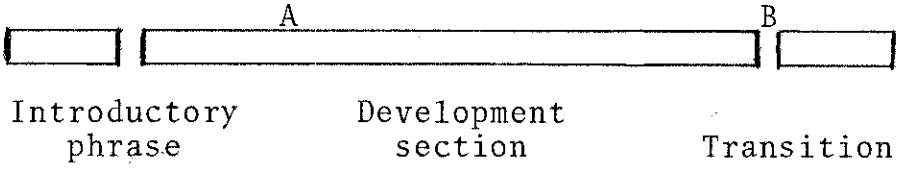


Fig. 12--Shape of "Introduction" as determined by thematic development.

Chord Tension

The method of construction used for the chorale-like motif is basic to chord construction for the entire composition and is described in detail in this chapter in the discussion of the chorale-like motif as a melodic element on pages 17 and 18. The process described is a combination of

tertian and melodic principles. Further discussion of chord construction is found on page 8 in Chapter II of this paper.

In that discussion a system of chord tension analysis is presented. This system is derived from the four statements of the chorale-like motif found in the "Introduction." These four statements make an ideal model for tension classification, because the range of complexity is compatable with the entire composition, and the intended tension Movement is easy to follow. As illustrated in the follow table, the tension Movement increases smoothly from statement to statement, and each statement has the same characteristic Movement from chord to chord, tension--relaxation--tension.

TABLE II

TENSION CLASSIFICATION OF THE CHORDS OF THE CHORALE-LIKE MOTIF

	Verticle sonorities			
	First statement	Second statement	Third statement	Fourth statement
Horizontal voice Movement	A^{b} D^{b} F A G^{b} A D E^{b} A	E D E D E D G^{b} A G^{b} E^{b} F E^{b}	E D E D E D A^{b} G A^{b} G^{b} A G^{b} E^{b} F E^{b}	B A B A B A E^{b} D^{b} E^{b} C B^{b} C D^{b} E D^{b} B^{b} C B^{b}
Tension Categories	II I II	III II III	V IV V	VI V VI

Each tension category is determined by counting the number of minor second relationships and the number of pitches in each chord and relating this data to the chord tension chart on page eight. In Table II the first and third chords of the first statement have one minor second relationship per chord, A to A flat in the first, and F to E in the third chord, while the middle chord contains no minor second relationships. All three chords contain three pitches per chord. Looking back at the chord tension chart, the first and third chords fit category II, and the Middle chord fits category I. In terms of categories, the range of tension for the four statements spans the whole spectrum going from the simplicity of category I in the beinning to the extreme complexity of cateogy VI toward the end. Within each statement the Movement is very small, with the middle chord of every statement only one category less in tension than the outer chords.

The sonorities found between the four statements of the chorale-like motif are constructed in a similar manner and range in complexity from this interval:

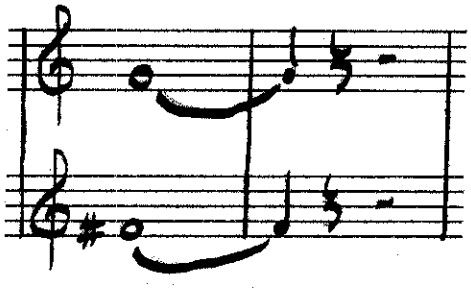


Fig. 13--Intervalic vertical accompaniment, measure 7 of "Introduction."

to this cluster found four measures after letter B.

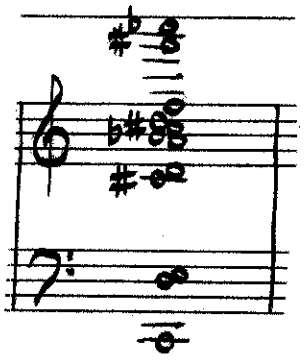


Figure 14--Piano reduction of nine pitch cluster, measure 32 of "Introduction."

These chords are used only as accompaniment, whereas the chorale-like motif has melodic significance. Both contribute to a continuity of chord tension with the accompaniment chords functioning as the connection between each statement of the chorale-like motif. The following graph summarizes the effect of both types of chords on tension Movement:

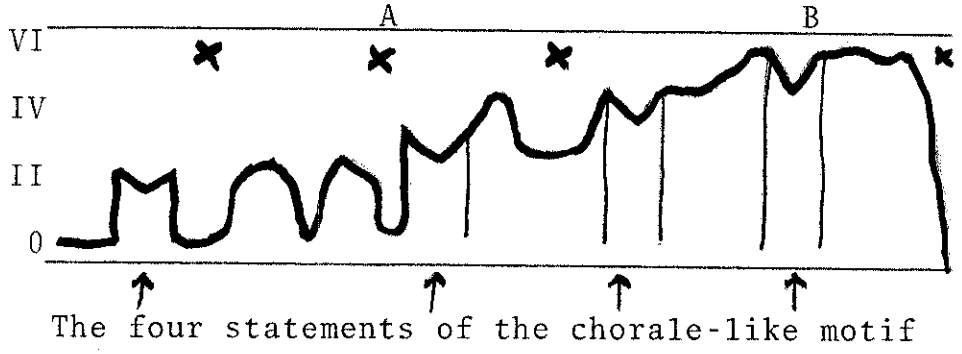


Fig. 15--Movement generated by cord tension in the "Introduction."

The Movement described above ranges from zero to very high levels of tension, categories V and VI. This curve is very similar to the curve for tension produced by melodic

development, in that both start at a low level and move to the climax at letter B.

At first glance, a three-part Shape appears with the first part staying at lower levels of tension, followed by a rising level of tension for the middle part, and ending on very tense chords for the third part at letter B. These sections can be further broken down, if the relaxation of tension indicating the end of a Shape followed by an increase in tension indicating the beginning of a new Shape is taken into account. These are cadences and can be seen as dips in Movement in the graph above. Significant dips are marked with X's. The first X indicates a cadence separating an introductory phrase from phrases two and three. The second X marks the separation between phrases three and four. The third X indicates a cadence separting phrases four and five. Finally, the fourth X indicates a very strong cadence separating the "Introduction" and the "Fanfare." The three part form is more complex now and is illustrated in the following figure.

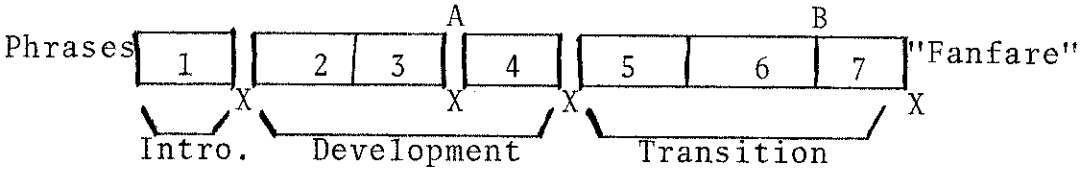


Fig. 16--Form of the "Introduction" as indicated by chord tension Movement.

Tonality

The main melody starts with a tone row cadencing on G at measure four. The second phrase begins at measure six with a free interpretation of the row and cadences on E flat in measure eight. The third phrase continues with a very free interpretation of the row ending with a strong cadence centering around D at letter A. From letter A through letter B, the melody continues to be chromatic with three cadences all centering on D. One measure after letter B, the main melody changes to an E flat lydian feeling.

The roots of the chords found in the chorale-like motif are as follows: D, E flat, and F (first statement); E flat, D, and E flat (second statement); E flat, D, and E flat (third statement); and B flat, C, and B flat (fourth statement). The first statement emphasizes D and F with a continuation of the F tonal emphasis in the accompanying chords through measure eight and changing to an E emphasis in measure nine. In measure ten a change in tonality is made to C, changing to C sharp in measure twelve, and going back to C natural at measure fourteen. One measure later at letter A, the second statement changes the chordal emphasis to E flat which is continued by the accompanying chords and the third statement. At letter B, the fourth statement changes the tonal emphasis to B flat with a resolution to D in the accompanying chords four measures later.

The ostinato emphasizes D during the first phrase, moves to C sharp for the second phrase, and resolves back to D

for the third phrase. From letter A to letter B, the tonal emphasis in on D with a short digression to D flat and C sharp, resolving back to D just before letter B. At letter B there is a change to E flat and C sharp, resolving to D two measures before the "Fanfare."

The tonality described above is highly chromatic, however a D natural minor scale with the D and the E being chromatically altered toward D in a majority of cases depending on the direction of movement emerges as the tonal basis for the "Introduction." The E flat, because of its usage, its attraction toward D, and the absence of the dominant pitch, A, will be considered as dominant in function for the "Introduction." The leading tone, C sharp, works in close conjunction with the E flat and is also dominant in function. Vertically, the E flat and C sharp combine with G flat and B flat forming and E flat minor-minor seventh chord which is considered the dominant chord of the "Introduction." The tonic chord is also a minor-minor seventh chord based on D. The subdominant, G, receives very little attention with the exception of the first and sixth phrases of the main melody. The B flat chords of the fourth statement of the chorale-like motif are considered as secondary dominants to the dominant, E flat, or can be considered as subdominant in function, because of the third relationship to G.

The main areas of tonal emphasis are summarized in the following table.:

TABLE III

TONAL MOVEMENT OF THE CHORDAL AND MELODIC ELEMENTS OF THE "INTRODUCTION"

	"Introduction"										"Fanfare"	
	A							B				
Main melody	G		Eb		D				Eb	C#	D	
Chorale-like motif and accompanying chords	D					Eb			Bb			
			F	Eb	C C#		Eb			D(b)		
Ostinato	D	C#			D			Eb C#D	Eb C#	D		

In the table above, it can be seen, that the writing is predominantly bitonal. The first phrase of the main melody is subdominant against tonic in the other voices. The second phrase utilizes dominant in the melodic voices against tonic in the chords. From the phrase before letter A to the phrase before letter B, the two melodic voices are based around the tonic while the chords are based on the dominant. There is only one point which can be said to be tritonal, that being at and two measures on either side of letter B where the three functions, tonic, dominant, and subdominant are all vertically present. The last phrase places dominant against tonic.

The total movement is from a predominantly tonic feeling in the beginning to a predominantly dominant feeling at the

climax after letter B. The main melody is the only voice that does not start in tonic. Although the first two phrases revolve around subdominant and dominant, the references to tonic are abundant, and on the third phrase the main melody settles on the tonic and remains there until two measures before letter B. At this point the main melody shifts to the subdominant anticipating the dominant tonality of the last phrase. With the exception of the second phrase, the ostinato emphasizes the tonic until just before letter B where the dominant becomes important. The chords start in tonic and move to dominant very early (measure nine). At letter B the chord line moves to the submediant providing continued contrast to the dominant tonalities in the other voices. The accompanying chords finally move to a chord which emphasizes both tonic and dominant. The finale chord is made up of many D's, while the notes of the dominant, E flat, C sharp, and A play an important role in this structure. The dual tonality of this chord is extremely appropriate considering the bitonal characteristics of the "Introduction" and the cadential plus transitional functions of the final phrase of the "Introduction." Each voice starts basically in tonic and one at a time moves to the dominant effecting a steady rise in tension level all the way to letter B, as illustrated in the following figure.

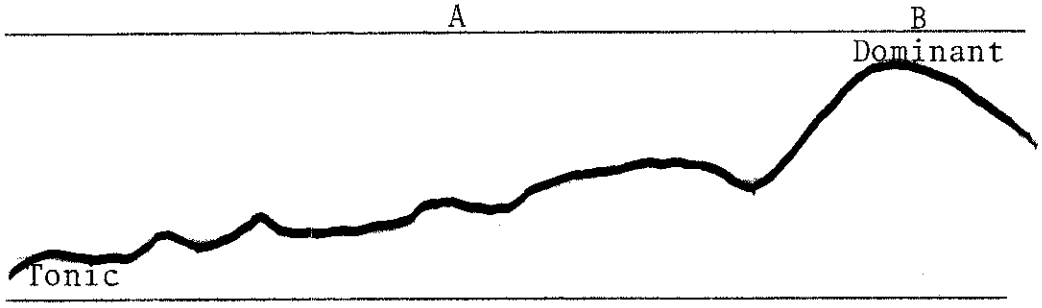


Fig. 17--The combined effect of tonalities on Movement in the "Introduction."

The Movement of tonalities is basically bitonal, with three voices, main melody, chords, and ostinato contributing to the overall tonal feeling of each phrase. In determining Shape, the tonality of each phrase will be the combined tonal feeling of the three separate voices, resulting in the following tonal emphasis for the seven phrases of the "Introduction." The first three phrases are bound by a tonic-dominant-tonic tonal Movement. The next two phrases are bound by a common emphasis on the tonic. The sixth phrase is tritonal, marking a departure from the basically tonic feeling of the previous section and anticipating the dominant feeling of the last phrase. These last two phrases can be combined as the transitional portion of the "Introduction." The Shape for the "Introduction" is made clearer by the Movement of tonality and is illustrated in the following figure.

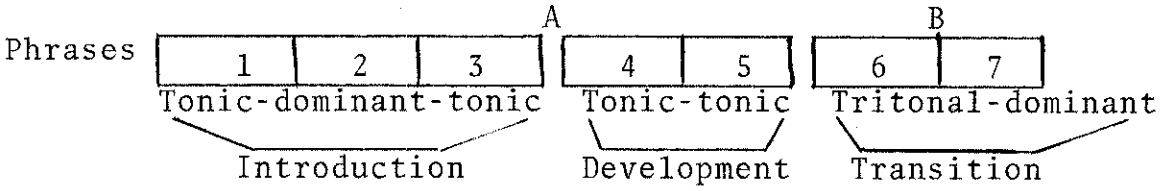


Fig. 18--Shape as influenced by tonality for the "Introduction."

Rhythm

The tempo marking for the "Introduction" is Adagio (♩=ca. 52).

The main melody is highly varied in rhythmic activity. The complexity ranges from relatively straight rhythms in the beginning to highly syncopated rhythms, with durations ranging from whole notes to thirty second notes. Cadences in the main melody are marked by a slowing of rhythmic Movement, using several devices including longer note values, rests, a comma, a tie over the bar line, and a long tonal emphasis on one note.

Rhythmic tension is also produced by an extension of phrase cadences causing an overlap of phrases. As illustrated in the following figure, the fifth phrase has an extended cadence causing two-part counterpoint with the sixth phrase.

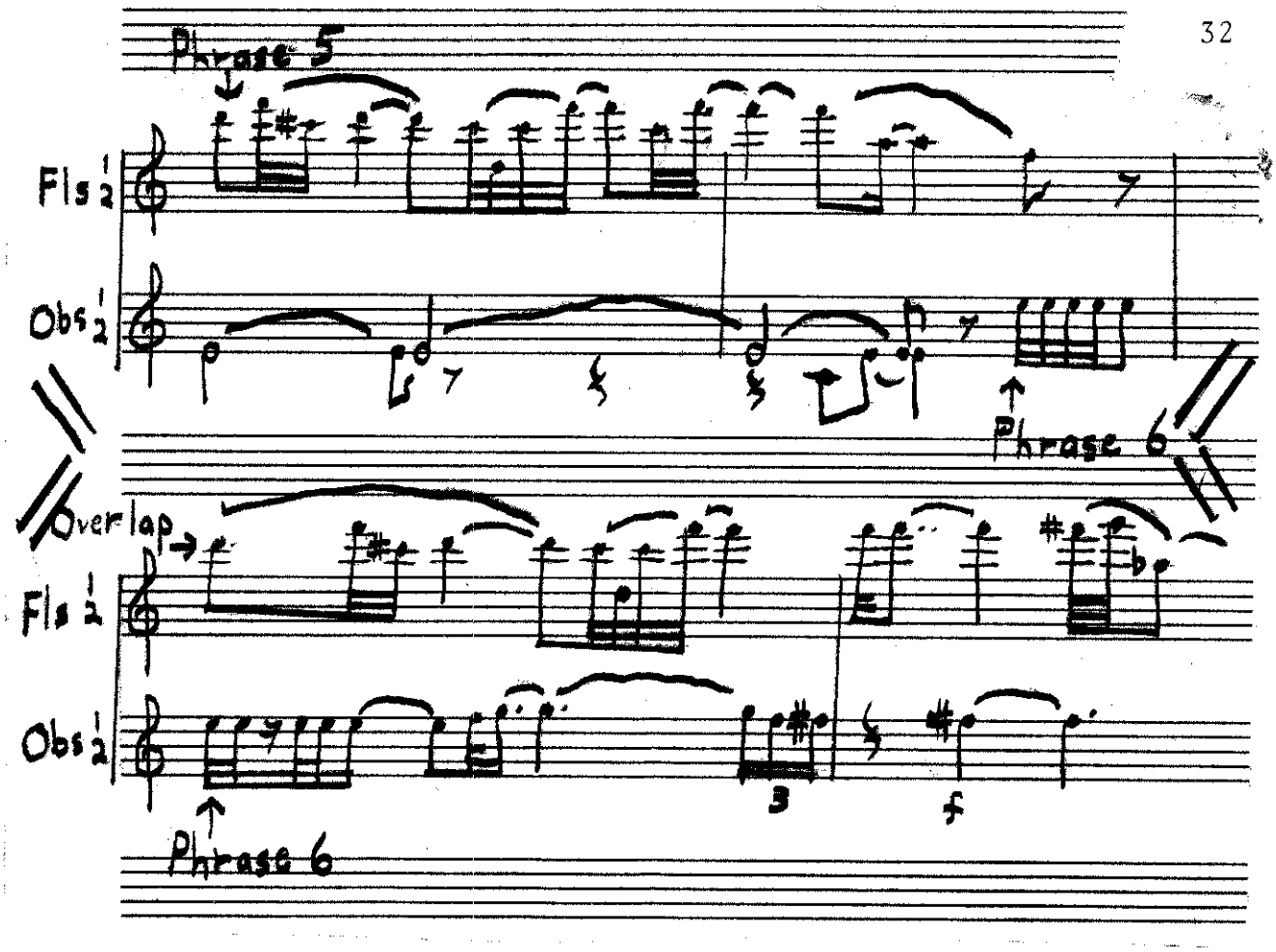


Fig. 19--Overlapping section of main melody, measures 25-28 of "Introduction."

This extension lasts through the sixth and two measures into the seventh phrase. The cadential notes for the sixth phrase continue throughout the seventh phrase causing three-part counterpoint for the first two measures and two-part counterpoint for the remaining three measures of the seventh phrase.

Each statement of the chorale-like motif consists of a dotted quarter or half note value for the first chord, moving to a longer value ranging in length from a half note to a whole note for the second chord, and ending with the longest note value for the third chord. The last chord of each statement is extended using either a fermata (first statement),

or an immediate repetition of the last chord forming the accompanying chord for the following section (second and fourth statements), or holding the notes over as accompaniment (third statement). The four statements have a similar rhythm giving the motif identification. The rhythmic placement of each statement in between phrases of the main melody helps to identify cadences and gives the motif a counter melody function.

The accompanying chords make their entrance during the second phrase at the beginning of the seventh measure and consists mainly of long note values of four or more counts. There is a comma in measure nine helping the separation of phrases two and three. From measure nine until the "Fanfare" the chords are sustained continuously by overlapping the entrances of long sustained notes. In two places, these chordal notes thin out to only one note. These one note accompaniments are considered as part of the chordal background. The accompanying chords lack rhythmic pulse, contribute very little to Shape or Movement, but do provide continuity.

The notes of the ostinato consist mainly of quarter and eighth note values which are not syncopated and tend to emphasize the meter with entrances at the beginning of measures. The almost exclusive use of only two durational value ( and ) produces rhythmic continuity, while the frequency of appearance of the motive is a significant catalyst for Movement.

The rhythmic placement of the ostinato helps to determine its function. If a statement of the figure occurs between phrases, it helps to determine Shape. If a statement occurs during a phrase, it is counterpoint; this happens in all but the third phrase. The ostinato initiates and ends the first phrase giving the phrase definition, and the first entrance occurs while the orchestra rests giving the statement melodic status. The second phrase exhibits the ostinato as a purely accompanying device, the only occasion where one pitch is sustained on a long roll. From the second cadence to the end of the "Introduction," the ostinato serves as a counter melody and helps to identify the second, third, fifth, and sixth cadences.

The total Movement generated by rhythms coincides with that generated by tonality and chord tension, which is a slow rise from a tranquil beginning to a strong climax at letter B. The accompanying chords do not rhythmically contribute Movement to the climax, because their entrances are random and the durations remain basically the same throughout the "Introduction." The main melody contributes more to rhythmic Movement than any other voice. It starts slowly and increases Movement phrase by phrase until letter A where the Movement stops for three and one half measures. It then resumes and greatly increases to letter B, thereafter diminishing in intensity. The note values of the chorale-like motif and

the ostinato do not change; however Movement is affected by an increase in the frequency of appearance of each motif as the climax approaches. For example, there is only one appearance of the chorale-like motif during the first half of the "Introduction," with the remaining three appearances occuring after letter A.

The following graphs show the separate curves for rhythmic Movement as generated by the (1) main melody, (2) chorale-like motif, (3) ostinato, (4) accompanying chords, and (5) combination of (1), (2), (3), and (4):

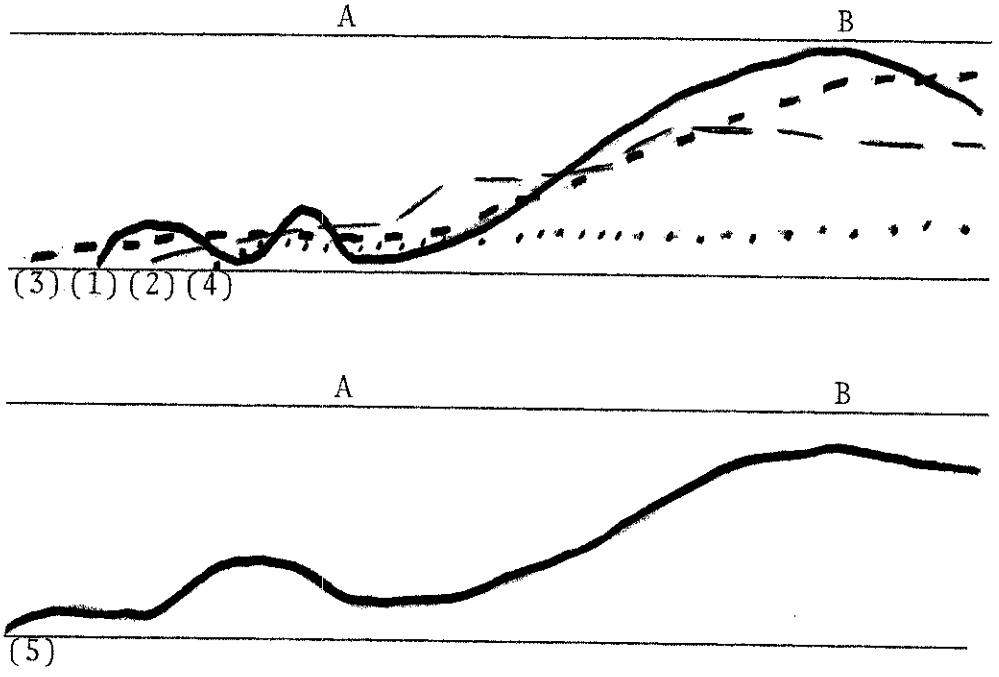


Fig. 20--Movement generated by rhythms in the "Introduction."

The following table lists the rhythmic characteristics of the seven phrase cadences for the "Introduction." The top horizontal line lists the seven cadences. The second line is a listing of the length of each cadence in metric counts from its beginning in the main melody to the start of the next phrase. The length of the extension of the fifth and sixth cadences is listed in measures. Some cadences receive added emphasis, because of the placement of the chorale-like motif or the ostinato, and are marked with asterisks. The placement, beginning, middle, or end of the ostinato during a cadence is also listed. Sometimes the ostinato makes an appearance at the beginning and the end of a cadence giving added strength to the cadence.

TABLE IV

RHYTHMIC CHARACTERISTICS OF THE CADENCES FOR THE "INTRODUCTION"

	A				B		
	first	second	third	fourth	fifth	sixth	seventh
Main melody, length in counts	9	6	18	6	10 (5 bars)	3 (5 bars) extensions	5
Chorale-like motif, placement	***		***	***	Cadence for "Introduction" ***		
Ostinato, placement beginning			*		*		
middle		*					
end	*		*		*	*	

The strongest cadence from the table preceding is the combination of the fifth, sixth, and seventh phrase cadences into one very long polyphonic cadence and is the cadence for the entire "Introduction." Movement is very strong and transforms this cadence into a type of half cadence functioning as the transition to the "Fanfare."

One of the strongest individual phrase cadences is the third. It contains the most counts in the main melody and uses the chorale-like motif and the ostinato as further punctuation. The third cadence is illustrated in Figure 21. The total length of the cadence is eighteen and one half counts. The first two measures have a tonal emphasis in the main melody on D and its chordal partner, F, ending the third phrase on a whole note F. The melodic figure used to start this cadence, F--C sharp--D, is also used to start the fifth cadence, and the extension of the fifth cadence is a variation on this figure. At the whole note ending the third phrase, the Movement stops in the main melody and is taken up by an entrance of the ostinato followed by a statement of the chorale-like motif and three notes from the ostinato. The start of the fourth phrase in the main melody ends the cadence. The ostinato and chorale-like motif provide thematic contrast between the phrases giving the cadence further separating strength plus maintaining a certain amount of Movement.

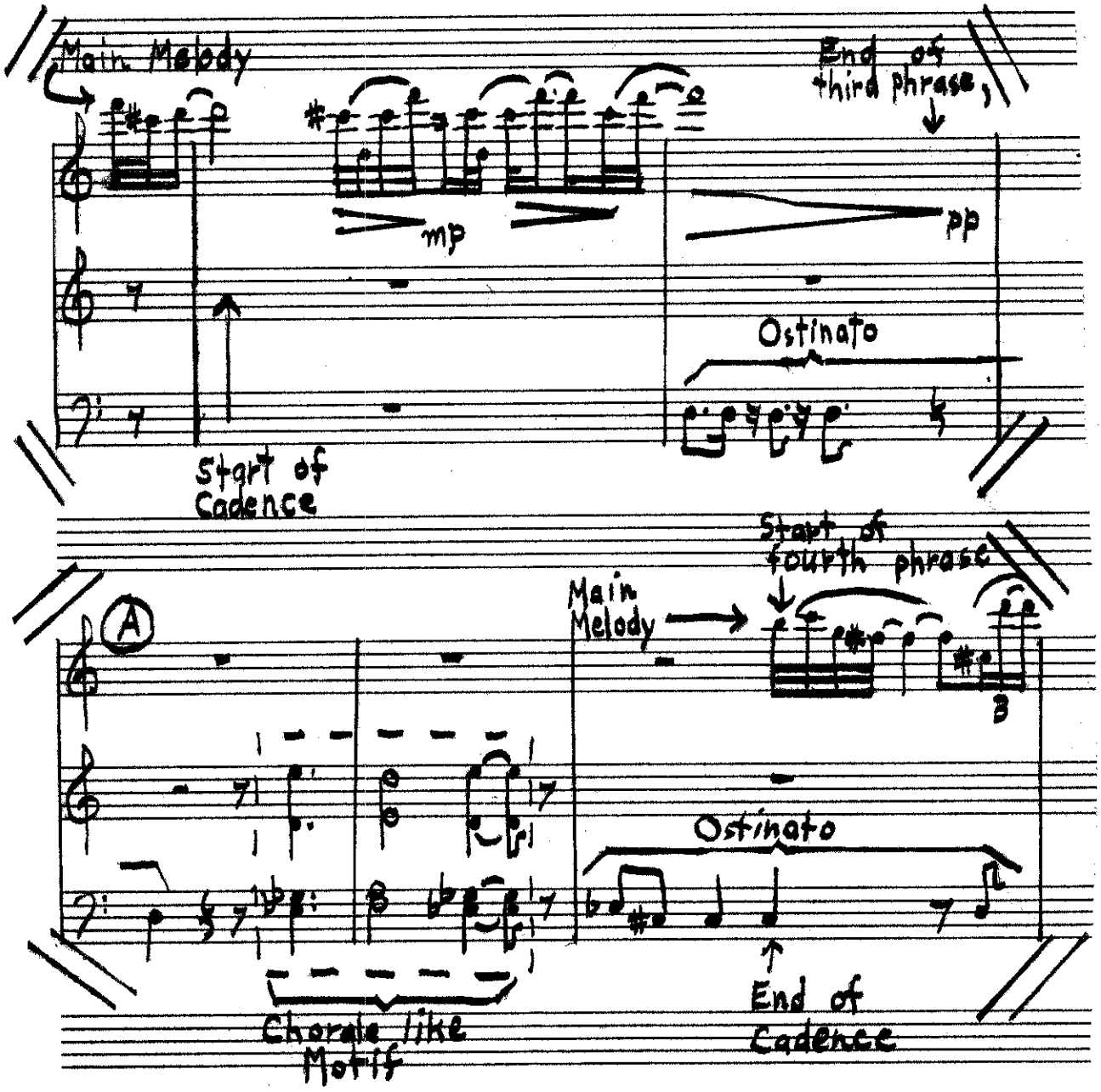


Fig. 21--Piano reduction of third phrase cadence, measures 12-15 of "Introduction."

The relative strength of each cadence is a strong indication of Shape and provides greater definition than any other parameter. The first cadence is strong enough to separate the first phrase as the introductory phrase for the whole "Introduction." The second cadence is weak followed by a strong third cadence indicating a periodic structure for the second and third phrases. The fourth cadence is weak followed by a strong fifth cadence indicating a periodic structure for phrases four and five. The cadence for the sixth phrase is weak because of its shortness and gives the sixth and seventh phrases periodic status. The seventh cadence is short and keeps the Movement going for a smooth transition to the "Fanfare." The Shape as determined by the rhythmic Movement within each cadence is as follows.

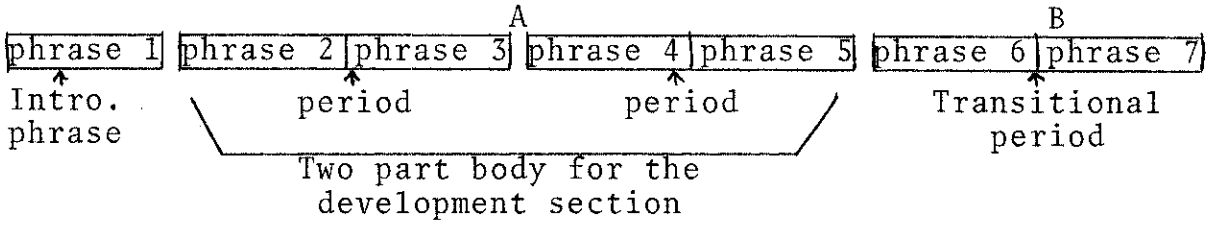


Fig. 22--Shape for the "Introduction" as determined by rhythms.

In conclusion, four parameters of sound composition (thematic development, chord tension, tonality, and rhythm) are discussed as they affect Growth in the "Introduction" to Music for Prague 1968. Growth is separated into its components,

Movement and Shape, and a graphic illustration of Movement plus a diagram of Shape is given as related to the contribution of each parameter.

In reviewing each graph of Movement it is observed that each parameter contributes to Movement in the same general way with slight individual differences. Each parameter starts with a slow leisurely rise in tension gaining momentum as the climax at letter B approaches. After the climax, tonality and rhythm effect a slight decrease, while thematic development continues to increase, and chord tension decreases greatly. It can then be said that all the parameters discussed are united in Movement toward a common goal, which is the climax reached two measures before and sustained two measures past letter B.

The diagrams of Shape present an added problem in that none are alike. However, they have similarities which are the indications of the total feeling of Shape. To make this total feeling clearer, the four diagrams of Shape for the "Introduction" are listed together in Figure 23.

The first phrase is clearly set off in all parameters except tonality as the introductory section of the "Introduction." Phrases two and three form a periodic structure which could be part of the introductory section or part of the development section. Tonality places this period in the introduction, while thematic development places it with the development.

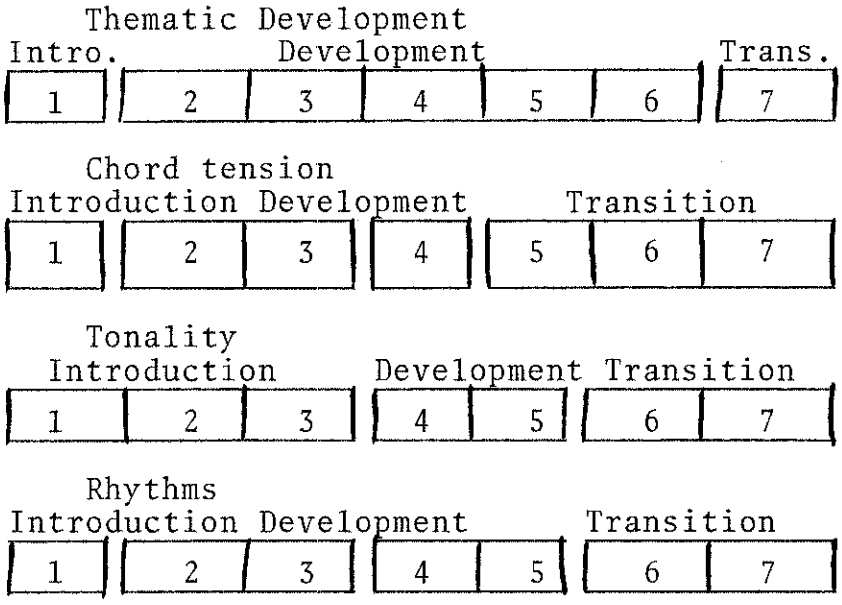


Fig. 23--The four diagrams of Shape for the "Introduction" as effected by thematic development, chord tension, tonality, and rhythms.

Because of the importance of thematic development in this composition and the traditional superior length of development over introduction, this period is placed with the development section. Tonality and rhythms both place phrases four and five in a periodic structure which is the second part of the development section and forms a double period with the previous period. The exact delineation of the development and the transition is clouded by thematic development and chord tension. Thematic development places the beginning of the transition at phrase seven, while chord tension places the transition from phrase five. However, tonality and rhythms form a majority placing the beginning of the transition at phrase six. The resulting total feeling for Shape for the "Introduction" is illustrated in Figure 24.

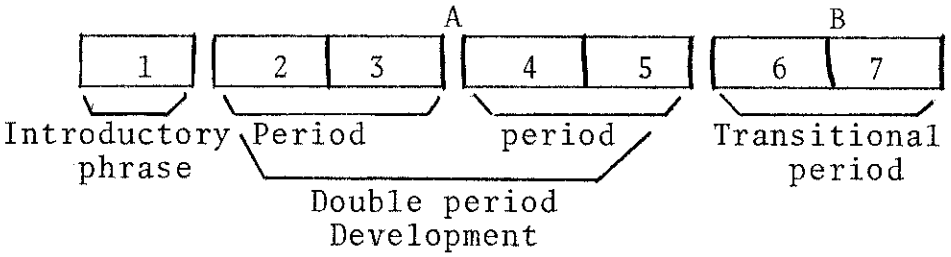


Fig. 24--The total feeling for the Shape of the "Introduction" as a combination of the parameters discussed.

CHAPTER IV

OVERALL COMPOSITION

Thematic Development

The Hussite song (Figure 1, p. 6) is the thematic germ for the entire composition. The use of the intervals found in the song for thematic development is described in detail in the previous chapter. The intervals are chromatically altered, inverted, used in different orders, and placed vertically for chord formation. These are the tools of development used throughout the composition.

The main theme of the "Fanfare" uses the D, E, C, and B from the song melodically and harmonically. The E and B are flatted, and the D is flatted when used as a passing tone resolving downward. Figure 25 is the main theme of and begins the "Fanfare."

The vertical development in the main theme takes place in the second measure when two voices remain stationary while one voice moves up to E flat and the other to D flat. The last chord in that measure adds a B flat to the existing D, E flat, D flat (C sharp) chord. The sixteenth note figure in measure three reinforces the first three pitches from the song and becomes the mainstay of thematic development for the "Fanfare."

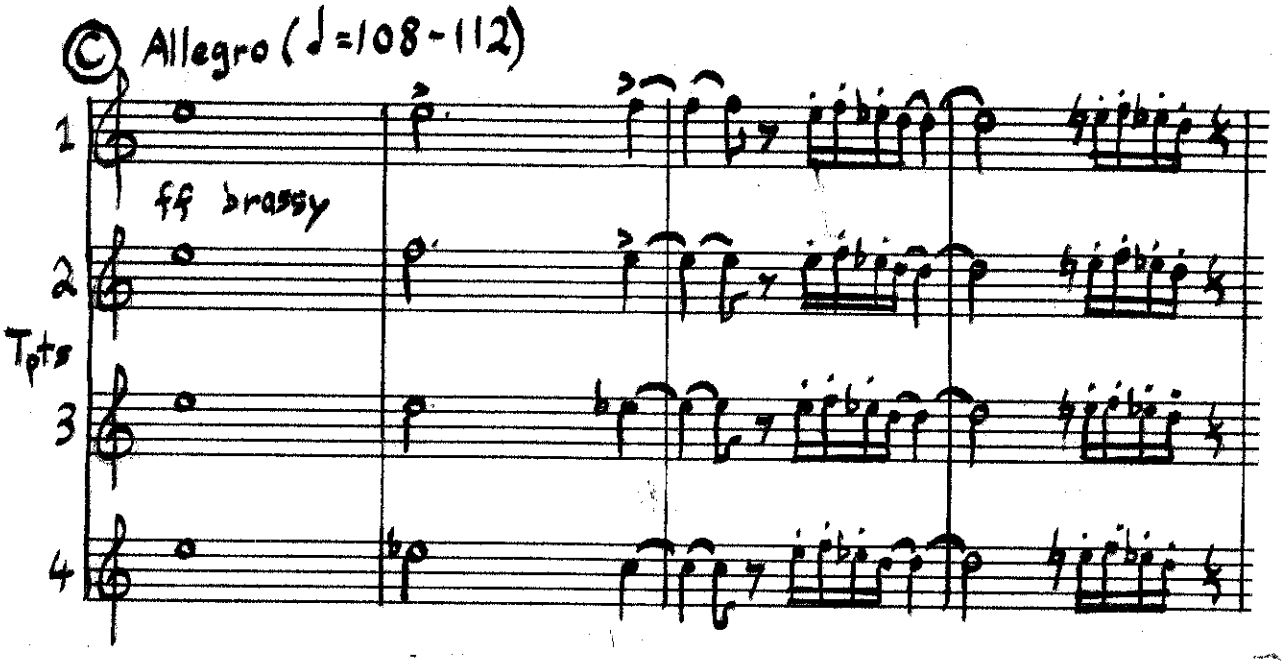


Fig. 25--Main theme of the "Fanfare," measure 1-4.

This figure is varied by pitch and rhythmic alterations being tossed from instrument to instrument and section to section blending into a mass of rapidly moving notes. These culminate with an aleatoric section containing definite rhythms of three, four, five, six and eight notes per beat placed together vertically and indefinate pitches (notes without heads).

Immediately following the first statement of the main theme and before the start of the development, there is a slightly varied restatement of the main theme. The first three notes are placed in the french horns and trombones an octave lower, and the last of these is held over as chordal accompaniment for the sixteenth notes. The sixteenth notes in the trumpets are extended in number,

inverted, and end on the E flat rather than the D. This is followed in measure ten by one measure of bells scored for harp, piano, marimba, and vibraphone. Figure 26 is the piano part for the bell motif and demonstates the continued variation on the intervalic relationships found in the Hussite song.

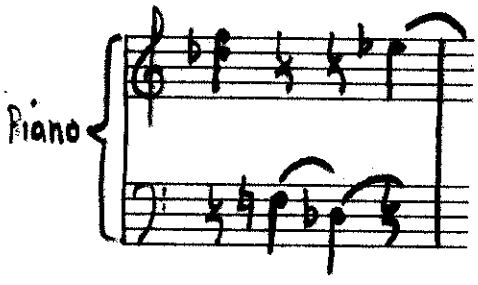


Fig. 26--Bell motif from the "Fanfare," measure 10.

This motif symbolizes the many church towers whose bells have signaled distress and victory for hundreds of years in the city of Prague and anticipates the "Aria," which uses bells as accompaniment throughout, and the "Interlude," which is scored entirely for percussion.

During the development in the "Fanfare" several themes are stated as counterpoint to the sixteenth note figures. These include a restatement of the main theme at measure twenty six followed by the chorale-like motif at measure twenty eight and the ostinato motif from the "Introduction" at measure forty. These statements of the main theme and the chorale motif are varied almost beyond recognition using

chromatic and rhythmic alteration and pitch inversion. The ostinato statement is straight forward and is in the trumpets rather than the timpani. The "Fanfare" ends recalling the "Introduction" with a non-chromatic statement of the ostinato figure in the timpani and a slowly moving variation of the first part of the main melody.

The "Aria" further develops the main thematic material with the help of a second row of twelve tones:

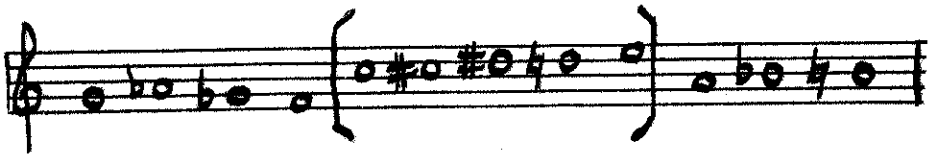


Fig. 27--Tone row used for the "Aria"

The pitches in the brackets are indicated in Husa's notes as relating to the Hussite song.[1] The first three pitches are also related in a transposed version of the thematic materials. The row in augmentation is placed forward and then in retrograde as the basis for the entire "Aria." Each pitch averages two and one half measures in length and is placed in the lower parts of the orchestra. The bell accompaniment is based on the row in diminution and is placed above the augmented version as counterpoint.

---

[1]Karel Husa, "Notes on Music for Prague 1968" (Ithaca, 1973), p. 7.

The main melodic interest in the strings is the last voice in a three part contrapuntal texture. The melody and the bell like accompaniment start with a free use of the row gradually leading to a chromatic tonal variation of the main thematic materials. The development of these materials culminates with two statements of the chorale-like motif and the introduction of a new variation of the main theme.

Fig. 28--New variation of main thematic materials, measures 38 and 39 of the "Aria."

This motif contains the tonal center, G, its upper and lower neighbors, A flat and F sharp, a minor third up, B flat, a perfect fourth down, D. All of the intervals are derived from the Hussite song. This motif is the first to use the perfect fourth down from tonic giving it a greater tonal feeling than any previous variation. The Movement generated by thematic development in the "Aria" is considerable, because of all the new material.

Thematic Movement in the "Interlude" is static due to a lack of development. The scoring is for percussion with the vibraphone having the only thematic line. This line only repeats previous material.

The "Toccata" is the climax of the composition, and thematic development adds to the climax with the use of three new variations on the main thematic materials. The first of these contains the tonic, G, its upper and lower neighbors, A and F sharp, plus the dominant D, all derived from the Hussite song. The motif also contains the augmented fourth up, C sharp, which is a chromatically altered inversion of the perfect fourth down from the song. The motif illustrated in Figure 29 is very tonal and combines the above pitches into a pattern indicating a standard chord progression. The D and F sharp function as the dominant, V, and the A and C sharp function as the secondary dominant, II. The Roman numerals, i, II and V are used in the Figure 29 to show the inferred chord progression.

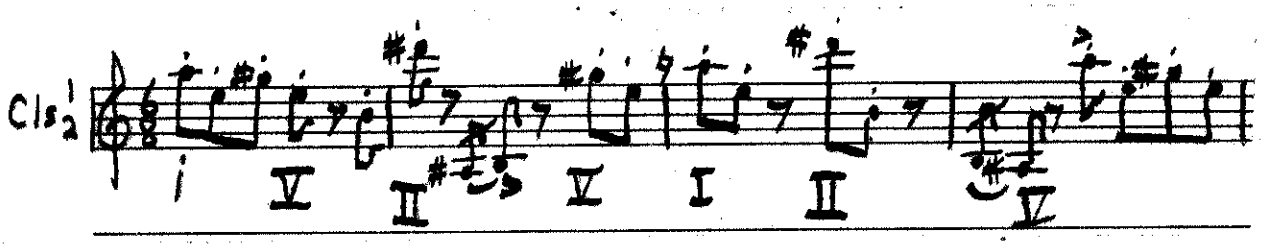


Fig. 29--First thematic variation from the "Toccata," measures 20-24.

The second theme of the "Toccata" is a bitonal variation in which the top part is based around D, while the bottom part is in G flat. The top melody contains the tonic, D, its lower neighbor, C, and the minor third up, F. These pitches are very similar to the pitches used in the cadential figure found in the "Introduction," F, C sharp,

and D. The bottom part uses the intervals from the Hussite song without chromatic alteration. The tonic is G flat surrounded by its upper and lower neighbors, A flat and F flat, plus the minor third down, E flat, and the perfect fourth down, D flat, are included. The vertical intervals formed by the two voices are major thirds and minor seconds. The two intervals are prominant in the vertical portions of the main theme from the "Fanfare."

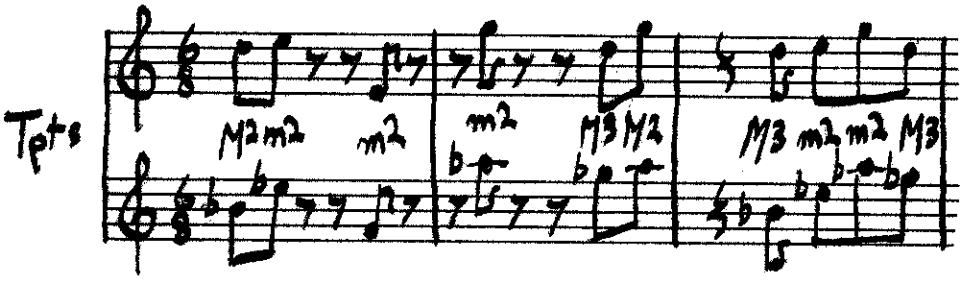


Fig. 30--Second thematic variation from the "Toccata," measures 55-57.

The third theme from the "Toccata" is a lyrical variation of the second theme. It is another bitonal duet in which both voices derive their pitches from the Hussite song. The vertical intervals stressed are again major thirds and minor seconds. Two major seconds and one unison are included as further development.

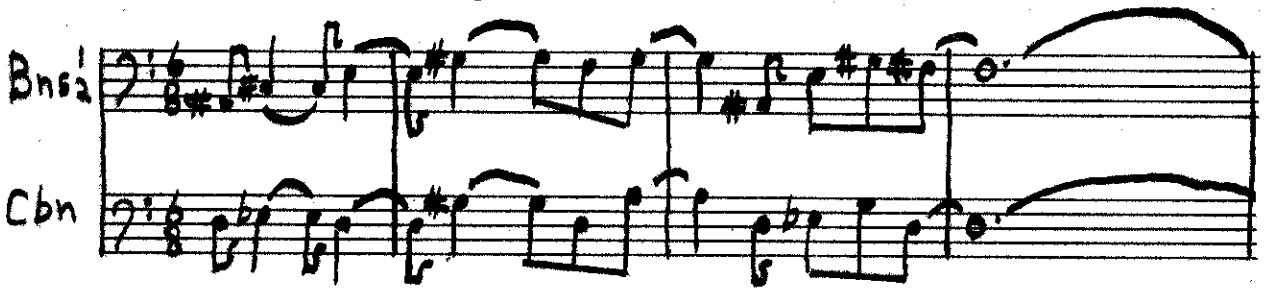


Fig. 31--Third thematic variation from the "Toccata," measures 115-117.

These themes are tossed back and forth, leading to a climax about two thirds of the way through the "Toccata." During this climax previously used themes from other movements begin to appear leading to a rhythmically altered statement of the main theme from the "Fanfare" at letter O followed by a straight forward statement of the chorale-like motif. These are basically restatements of the themes found in the "Fanfare" and result in a lesser tension level anticipating the end of the composition. Thematic Movement reaches its highest peak with the development of the new themes found in the "Toccata."

The "Chorale" brings the variations to an end with restatements of previous material including the ostinato and the Hussite song, both without chromatic alteration. The song is divided in two by a statement of the triplet figures which open the "Toccata" and is followed by an aleatoric section reminiscent of the climax in the "Fanfare." This is followed by an incomplete statement of the song ending the piece on E, the highest note in the song.

In terms of total Movement, there is a steady change in thematic materials from beginning to end of the composition. In order of strength, the first two thirds of the "Toccata," the "Aria," the "Fanfare," and the "Introduction" contribute to added Movement through thematic development. The development of themes in the "Interlude," the last part of the "Toccata," and the "Chorale" is very slight amounting to

mere restatements of previous material and results in: a resting place with the "Interlude," a return to home base during the last part of the "Toccata," and a complete stopping of Movement for the "Chorale." The generation of Movement by thematic development for the whole composition is illustrated in Figure 32.

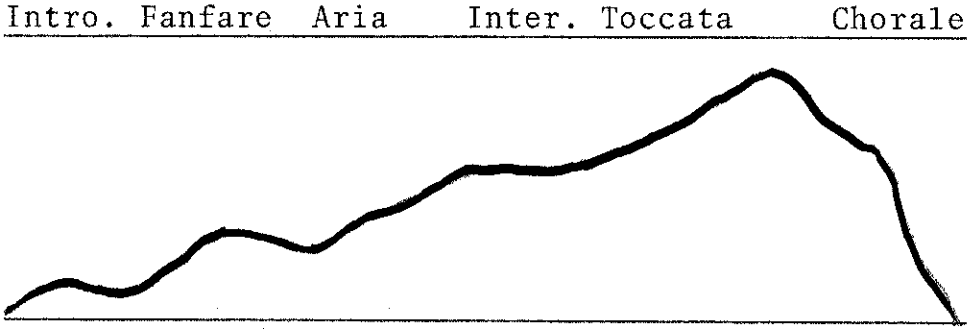


Fig. 32--The effect of thematic development on Movement for the whole composition.

In terms of total Shape, the "Introduction" functions as the introduction for the entire composition giving a taste of things to come. The "Fanfare" functions as the exposition of the main thematic materials and as the first variation of these materials. The "Aria," "Interlude," and the first two thirds of the "Toccata" are respectively the second, third, and fourth variations of the development section. The last one third on the "Toccata" is the recapitulation, and the "Chorale" is the coda. The restatement of the main thematic material plus the use of variation techniques throughout lead to the term, "sonata variation,"

in describing the Shape of the composition. The following figure summarizes the Shape of the composition.

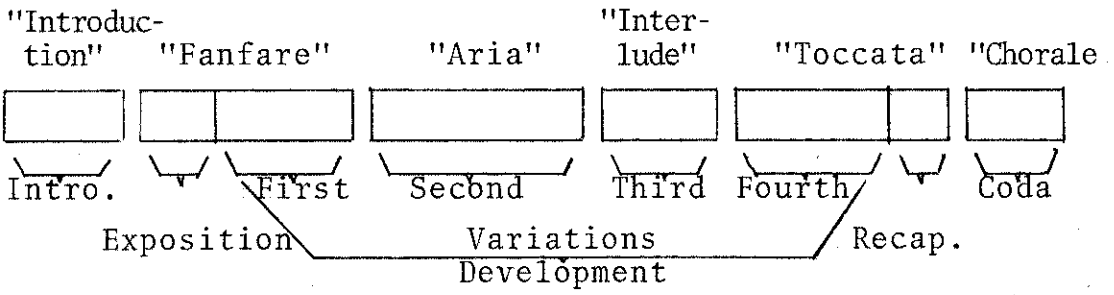
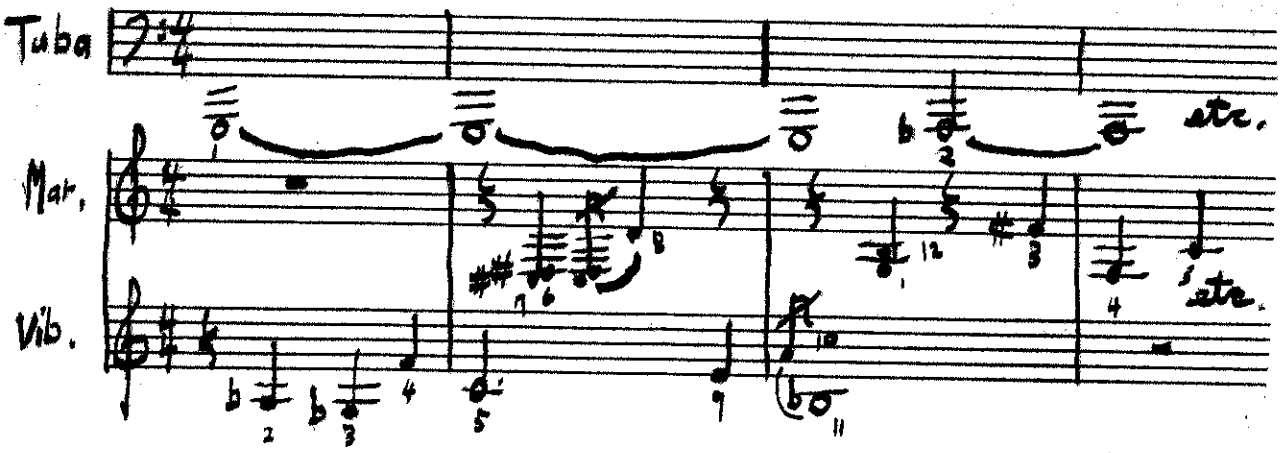


Fig. 33--Shape for entire composition as determined by thematic development.

Chord Tension

The type of chord construction used in the "Introduction" is employed for the entire composition, with the exception of the first part of the "Aria" which uses a tone row as the basis for chord construction and the "Interlude" where there is no chordal accompaniment. The following Figure 34 is taken from the first part of the "Aria" and shows the row in augmentation in the tuba part and diminution in the marimba and vibraphone.

All of the rows in this composition contain the consecutive half step relationship (D, E flat, and C sharp, or G, A flat, and F sharp, etc.) which is one of the major thematic ideas of the composition and results in vertical structures from the rows which are compatible with the thematic germ of the composition.



*The original order of the pitches in the row is indicated by the numbers.

Fig. 34--Accompaniment for first part of the "Aria," measures 1-4.

The Movement generated by chord tension in the "Fanfare," the "Aria," and the "Toccata" is similar to that found in the "Introduction"; i.e., the tension begins at zero and moves slowly to a climax of maximum level (category VI) occuring near the end of the movement and returns to zero for the end. The "Toccata" is more complicated dividing the Movement into three section. The beginning section starts with a chord of maximum tension which is left quickly for lower levels and moves slowly upward for the middle section. The middle section is the climax of the movement and the whole composition containing three areas of maximum tension; the first two of these peaks returns to a medium level (category III) before the next climax is attained blending the three into one, while the third returns to zero for the end of the middle section. The ending section brings the

tension down slowly with a climax which only reaches a medium level of tension. The "Interlude" and the "Chorale" stay at zero, with the exception of the aleatoric section in the "Chorale" which contains a vertical statement of all twelve chromatic tones. This is the only place in the composition where a chord is outside the six categories of chord tension classification. Figure 35 is a graphic illustration of chord tension Movement for the entire composition.

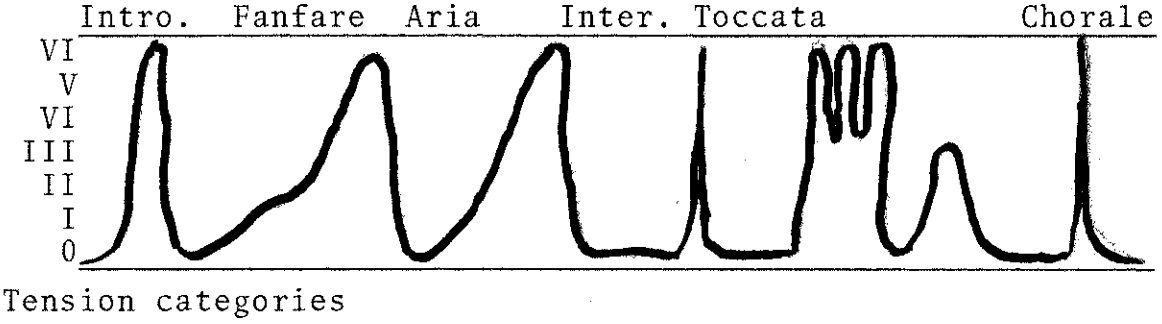


Fig. 35--Harmonic tension Movement for entire composition.

Shapes in this composition are characterized by a tension Movement which starts at a low level, rises slowly to a climax toward the end, and returns quickly to the lower level. This characteristic Shape is clearly illustrated in the chord tension Movement found in the "Introduction." "Fanfare," and "Aria." The "Toccata" also contains this characteristic Shape in variation using three sections; the first section is basically low in tension level rising slowly to the great climax contained in the second section with a relaxation back to zero during the third section. The characteristic Shape

is also the Shape for the entire composition, in that the chord tension starts with a low level, moving to a maximum climax toward the end, and ending at the low level. Each movement is clearly delineated by its own characteristic chord tension Shape, and the intergration of the movements into one Shape is felt to a lesser degree from chord tension.

Tonality

The "Introduction" and the "Fanfare" are in the tonic, D. They move to the supertonic, E at the climaxes and cadence on C sharp. Notice that the Movement of tonality for each of these movements is based on the thematic germ, D-E-C. The Movement of tonality in the "Aria" is G-D-G-A-E, and the subdominant, G, is the tonal center. The dominant, A, makes a short appearance for the climax, and the cadence is on the supertonic, E, anticipating the tonal center for the "Interlude." The "Interlude" cadences on the dominant anticipating the tonal center for the first two thirds of the "Toccata." The last one third of the "Toccata," as is the "Chorale" are written in the tonic bringing the Movement of the whole composition back to the home key center.

The total plan for tonal Movement is to start in tonic and slowly increase the level of tension moving to the subdominant, climaxing on the dominant, and bringing the Movement quickly back to the tonic for the end. The supertonic is used for the smaller climaxes contained in the "Introduction"

and the "Fanfare" and as preparation for the final dominant tonality in the first two thirds of the "Toccata." This rise and fall of tension resulting from tonal Movement is represented by the following graph:

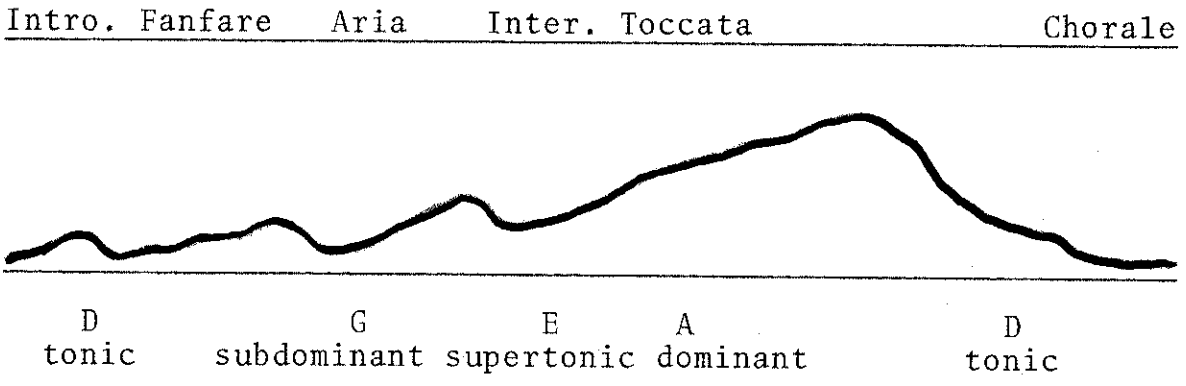


Fig. 36--Movement of tonality for the entire composition

In terms of Shape, the "Introduction" and "Fanfare" are bound by a common tonal emphasis on D, as is the last part of the "Toccata" and the "Chorale." The "Aria," "Interlude," and the first two thirds of the "Toccata" are given individuality by their separate tonalities. The whole is bound by a standard sonata-form tonal progression. Each movement is also connected to the following movement by half cadences. The sonata form is reinforced by the standard emphasis of tonic in the exposition and the recapitulation and diversions to relative key centers for the development sections.

Rhythm

The tempo marking for the "Introduction" is Adagio (♩=52), and the rhythms produce a smooth unfolding of materials.

The "Fanfare" is fast with an Allegro (♩=108-112) tempo marking. The melodies consist mostly of sixteenth note figures with an accompaniment consisting of long notes ranging from at least six counts to twenty eight counts in length. There is very little syncopation with a solid metric feeling throughout. The climaxing section contains beats with multiple note values being played against each other.

The tempo marking for the "Aria" is Moderato (♩=60-66). The bell like accompaniment is a steady quarter note motion against very long notes in the bass, averaging eleven counts in length. The melody is very smooth containing much rhythmic variety and a wide range of durations, whole to sixteenth notes. The values in both the melody and the bell part increase to sixteenth and thirty-second notes for the climax.

The "Interlude" is very slow with a tempo marking of Misteriase (♪=63-66). The meter is masked because the accompaniment's time values are serialized. The serialized portion contains twelve discrete values ranging from a dotted quarter note to a thirty second note in length. The note values for the solo instruments, snare drum and vibraphone, are free from serialization yet are so varied and syncopated as to further disguise any regular metric feeling.

The "Toccata" is marked Vivace (♩.=120-126) in six-eight time, the only use of a compound time signature in the composition. The melodies are very fast and syncopated, and the characteristic use of very long notes for the chord background is present.

The "Chorale" is marked Adagio (♩-44). The time signature is four-four with a strict metric feeling. The note values consist mainly of quarter, eighth, and half notes for the melodic sections. The only background material is found at the beginning and consists of long sustained notes. The four-four sections are separated by one section of fast triplets and an aleatoric section containing many rhythmic configurations ranging from whole to thirty-second note values playing against each other.

The "Introduction" starts the Movement on a very low level with a slow halting tempo and an ambiguous metrical feeling. The "Fanfare" increases the rhythmic Movement drastically with a very fast and well defined beat. Movement is then slowed by the "Aria" with its slower tempo and the lyrical rhythms of the melodies. The very slow tempo and serialization of rhythms of the "Interlude" retards Movement further. Although the tempos are slower in the "Aria" and the "Interlude" the rhythmic complexity is greater and helps to keep tension at a higher level. The "Toccata" enters with a very fast tempo and syncopation,

bringing the rhythmic Movement of the composition to the climax during the last third of the "Toccata." The "Chorale" then radically decreases the Movement with very slow and deliberate rhythms. Figure 37 summarizes the effect of rhythms on Movement for the entire composition.

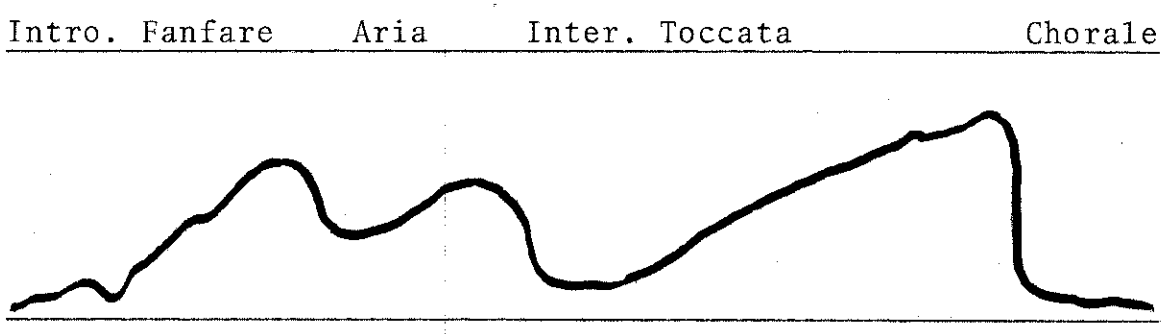


Fig. 37--The effect of rhythms on Movement for the composition.

The Shape emphasized by rhythms is a very strong delineation of each of the movements. The sonata form of the composition is also helped in that: the sections of thematic importance, the exposition and the recapitulation, are rhythmically solid; the introduction and the coda function as the beginning and end with a lesser amount of rhythmic activity; and each of the variations in the development section has its own characteristic rhythms. However, rhythms provide a greater impetus for the separation of the composition into movements rather than their integration into one Shape.

In conclusion, the total feeling for Movement for the entire composition can be most clearly understood by placing the separate curves of each parameter in vertical juxtaposition as in Figure 38.

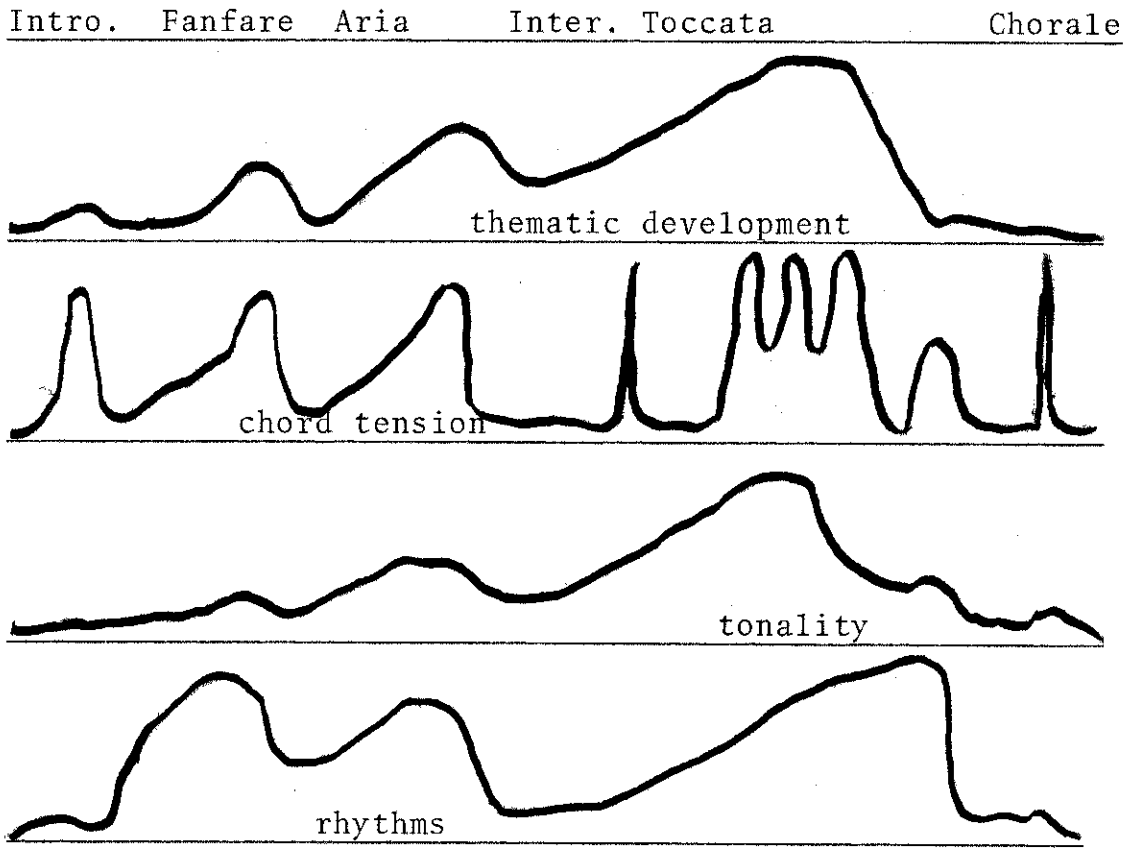


Fig. 38--Juxtaposition of the four separate curves of Movement for the entire composition.

From the above curves the totality of Movement for the composition is felt in five major climaxes, each occurring during the closing part of the individual movements excluding the "Interlude" in which the Movement is basically static. The Movement starts with the relatively small climax contained in the "Introduction" and moves gradually upward through the "Fanfare" and the "Aria" reaching the climax of the composition toward the end of the second third of the "Toccata." Considering the individual contribution of each parameter to Movement, thematic development and tonality

form a majority and dictate the gradual rise in tension, while chord tension provides continuity, giving an equal amount of tension to the climax of every movement except the "Interlude" and the "Chorale." In contrast, rhythms provide a completely different picture of Movement and mask the intended total Movement as dictated by thematic development and tonality. Each parameter contributes to Movement in a different way, resulting in direction, stability, and variety.

In terms of Shape, each parameter contributes to both the contrasting of movements and to the integration of the movements into one Shape which is the sonata-variation. Emphasis is equally divided among the parameters with rhythms and chord tension giving added distinction to each movement, while tonality and thematic development help to bind the movements together into the sonata Shape. The total Shape constitutes a group of movements which are bound by a sonata-variation form.

CHAPTER V

CONCLUSION

Historically the composition has roots in two separate styles, the American band style and the European contrapuntal style. The American style contributes a dynamic brassy fanfare for the exposition and a type of tonal writing exemplified by such composers as William Schuman and Gene Gutche. The European style contributes the serialization of pitches, rhythms, and timbres and the construction of chords from melodic elements. The fusion of these two styles is the result of the composer's European upbringing and schooling and his professional career in America as a conductor, teacher, and composer.

Thematic development in the composition consists of various manipulations including chromatic, atonal, tonal, vertical, and rhythmic variations of the intervals found in the song, Ye Warriors of God and His Law. The Movement produced for the entire composition is striking, ranging from highly syncopated atonality to rhythmically straightforward tonality. In terms of Shape, the use of one thematic germ contributes continuity, uniting all movements into one integrated composition. At the same time each movement receives its own identity with a different variation on the

thematic germ. In smaller dimensions, each phrase or periodic structure has its own characteristic treatment of the thematic germ, and the range of Movement is much less striking.

The vertical structures are consistently built throughout, using a combination of tertian and melodic principles (See Chapter II in the discussion on chord tension and Chapter III in the discussion on thematic development of the chorale-like motif). The combination of these two procedures gives the chords and the composition a special identity. Chord tension Movement has an extreme range from very simple two-note intervals to clusters up to ten notes. Shapes are marked by Movement of chord tension which starts at a lower level, moves to a climax, and cadences on a lower level. The amount of chord tension Movement within a Shape is directly proportional to the Shape, less Movement for smaller Shapes.

The type of tonality used is a combination of traditional tonal and atonal principles. A minor tonality becomes apparent with a hierarchy of pitches which gravitate toward a tonal center. Factors contributing to atonality include bitonality, chromaticism, and tone rows. The tone rows are tonal in nature and are used very freely. This weakens atonality and gives tonality a greater influence in this composition. The Movement of tonality is traditional,

with tension being produced by a departure from the key center usually to related centers. Smaller Shapes are identified by a single tonal emphasis, while larger Shapes are identified by a standard progression. For example, a phrase or a period might emphasize only D, while the entire composition moves through several key centers forming a standard sonata tonal progression, an exposition in tonic moving to several related tonalities for the development and returning to the tonic for the recapitulation. Medium sized Shapes such as a double period have less complex progressions, such as tonic--dominant--tonic.

Rhythms range from simple to extremely complex, and meters range from simple emphasis of the beat to ambiguity. Rhythm and meter are felt generally on three different levels. The chord backgrounds produce the most metrical ambiguity with long durations and random-like entrances. On the other extreme, the ostinatos of the "Introduction" and the "Aria," the flashing sixteenth note figure of the "Fanfare," and the eight note background figures of the "Toccata" emphasize the meter with entrances on the strong beats and a minimum of syncopation. The melodies constitute a middle ground, reflecting a wide range of durations and often disguising the meter with syncopation.

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