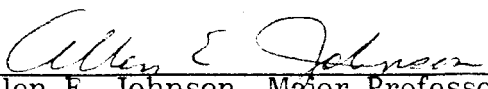
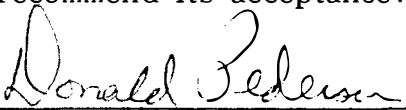


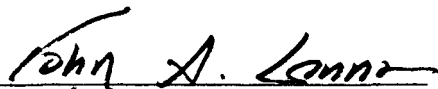
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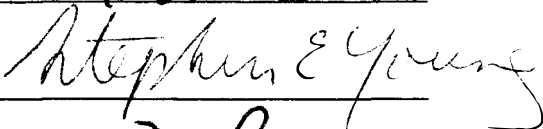
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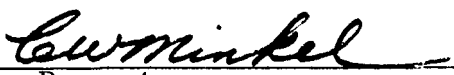

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THE CRAFT OF MUSICAL COMPOSITION

APPLIED TO
HINDEMITH'S CLARINET CONCERTO

A Thesis
Presented for the
Master of Music
Degree
The University of Tennessee, Knoxville

Melody Joy Bedell

August 1985

To my husband,
Alan David Bedell
March 2, 1951-September 17, 1983
who introduced me to the beauties
of East Tennessee
and
Hindemith's Clarinet Concerto

ACKNOWLEDGMENT

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ABSTRACT

The techniques used in the composition of melody and harmony presented in Paul Hindemith's The Craft of Musical Composition are used in the analysis of the clarinet concerto of 1947. The full score, the composer's reduction for clarinet and piano, a recording, and The Craft of Musical Composition were the materials used in the study. For the most part the construction of the clarinet concerto was consistent with Hindemith's laws of composition as presented in the text. Apart from the derivation of the chromatic scale, the methods and ideas of The Craft of Musical Composition--Series 1, Series 2, the classification of chords, harmonic fluctuation, melodic and harmonic degree-progressions and tonality--are valuable tools for analyzing Hindemith's music.

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CHAPTER 1

INTRODUCTION

In 1948, Paul Hindemith completed his revision of the song cycle Das Marienleben, composed in 1923. He rewrote the songs to bring them into line with the principles of melody and harmony he had defined in 1937 in Unterweisung im Tonsatz (The Craft of Musical Composition), the first book of a projected series of textbooks for composition students. For the composer to revise extensively one of his major works to conform to the Credo he had written in 1937 implies that all subsequent compositions would conform to the ideas set forth in the Craft.

The 1947 clarinet concerto, written for Benny Goodman and first performed by Goodman with Eugene Ormandy and the Philadelphia Orchestra on December 11, 1950, falls into this category. Slonimsky describes the four movements of the concerto as reflecting "the moods of hedonism, optimism, lyricism and gaiety, written in a translucent polyphonic idiom with a generous application of temperate dissonances."¹ The best way to explain these "temperate dissonances" is to use Hindemith's own logic from the Craft.

Howard Boatwright, one of Hindemith's students at Yale, writes, "Hindemith's views underwent changes from year to year (by 1945,

¹Nicholas Slonimsky, Music Since 1900 (New York: Charles Scribner's Sons, 1971), p. 903.

Volume I of the Craft was already seriously out of line with his teaching)." ² Hindemith had "doubts in his own mind about some of his earlier conclusions: he often talked . . . of eventually revising the whole work." ³ Victor Landau has found that Hindemith's music agrees most closely with his theories between 1917 and 1921, and again between 1937 and 1941, around the time he was writing the Craft. "His later divergences were the result of second thoughts and new discoveries. Clearly his musical development could not be expected to cease at the age of forty." ⁴

These comments imply that the Craft is useless for analyzing a work written in 1947. I have found that Hindemith's system, despite its flaws, is the best way to explain homophonic sections of the clarinet concerto. Polyphonic sections such as the second movement do not fit as well into his system of harmony. Hindemith spins out melodies or combines melodies, as in the second movement, rather than developing previously presented themes. In these sections, the emphasis is on the horizontal lines; vertical sonorities are of secondary importance.

The preoccupation with melody is evident in all of Hindemith's music. Willi Reich noted this in 1931:

²Howard Boatwright, "Paul Hindemith as a Teacher," Musical Quarterly 50, 3 (July 1964): 279.

³Geoffrey Skelton, Paul Hindemith: The Man Behind the Music (London: Victor Gollancz Ltd., 1975), p. 153.

⁴*Ibid.*, pp. 152-153.

The first String Quartet (Op. 10) shows distinct polyphonic tendencies and that development of thematic ideas through purely melodic invention which is so characteristic of Hindemith and which sharply contrasts with the style of composition based on elaboration of short motives.⁵

and Frani Muser comments on the fact in 1944 in a follow-up article to Reich:

Structurally, the urge towards a strong thematic unity, a closely knit polyphonic development, a technical virtuosity in the handling of counterpoint, has linked his work to the German tradition, and especially to the style of the late Baroque.⁶

In 1927 Hindemith began teaching composition at the Staatliche Hochschule für Musik in Berlin. Hindemith's self-imposed moral obligation to future generations of composers and his love of order led him to justify his music in a textbook.

He began at once to try to meet the challenge of students who expected more from the young radical than instruction in traditional techniques. Thus he was forced to crystallize the theoretical basis of his work in order to present it to his students.⁷

Novelty, Hindemith had come to feel, was not enough in itself, and beauty, being a subjective concept, was a fallible guide. The traditional rules of harmony, counterpoint and other compositional techniques were no longer adequate, but nothing had yet been devised to replace them. This was basically how he saw his task as a teacher: to concentrate on developing in his pupils a knowledge of the tools of their trade and an ability to use them, and at the same time to

⁵Willi Reich, "Paul Hindemith," Musical Quarterly 17, 4 (October 1931): 487.

⁶Frani B. Muser, "The Recent Work of Paul Hindemith," Musical Quarterly 30, 1 (January 1944): 34.

⁷Boatwright, p. 280.

delve deeper into his own ideas on composition by examining them from a theoretical point of view--for his own benefit as well as his pupils'. In this way he might succeed in bringing the ideas into some sort of significant order.⁸

With Mathis der Maler he had reached a stage of complete technical mastery. The years of trial and error which had preceded it had produced many fine works, but he alone knew how much of their quality they owed simply to accident or to the unaccountable factor of inspiration. If basically he was an instinctive composer, there was also inside him a deep desire to be the master and not the slave of his invention. His book--a deliberate effort to construct a new and firm foundation for the technique of composition to replace the outmoded system on which he had himself been brought up--was an essential part of the process of getting to know and understand himself. That he cast it in the form of a textbook was, besides being the natural expression of his practical nature, the result of his own teaching experiences in Berlin, where he was too often able to offer only his own taste as a criterion. The only available textbooks were those he had himself used in his student days. Added to that was his conviction that the mature artist had a social duty towards the younger generation and was morally⁹ bound to pass on to them the benefits of his own experience.

⁸Skelton, pp. 86-87.

⁹Ibid., p. 143.

CHAPTER 2

HINDEMITH'S THEORY OF MUSIC

The Craft of Musical Composition covers four broad areas: a derivation of the chromatic scale; the classification of chords, the connection of chords; and a theory of melody. An introduction and analyses of selected works complete the book.

Chapter I is an introduction in which the author criticizes current methods of teaching composition and introduces his new principles. Chapter II, "The Medium," derives a scale of twelve notes to the octave from the overtone series. Hindemith claims that the tuning of this scale is more agreeable and useful than any other tuning.

Beginning with C (64 vibrations per second), he follows the rule, "To arrive at each new tone of the scale, divide the vibration-number of each overtone successively by the order-numbers of the preceding tones in the series."¹ Final vibration-numbers must be between 64 and 128 to fall within the octave limit. c, the second overtone, adds nothing new to the scale, but g, the third overtone, does. The frequency of g is 192 vibrations per second; dividing by 2 to derive the lower octave produces G (96 v.p.s.). Dividing the fourth overtone, c¹ (256) by 3 produces F (85.33). Dividing the fifth overtone, e¹ (320), by 2 makes 160, which is more than 128 and cannot be used. Dividing 320

¹Paul Hindemith, The Craft of Musical Composition (London: Schott & Co., Ltd., 1942), p. 34.

by 3 produces A (106.66) and dividing it by 4 produces E (80), both of which fall into the set octave. The sixth overtone, g^1 (384), gives a note outside the set octave when divided by 2, and yields redundant tones when divided by 3 or 4. Dividing g^1 by 5 produces a new note, E^b (76.8).

Here Hindemith stops this method of extraction with a brief essay on the mystic power of the number 7 and the unsuitability of tones reduced from the seventh overtone. Dividing the third, fourth, and fifth overtones by 4, 5, and 6 produces tones already in the scale, with the exception of A^b (102.4). This comes from the fourth overtone (c^1 , 256) divided by 5 (51.2) and multiplied by 2.

Already this logic is strained, but still Hindemith forces the five remaining notes out of his system. He now treats the "offspring" of the "parent tone, C" in the same way to "present their progenitor with a throng of grandchildren." G produces D, F produces B^b and D^b , and E produces B.

One note remains--the most distant tone, a tritone away. Hindemith delivers "great-grandchildren" by dividing and multiplying the vibration-numbers of the "grandchildren."² B^b and D^b both produce G^b (91.02), and D and B produce F# (90). He accepts both these pitches to complete the scale.

What does a unique tuning of the chromatic scale have to do with composition? Hindemith answers this question in Chapter III, "The

²Ibid., p. 39.

Nature of the Building Stones." The order of the notes generated from the fundamental (which can be any tone, not necessarily C) is Series 1 (Figure 1). This defines the relationships between pitches.

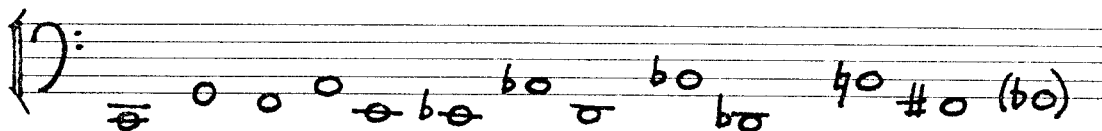


Figure 1. Series 1.

The values of the relationships established in that series will be the basis for our understanding of the connection of tones and chords, the ordering of harmonic progressions, and accordingly the tonal progress of compositions.³

Tonal relations . . . are not in themselves music. . . . Music arises from the combined effect of at least two tones. . . . Thus the Interval, formed by the connection of two tones, is the basic unit of musical construction. . . . Just as the tone-relations are arranged in descending order of value, so the intervals have a natural order, which we shall call Series 2.⁴

³Ibid., p. 56.

⁴Ibid., p. 57.

simultaneously."⁵ Chords fit into one of six main categories: Group A chords do not contain a tritone, Group B chords contain one or more tritones (the tritone is so distinctive that it makes any combination of tones unstable, hence its importance in determining the nature of a chord). Within each group are three subdivisions: chords without seconds or sevenths (groups I and II); chords with seconds or sevenths (groups III and IV); and indeterminate chords, made up of intervals of equal size (augmented triads and superposed fourths in group V; diminished triads in group VI). Group A encompasses groups I, III, and V; Group B includes groups II, IV, and VI. The position of the root of the chord places the chord in a subgroup; if the root is the lowest note, the chord is more stable than if the root is above the lowest note. To determine the root, examine all the intervals in the chord. The root is the root of the "best" interval, the one that is closest to the beginning of Series 2. If the chord has more than one "best" interval, the root of the lowest "best" interval is the root of the chord. For example, the chord in Figure 3 (from page 97 of the Craft) is made up of three perfect fifths. The lowest fifth is c^1-q^2 , so c^1 is the root of the chord.

In Chapter IV, "Harmony," Hindemith discusses the connection of chords in music. A good succession of chords shows a logical harmonic fluctuation or increase and decrease of tension over the succession. Tension increases from the most consonant chords of group I to the

⁵Ibid., p. 95.



Figure 3. Determination of the lowest "best" interval and the root of the chord.

most dissonant of group IV. Group V and group VI chords are indeterminate since they belong to no one tonality and obscure the key.

Figure 4 illustrates harmonic fluctuation. It is from the reduction for piano of the second movement of Hindemith's clarinet concerto. The first chord is of group V, the next three chords fall into group III, and the final chord is from group I. Outer voices must form a contrapuntally interesting two-voice framework, with a balance of tension and



Figure 4. Harmonic fluctuation.

relaxation. For a good example of this, see page 44. The roots of the chords form a degree-progression which determines the tonality of a passage, according to the strongest intervals (those nearest the beginning of Series 2) of the degree-progression. For example, the degree-progression as shown on page 19 clearly establishes the tonality as A.

In Chapter V Hindemith describes a theory of melody. Melodies as well as harmonies form degree-progressions, the melody being an arpeggiated form of the chord. In the figure on page 14 the degree-progression is A-C-A. Hindemith states that any combination of tones can be analyzed as a chord, yet in his theory of melody he uses the concept of the nonchord tone. The most prominent notes of a well-formed melody (the highest notes, the lowest notes, the longest notes, and so on) should form a step-progression. "The primary law of melodic construction is that a smooth and convincing melodic outline is achieved only when these important points form a progression in seconds."⁶ Sequential patterns and long notes illustrate this idea (see page 47).

To prove the effectiveness of his system, Hindemith analyzes seven works in Chapter VI: the Dies Irae, a ballade by Machaut, a Bach sinfonia, Wagner's Prelude to Tristan und Isolde, piano works by Stravinsky and Schönberg, and his own Prelude to Mathis der Maler. In the complete analyses, he shows the degree-progression and step-progression of the melody, the two-voice framework, the harmonic fluctuation, and the degree-progression and tonality of the roots of the chords.

⁶Ibid., p. 193.

Hindemith admits that his book is incomplete:

I am not writing a comprehensive treatise on composition, which would not be complete without an exact treatment of all the elements of musical structure, but am only trying to introduce law and order into the realm of the handling of tones.

Other theorists⁸ have exposed inconsistencies in the Craft, but the purpose of this study is not to criticize. Rather, this analysis accepts the tenets of the Craft and compares the music to the rules, not the rules to the music.

It is not difficult to find remarkable flaws in his writing. . . . The ease with which one can play this little game of error detection can lend a false sense of security, however, for the joys of picking at the Master's weaknesses too easily blind one to his strengths.⁹

⁷Ibid., p. 179.

⁸For example, "Les bases théoriques de l'organisation des sons chez Hindemith" by Serge Gut, in Hommage à Paul Hindemith (Yverdon, Switzerland: Editions de la Revue Musicale de Suisse Romande, 1973): 139.

⁹William Thomson, "Hindemith's Contribution to Music Theory," Journal of Music Theory 9, 1 (Spring 1965): 52.

CHAPTER 3

ANALYSIS

Ziemlich Schnell

The first movement develops four themes in a unique form. Furthermore, Hindemith seems to develop his themes by repeating, transposing, and combining them. He does not change note values or sizes of intervals.

The first theme, measures 1-3, solidly establishes A as the tonal center (Figure 5). The melodic and harmonic degree-progressions agree on A as the tonality in measures 1 and 3, and a contrasting tonality in measure 2--C melodically, B^b harmonically. Harmonic fluctuation is between chords of group I and chords of group III, group I chords appearing on strong beats and group III chords on weak beats. This creates a well-balanced fluctuation.

In common-practice writing, the contrasting key is usually the dominant; in Hindemith's system, the contrasting key is the one most closely related in Series 1. The second theme, measures 15-21, has a harmonic center of E and a melodic center of A (Figure 6). The melodic center unifies the themes, while the harmonic center adds contrast and tension. Nearly all the accompanying harmonies are from group III, confirming the restless nature of this theme as opposed to the repose of the first theme. The fragment of the melody in measure 20 is interesting for two reasons: first, because it contains three

The figure displays a musical analysis of the first theme of the first movement, measures 1-3. It is organized into six staves. The top two staves represent the original musical score, with a treble clef and a key signature of one flat. The next two staves show the melodic degree-progression and step-progression. The bottom two staves show the two-voice framework, harmonic fluctuation, harmonic degree-progression, and tonality. The notation includes various musical symbols such as notes, rests, and accidentals.

Figure 5. Analysis of first theme of first movement, measures 1-3. From top to bottom: melodic degree-progression, step-progression, two-voice framework, harmonic fluctuation, harmonic degree-progression, tonality. This order is used in all analyses in this paper.

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Figure 6. Analysis of second theme.

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This musical score is divided into three systems, each containing a grand staff (treble and bass clefs) and two empty staves. The first system features a treble staff with a key signature of one sharp (F#) and a 3/4 time signature. The melody consists of eighth and quarter notes, with a triplet of eighth notes in the final measure. The bass staff provides a simple accompaniment with half and quarter notes. The second system continues the melody in the treble staff, maintaining the 3/4 time signature. The third system introduces a change in the time signature to 5/4. The treble staff continues the melodic line, while the bass staff features a more complex accompaniment with eighth and quarter notes. Below the third system, there is a line of figured bass notation: III₁ III₁ III₂ IV₁ III₁ III₂ III₁ I₁ III₂ V III₁ III₂ III₁ III₂ III₁. The final system consists of two empty grand staves.

Figure 6 (continued)



Figure 6 (continued)

ascending perfect fourths (which will be reflected in the three descending perfect fourths at the beginning of the fourth theme, measure 61); and second, because the triplet figure is an inversion of the triplet in measure 1, relating these themes together yet again.

The clarinet enters with the third theme in measure 33. The tonality of the theme is A throughout (Figure 7). The melodic degree-progression avoids A until the end, and chords of groups II and III predominate. As with the second theme, lower-order chords all relate to one tonality. Dissonance is controlled; it increases suddenly from the first measure of this theme to the fourth measure, then decreases more gradually to the end of the theme.

The soloist and orchestra develop the first and third themes by repetition, transposition, and dissolution to lead into the fourth theme, measures 61-65 (Figure 8). The harmonic background is inactive and the melody is centered on A. This theme illustrates the principle of step-progression better than any of the other themes in this movement.

These four themes are repeated and varied for the rest of the movement. The canonic treatment of the third theme in measures 108-111 is especially interesting. In Hindemith's melodic and harmonic system, this movement is logical. Three of the themes are on A melodically, and the fourth is on E, the most closely related key to A. Harmony goes from repose in the first theme, through restlessness in the second and third themes, to inactivity in the fourth theme.

The musical score is presented in two systems. The first system contains the piano introduction and the first measure of the third theme. The second system contains the second and third measures of the third theme. The piano part is written in the upper staves, and the clarinet part is written in the lower staves. The piano part features a complex melodic line with many sixteenth and thirty-second notes. The clarinet part features a more rhythmic line with eighth and sixteenth notes. The piano part is in the key of D major, and the clarinet part is in the key of D major. The piano part is in the key of D major, and the clarinet part is in the key of D major. The piano part is in the key of D major, and the clarinet part is in the key of D major.

Figure 7. Analysis of third theme.

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The image displays a handwritten musical score for three systems. Each system consists of a piano accompaniment and a vocal line. The piano part is written in treble and bass clefs, while the vocal line is in treble clef. The key signature is one sharp (F#). The first system includes a piano (p) dynamic marking. The second system includes a piano (p) dynamic marking. The third system includes a piano (p) dynamic marking. The score is divided into measures by vertical bar lines. The piano part features various chords and melodic lines, while the vocal line features a melodic line with lyrics written below it. The lyrics are: IV₂ III₁ IV₁ || B₁ || B₂ || I₂ || B₁ III₁ || B₁.

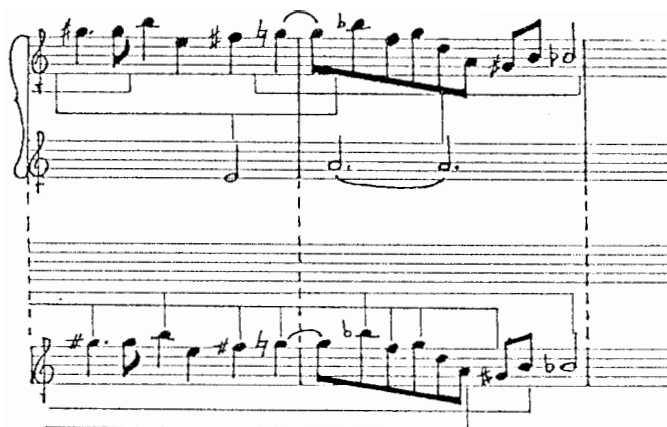
Figure 7 (continued)

Handwritten musical score for Figure 7 (continued). The score is written on five systems of staves, each system containing a grand staff (treble and bass clefs). The music is in 4/4 time and features a key signature of one sharp (F#). The notation includes various note values (quarter, eighth, and sixteenth notes), rests, and dynamic markings such as *pp* (pianissimo) and *f* (forte). The score is divided into two measures by a vertical dashed line. The first measure contains a complex melodic line in the treble clef, while the second measure features a sustained chord in the bass clef. The notation is written in a clear, legible style, with some corrections and erasures visible.

Figure 7 (continued)



(a)



(b)

Figure 8. Analysis of fourth theme.

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Ostinato--Schnell

This movement stands apart from the other movements of the concerto. It is the only movement in duple meter; the others subdivide the beat into thirds. It is the only movement centered on E; the others are on A. It is the most polyphonic movement of the concerto, and it is the least consistent with the principles of the Craft.

At first glance, this movement appears to be a haphazard collection of melodic fragments, but a closer look reveals organized blocks of sound, each with a unique orchestration and character. Within the $\frac{2}{2}$ meter, the ostinato is five and one half beats long. It combines with cross-rhythms to create a nonmetric compound rhythm. The listener does not perceive the ostinato as a regular pattern.

The pitches of the ostinato, B^b, E^b, F, A^b, and E, do not suggest a clear tonal center. The first four notes center on E^b (in Series 1, the most distant key from A, the key of the rest of the concerto), but E is the strongest pitch. Rests set it apart from the other pitches, it is the lowest note of the ostinato, and it is the final pitch of the ostinato.

A prominent position among the chords of a group is always held by their goal, the final chord. . . . This chord, representing the end of a harmonic path, claims such a large share of the hearer's attention that it may always be regarded as one of the most important chords of the group, even when its structure and the position of its root in the tonal sphere are not of the highest value. If it belongs to the same group as the preceding chords, its position at the end of the group makes it play the leading rôle. If it belongs to a group of lower rank, and accordingly does not quite succeed in

achieving that rôle, it nevertheless has such importance that a tonality otherwise stable enough may be undermined by it.¹

The ostinato appears 56 times, in seven forms. In six of these forms, the ostinato appears six times in the low strings and tympani. In one form, the ostinato appears 17 times in the clarinet.

The first form (staccato chords, mm. 1-15, shown in Figure 4, page 10) appears again in measures 34, 53, and 110, dividing later forms. When these chords appear as dividers, they are in isolated $\frac{5}{4}$ measures. The E at the end of the divider is in the downbeat of the new form. The harmonic fluctuation is from tension to relaxation, from group V through group III to group I on the final E. E is thus confirmed as the tonality of the ostinato; on it is built the most stable chord in Hindemith's system. These five chords contain all the ones of the chromatic scale except A, further setting off this movement as a balance to the rest of the concerto.

In the second form (measures 16-33), only the clarinet and piccolo play over the ostinato. The piccolo melody is in rounded sectional binary form (A: mm. 16-20; B: mm. 21-27; A: mm. 28-33). Each A section is made up of two repetitions of a doubly symmetrical phrase: the same five notes connect e^3 and e^4 ascending and descending; and above e^3 the pattern is symmetrical around b^3 --a major second followed by a minor third ascending and descending. This phrase is five beats long, displacing any sense of a five and one half beat measure from the

¹Hindemith, p. 134.

ostinato. The B section of the piccolo melody is made up of three and a half phrases, each four beats long, again working against the five and one half beat ostinato. Each phrase uses a rhythm similar to the rhythm of the A section: a half note tied to the first of five eighth note quintuplets.

In the third form of the ostinato, measures 35-52, the two trumpets play a duet that begins and ends on A, but ventures to the limits of Series 1, G# (A^b), C, F, E^b , F# (G^b), in the middle.

The only meter change in the movement is in the fourth form of the ostinato (measures 54-71), where the oboes and horns play in triple meter (a connection to the rest of the concerto) against the duple meter of the clarinet and ostinato. Like the third form, this section begins and ends on A and wanders far afield, passing through E^b , C, D^b , and D before returning to A.

No $\frac{5}{4}$ divider measure separates the fourth and fifth forms. In the fifth form (measures 72-109) the clarinet plays the ostinatos 17 times. The accompanying wind trio is made up of two ostinatos (in addition to the ostinato in the clarinet) of different lengths, plus a free part. One ostinato, in the first oboe, is 13 beats long and appears four times, alternating between centering on G and, down a fourth, centering on D. This is almost a palindrome, centering on its highest pitch halfway through the 13 beats. The other ostinato, in the bassoon, is 6 beats long and appears 10 times. It too is nearly a palindrome, centering on its highest pitch, a, three-quarters of the way through. The chromatic

free part in the second oboe and flute is reminiscent of the clarinet's rapid ornamentation in the rest of the movement.

The sixth form, measures 111-128, combines all the forms, including the last one which has not yet appeared. The clarinet does not play. The effect is polyphony in the medieval and Renaissance sense: strongly individual parts sounding simultaneously (Figure 9).

The final form, measures 129-144, ends the movement very softly. The clarinet part is the same as in the opening 16 measures. The untuned percussion play an ostinato that is 8 beats long. In the piano reduction, Hindemith translated this section into an isorhythmic canon at the octave of the ostinato.

The principles of melody and harmony as stated in the Craft are present in this movement and are useful in explaining some sections: for example, the chords of the first form. Hindemith seems to be primarily interested in melody and counterpoint: symmetry in the second and fifth forms, equal melodic lines in the third and fourth forms, and ostinatos of different lengths combined in all forms. The composer appears to have conceived of this music as a combination of blocks of sound, and the music can be analyzed more clearly this way than as melody and harmony.

Figure 9. Juxtaposition of all themes in the second movement.

The sixth form of the ostinato combines the other six forms: the achords in the bassoons, trombones, and strings of the first form; the piccolo melody of the second form; the trumpet duet of the third form; the quartet of oboes and horns of the fourth form; and the percussion of the seventh form. The fifth form is not included because it is a different length from the others.

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110
5/4

Picc
1
2
Ob
1
2
Bsn
1
2
Hr
(F)
1
2
Trp
(B)
1
2
Tranh
1
2
Timp
SD
Tromp
Tumb

110
5/4

Vl
1
2
Va
Vc
DB

The musical score for Figure 9 consists of two systems of staves, measures 110-113, in 5/4 time. The first system includes parts for Piccolo, Oboe (1 and 2), Bassoon (1 and 2), Horn (F) (1 and 2), Trumpet (B) (1 and 2), Trombone (1 and 2), Timpani, Snare Drum (SD), Trombone, and Tuba. The second system includes parts for Violin (1 and 2), Viola, Violoncello (Vc), and Double Bass (DB). The Piccolo part features a melodic line with trills and triplets, marked with *ff*. The Oboe and Bassoon parts have similar melodic lines, also marked with *ff*. The Horn, Trumpet, and Trombone parts have harmonic support, with the Horn and Trumpet marked *ff* and the Trombone marked *f*. The Timpani, Snare Drum, and Tuba parts provide a rhythmic foundation, with the Snare Drum and Tuba marked *f*. The Violin, Viola, Violoncello, and Double Bass parts provide a harmonic and rhythmic foundation, with the Violin and Viola marked *ff* and the Violoncello and Double Bass marked *f*. The score is marked with measure numbers 110, 111, 112, and 113, and the time signature 5/4.

Figure 9

This musical score page, labeled 'Figure 9 (continued)', covers measures 114 and 115. The score is arranged in a system with multiple staves. Measures 114 and 115 are indicated by boxed numbers at the top of the first staff. The instruments and their parts are as follows:

- Picc**: Piccolo, measures 114 and 115.
- Ob**: Oboe, measures 114 and 115.
- Bsn**: Bassoon, measures 114 and 115.
- Hr (F)**: Horn in F, measures 114 and 115.
- Trp (Bb)**: Trumpet in Bb, measures 114 and 115.
- Tromb**: Trombone, measures 114 and 115.
- Timp**: Timpani, measures 114 and 115.
- SD**: Snare Drum, measures 114 and 115.
- Triang**: Triangle, measures 114 and 115.
- Tamb**: Tambourine, measures 114 and 115.
- VI**: Violin I, measures 114 and 115.
- Va**: Violin II, measures 114 and 115.
- Vc**: Viola, measures 114 and 115.
- DB**: Double Bass, measures 114 and 115.

The score includes various musical notations such as notes, rests, and dynamic markings. The key signature is one flat (Bb), and the time signature is 4/4. The page number 29 is centered at the top.

Figure 9 (continued)

This musical score page, labeled "Figure 9 (continued)", covers measures 118 through 120. The instrumentation includes Piccolo (Picc), Oboe (Ob), Bassoon (Bsn), Horn (Hr) in F, Trumpet (Tp) in B-flat, Trombone (Tromb), Timpani (Timp), Snare Drum (SD), Triangle (Triang), Tambourine (Tamb), Violin (Vl), Viola (Va), Violoncello (Vc), and Double Bass (DB). The score is written in 2/4 time with a key signature of one flat (B-flat). Measures 118 and 119 are marked with a "5" above the Piccolo staff, indicating a quintuplet. Measure 120 is marked with a "120" above the Piccolo staff. The Piccolo part features a melodic line with slurs and accents. The Oboe and Bassoon parts provide harmonic support with sustained notes and moving lines. The Horn, Trumpet, and Trombone parts also contribute to the harmonic texture. The Timpani part has a steady rhythmic pattern. The Snare Drum, Triangle, and Tambourine parts provide rhythmic accompaniment. The Violin, Viola, Violoncello, and Double Bass parts form the string section, providing a harmonic and rhythmic foundation.

Figure 9 (continued)

This musical score page, labeled 31, contains measures 122 through 125. The instruments and their parts are as follows:

- Picc**: Piccolo, measures 122-125.
- Ob**: Oboe, measures 122-125.
- Bsn**: Bassoon, measures 122-125.
- Hr (F)**: Horn in F, measures 122-125.
- Trp (B^b)**: Trumpet in B-flat, measures 122-125.
- Tromb**: Trombone, measures 122-125.
- Timp**: Timpani, measures 122-125.
- SD**: Snare Drum, measures 122-125.
- Triang**: Triangle, measures 122-125.
- Tamb**: Tambourine, measures 122-125.
- VI**: Violin I, measures 122-125.
- Va**: Viola, measures 122-125.
- Vc**: Violoncello, measures 122-125.
- DB**: Double Bass, measures 122-125.

Measures 122 and 125 are marked with their respective measure numbers. The score includes various musical notations such as notes, rests, and dynamic markings.

Figure 9 (continued)

126

Picc

Ob 1

Ob 2

Bsn 1

Bsn 2

Hr (1)

Hr (2)

Trp (1)

Trp (2)

Tromb 1

Tromb 2

Timp

SD

Triang

Tamb

130

VI 1

VI 2

Va

Vc

DB

pp

ppp

ppp

ppp

pp

pp

130

Figure 9 (continued)

Ruhig

In the lyric slow movement Hindemith develops three themes. The tone center is A; the first and last chords are A major triads (as they are in the first and fourth movements), and group I chords on A recur at important cadences. The minor third is melodically important, as an interval of transposition and, filled in chromatically, as a motive.

The first theme is made up of four phrases. The melodic degree-progression of the first phrase (measures 1-3) is the beginning of Series 1 on A: A, D, E. The second phrase (measures 4-10) is made up of a two-measure motive presented in inexact sequence three times. The degree-progression moves by step from E^b to B, then leaps down to D#. In the third phrase (measures 11-14) a motive (one measure long) is developed in a sequential manner, by increasing the sizes of leaps. The fourth phrase is a repetition of the first phrase, followed by a reference to the second phrase (measure 18) and a cadence on A in measure 19 (Figure 10).

The main step-progression descends from the opening e^2 to the $d\#^1$ at the end of the third phrase, begins again on e^2 with the return of the opening, and ends on the d^1 just before the final a. Subordinate step-progressions provide the remaining notes.

Harmonic analysis reveals that group I chords appear only at the beginning and end of the theme including the restatement of the opening at the beginning of the fourth phrase. Group III chords appear most often, and chords of groups II and IV appear nearly as often. No group VI chords appear, and group V chords appear only at the end of

The musical score consists of two systems. The first system contains measures 1 through 10, and the second system contains measures 11 through 19. The piano part is written on a grand staff (treble and bass clef) and the clarinet part is written on a single staff (treble clef). The piano part includes a series of chords and intervals that are analyzed in the caption below the score.

Figure 10. Analysis of measures 1-19, third movement.

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This musical score is divided into two systems, each containing two staves. The top staff of each system is a treble clef, and the bottom staff is a bass clef. The key signature is one sharp (F#). The time signature is 4/4. The notation includes various musical symbols such as notes, rests, and accidentals. The bottom staff of the second system contains figured bass notation, which is a form of musical shorthand used in Baroque and Classical periods. The figures are as follows: || B3 ||| I, || B2 ||| I, || B1 ||| 2 IV 2 || B3. The bottom staff of the first system contains a single figure: b o.

Figure 10 (continued)

The musical score is written for a piano and features a complex harmonic structure. It consists of several systems of staves. The top system includes a grand staff (treble and bass clefs) and a single treble staff. The middle system consists of two grand staves. The bottom system includes a grand staff and a single bass staff. The notation includes various musical symbols such as notes, rests, and accidentals. The key signature is one flat (B-flat). The time signature is 4/4. The score is divided into measures by vertical bar lines. The bottom system includes Roman numerals indicating chord progressions: III₁, III₁, IV₂, III₂, II_{B2}, III₁, V, and V.

Figure 10 (continued)

This musical score is presented on a grand staff with three systems. Each system contains a treble and bass staff joined by a brace on the left. The music is written in a key with one flat (B-flat) and a common time signature. The notation includes various note values (quarter, eighth, and sixteenth notes), rests, and accidentals (sharps and flats). The first system spans four measures, the second system spans four measures, and the third system spans four measures. The third system includes Roman numeral chord figures (I₁, IV₂, IV₁, II_{B1}, III₁, IV₂, III₂, II_{B1}, IV₁, III₂, I₁) written below the bass staff. The score concludes with a double bar line and a repeat sign.

Figure 10 (continued)

the third phrase, just before the restatement of the opening. Hindemith maintains a high level of harmonic tension throughout this first statement of the theme, with consonances only at the beginning and end. Chords of groups II, III, and IV succeed one another to create a balanced harmonic fluctuation.

The chord roots imply a background tonality of B^b, far from the melody's tonality of A. Hindemith resolves these conflicts in the final appearance of this theme, discussed below.

In the second theme and accompaniment (measures 20-33), counterpoint is more important than harmony. Voices move stepwise in parallel fourths and fifths. In measures 20-24 the clarinet ascends while the bass line descends; they exchange parts in measures 26-30. Here, in the bass the clarinet line is transposed down a fifth, and in the clarinet the bass line is transposed up a fifth. In the violin line in measures 26-30 the minor third is used as a building block: the range of each phrase is a diminished fifth (two minor thirds), and the phrase is twice transposed up a major sixth (the inversion of a minor third).

The first theme returns in measures 34-48, transposed to E, then C--a pitch not significantly related in Series 1, but more readily recognizable as a member of the common-practice a-minor triad. The theme dissolves in measures 48-50 into the third theme, measures 51-70. The third theme illustrates step-progression of prominent notes, from e² down to g. The melodic degree-progression emphasizes E, with lesser emphases on A and C (Figure 11).

The musical score consists of three staves. The top staff is in treble clef, the middle staff is in middle clef, and the bottom staff is in bass clef. The music is written in a key with one sharp (F#) and a 4/4 time signature. The top staff contains a melodic line with various intervals and a four-measure rest marked with a '4'. The middle staff contains a similar melodic line, also with a four-measure rest marked with a '4'. The bottom staff contains a bass line with a four-measure rest and a final measure with a whole note. The piano accompaniment is indicated by a 'p' in the middle staff. The score is marked with a '4' in the middle staff, indicating a four-measure rest.

Figure 11. Analysis of measures 51-67, third movement.

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The image displays three systems of handwritten musical notation, each consisting of a piano accompaniment and a vocal line. The piano parts are written on grand staves (treble and bass clefs), while the vocal parts are on single staves with a soprano clef. The key signature is one sharp (F#), and the time signature is 4/4. The first system shows a vocal melody with a slur over the first four measures and a fermata over the fifth. The piano accompaniment features a simple harmonic support. The second system continues the vocal melody with similar phrasing. The third system shows the vocal line ending with a fermata, while the piano accompaniment concludes with a final chord marked with a 'V' (crescendo) and a fermata. The notation is handwritten and appears to be a draft or a personal score.

Figure 11 (continued)

This musical score is divided into four measures by vertical dashed lines. The notation includes treble and bass staves for piano accompaniment, and single staves for vocal or instrumental lines. The first measure features a piano introduction with a treble staff containing eighth and sixteenth notes, and a bass staff with a single note. The second measure continues the piano part and introduces a vocal line with a four-measure phrase. The third measure features a vocal line with a seven-measure phrase. The fourth measure concludes with a vocal line and a piano part. Roman numerals IV_2 , $V \parallel_{B2}$, IV_1 , and IV_1 are placed below the piano staves in the second, third, and fourth measures respectively. The score is written in a key with one flat (B-flat) and a common time signature.

Figure 11 (continued)

Handwritten musical score for piano, showing a sequence of chords and melodic lines across five systems. The notation includes treble and bass staves, with various musical symbols such as notes, rests, and accidentals. The score is organized into five systems, each containing a treble staff and a bass staff. The first system shows a treble staff with a melodic line and a bass staff with a single note. The second system shows a treble staff with a melodic line and a bass staff with a single note. The third system shows a treble staff with a melodic line and a bass staff with a single note. The fourth system shows a treble staff with a melodic line and a bass staff with a single note. The fifth system shows a treble staff with a melodic line and a bass staff with a single note. The score is written in a clear, legible hand, with various musical symbols and accidentals used throughout.

Chord symbols are present in the bass staff of the fourth system:

- V $\parallel_{B2}$
- IV_I
- IV_I
- V $\parallel_{B2}$

Figure 11 (continued)

Harmonic analysis reveals the reasons behind the restlessness and vagueness of this section. All chords are tense (groups II, III, and IV) or indeterminate (group V). The background tonalities form a group V chord (B^b , D, G^b), indeterminate and rootless.

A brief cadenza (measures 67-70) leads into the final appearance of the first theme, on A (Figure 12). The harmonization in measures 71-89 is much more consonant than the harmonization of the first appearance of this theme. Group I chords are most frequent, followed by those of group III, group IV, group II, and group V. The background tonality is A, agreeing with the melody.

The third theme returns in measure 91. The clarinet line is transposed down a fifth (compare measures 51-56 and 91-96), while the accompaniment is transposed up a minor third in the same measures. Chromatic movement in parallel thirds ascending and parallel fifths and sevenths descending produce the chords in measures 104-105. This increased contrapuntal interest does not change the vague tonality of the melody and harmony of the section. After the high harmonic tension measures 100-105 (all chords of groups III or IV), the fluctuation changes suddenly to the most consonant chord, I_1 on A, to close the movement.

This music illustrates well Hindemith's methods of organization. The second theme is primarily contrapuntal, like the second movement, but the first and third themes are good examples of melodic step-progression. The first theme is harmonized first in a dissonant way, then in a consonant way. The third theme achieves an unsettled effect with dissonant chords and indeterminate tonality.

Figure 12. Harmonic analysis of measures 71-89, third movement.

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The image displays two systems of musical notation, each consisting of three staves. The top system features a treble staff with a key signature of one flat and a common time signature. The middle staff contains a sequence of chords labeled $\sharp I_2$, IV_1 , V , $\sharp I_2$, IV_1 , II_{B1} , and IV_2 . The bottom staff shows a bass line with a few notes. The bottom system also has three staves. The treble staff continues the melodic line. The middle staff contains chords labeled I_1 , III_2 , III_1 , IV_2 , IV_1 , III_1 , II_{B2} , II_{B2} , and I_1 . The bottom staff shows a bass line with a few notes. The notation includes various musical symbols such as notes, rests, and accidentals.

Figure 12 (continued)

Heiter

The structure of the fourth movement is similar to that of the first movement in that the four themes are developed consecutively. The difference is that here the first two themes reappear at the end, transposed to create a kind of recapitulation.

The contrast between the two first themes (measures 1-11 and 43-54) is not so much in tonality, as with the themes in the first movement, as it is in degree of activity. In the first theme (Figure 13), the melodic tonal center changes often. Most of the theme centers on E, but the melodic degree-progression overall centers on C. The high notes and beginning pitches of sequences fit neatly into step-progressions. Harmonically, this theme is like the second movement in that vertical sonorities are less important than horizontal lines. A three-beat ostinato centering on A is repeated three times, then chords, mostly from group III, are created by chromatic and scalewise movement. Harmonic fluctuation is less important than voice-leading. The degree-progression does not relate to Series 1 on A.

The second theme's melody and accompaniment are much more simply constructed (Figure 14). Melodically, the degree-progression is static, staying on C# until the last two measures, where it moves to E. E and C# are not closely related in Series 1, but in common-practice harmony they are related to the tonic (A) as dominant and relative minor of the dominant, or mediant. The highest and longest notes form a step-progression. Harmonically, the descending sequences and pedal point in the first eight measures solidly establish C# as the tonality.



Figure 13. Analysis of first theme, measures 1-11, fourth movement.

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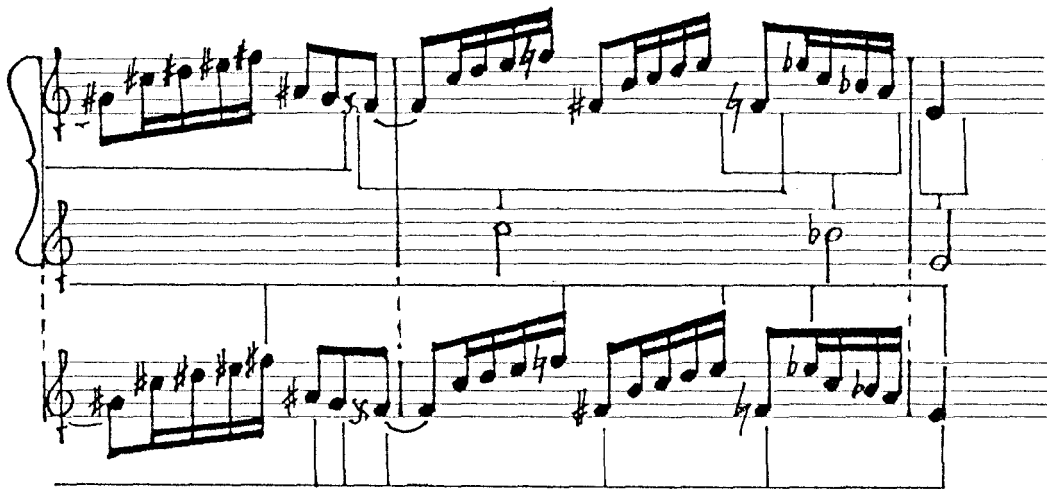


Figure 13 (continued)



Figure 14. Analysis of second theme, measures 43-54, fourth movement.

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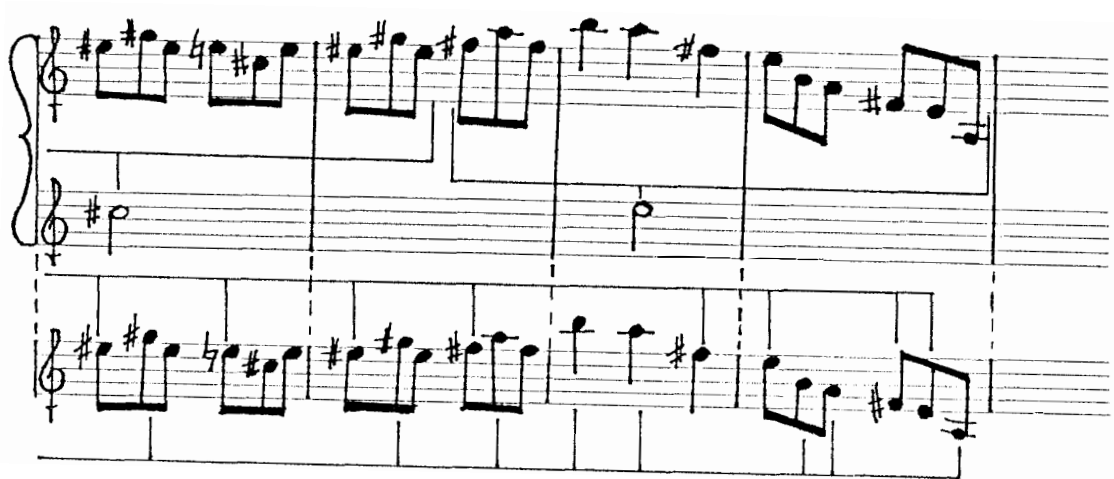


Figure 14 (continued)

This corresponds with the tonality of the melody. All the chords in this section are from group I, the most stable and consonant group. The tonality of the accompaniment in the last four measures of the second theme is ambiguous in that the chords are mostly from the indeterminate group V, and the degree-progression moves rapidly up the chromatic scale.

The contrast in the two themes is between horizontal and vertical predominance. The first theme uses motives in sequence (for example, measures 2-4), ostinatos (measures 1-5, transposed in measures 8-10, transposed in retrograde in measures 5-19), and stepwise motion ascending and descending (measures 5-10). Harmonic fluctuation and tonality show no apparent pattern. In contrast to the first theme, the texture of the second theme is thin, but the fluctuation and tonality are clear and consistent. The second theme contains a contrast within itself, between a "solid" tonality (C# pedal point, group I chords, agreement of melodic and harmonic tonalities in the first two phrases) and a "liquid" tonality (chromatic movement of tonality, group V chords, contrast of melodic and harmonic tonalities) in the third phrase.

The connection between the two themes, measures 11-42, is a repetition of the first theme and a presentation of the motive introduced in measure 8 in sequence. Stepwise movement prevails: the violins in measures 15-26 and the low strings in measures 30-41 move by half-steps. Sequences are repeated on the same pitch or a half-step higher or lower. Repetition and sequence are Hindemith's main techniques of development, here and elsewhere. For instance, the transition between

the second theme and the third theme is only two repetitions of the beginning of the second theme, displaced by an octave but not transposed, and sequences of a fragment of the second theme.

The angular fugato theme, measures 79-102, outlines not a step-progression but a third-progression (Figure 15). Entrances of the fugato subject are not related to Series 1, as might be expected, but are on members of the dominant triad: E, G#, and B.

The fourth theme, measures 104-113, is a lyrical melody on B^b with a chromatic stepwise accompaniment (Figure 16). The theme is repeated an octave below with a rising and falling figure in the accompaniment. The new idea in the clarinet, measures 122-129, is accompanied by chromatic stepwise motion similar to the accompaniment in the first appearance of the fourth theme. A rising and falling figure also accompanies the repetition of the new idea. The fourth theme returns in measure 136, transposed up a perfect fourth. The motive is presented in sequence in measures 30-42 and again in measures 145-156. This passage is not a transposition of the first passage, but is a new treatment of the motive. Sequences of the fourth theme leads into the "recapitulation," with the first theme transposed up a half step and the second theme transposed up a minor sixth. The first theme and its accompaniment are still harmonically active, but the second theme is stable. Besides being as inert as its first appearance, it is now in the home tonality of the concerto. The coda, beginning at measure 221, is a repetition of the beginning of the first theme on its original pitches. It ends abruptly with a cadence in the orchestra on A.

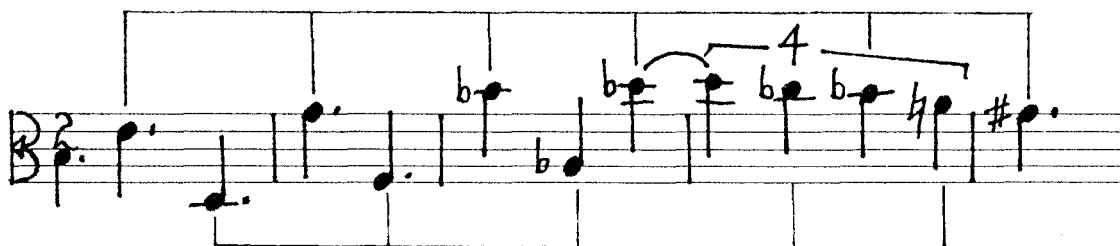


Figure 15. The third-progression of the third theme.

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Figure 16. The fourth theme of the fourth movement.

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This movement generally adheres to the ideas in the Craft, especially in the contrast between the first and second themes and the melodic step-progressions. The first and third themes are harmonically active; the second and fourth themes are harmonically static.

CHAPTER 4

CONCLUSION

The Craft of Musical Composition is a discussion on only the "setting of tones" (Tonsatz). Rhythm, form, orchestration, and other elements of music apart from harmony and melody in abstract whole notes are outside the consideration of the book. In the clarinet concerto, Hindemith generally does follow the rules of melody and harmony he set down ten years earlier. Good examples are the contrasting themes in the first and fourth movements, and the step-progressions of the themes of the third movement. The second movement is primarily contrapuntal; different sections of the orchestra are given their own distinct melodies, each separately and once all together. The listener hears the juxtaposition of lines more than the resulting harmonies, like hearing two radios tuned to different stations simultaneously. The listener hears the lines as individual and discrete even though they are sounding together. In the second movement the principles of the Craft do not apply as well as they do in the rest of the concerto because of the nature of its construction.

The idea of melodic step-progression is too broad to be useful in analysis. A progression of seconds may extend over any length of a melody, from consecutive notes to notes several measures apart. Since octave displacement is disregarded, progressions of sevenths and ninths also fall into the category of step-progressions. I found one melody, the third theme of the fourth movement, that clearly violated the

principle of step-progression; the most prominent notes in this theme move by thirds.

The system of common-practice harmonic analysis is improper for an analysis of Hindemith's clarinet concerto. The most logical way to explain these musical events is to use the system that the composer himself established ten years earlier, remembering that the composer had evolved during the ten years. Not all of his music obeys his rules. The music still has Hindemith's distinctive sound: the predominance of seconds, fourths, and fifths; the well-developed counterpoint and combinations of melodies; the sequences; the spinning-out of melodies rather than a development of motives. Apart from the derivation of the chromatic scale, the methods of The Craft of Musical Composition--Series 1, Series 2, the classification of chords, harmonic fluctuation, melodic and harmonic degree-progressions and tonality--are valuable tools for analyzing Hindemith's music.

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VITA

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