

AN ANALYSIS OF THE HINDEMITH SONATA FOR DOUBLE BASS
AND PIANO, FOR PERFORMANCE PURPOSES

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CHAPTER I

BIOGRAPHICAL BACKGROUND

Paul Hindemith was born in Hanau, Germany, in 1895. He studied at Frankfurt Conservatory, where he displayed outstanding ability on violin and viola in addition to his talent in composition. He played professionally as a concertmaster of the Frankfurt Opera and was violist with a string quartet that specialized in performing contemporary music. In 1927 he became professor of composition at the Berlin Hochschule für Musik. When Hitler rose to power, dissonant modern music was decreed forbidden. Hindemith's music became a subject of contention when the great conductor, Wilhelm Furtwängler, continued to play his works after they had been condemned. To escape political pressure, the composer went to Ankara, Turkey, where he developed a national music education program and toured as a conductor and performer. In 1940 he became professor of music theory and composition at Yale University, where he remained for thirteen years. In 1953 he returned to Europe to teach at the University of Zurich and made frequent appearances as a conductor until his death in 1963.¹

¹Peter S. Hansen, An Introduction to Twentieth Century Music (Boston, 1967), pp. 262-263.

In addition to being a very prolific composer, Hindemith developed a reputation as a fine theorist and teacher. He was the author of the following texts: The Craft of Musical Composition,² A Concentrated Course in Traditional Harmony,³ and Elementary Training for Musicians.⁴ These works basically are made up of the material taught in his courses at Yale.

In retrospect he appears a rather conservative composer. After a few experimental works early in his career, he settled down to writing music based on his system, an extension of traditional principles of harmony and counterpoint. The composer was a neo-classicist. In his book, The Craft of Musical Composition, an analogy is drawn between musical structure and architecture. The arches and girders of a building are described as determining form and size, while rhythm is analagous to the distances and dimensions of the smaller parts.⁵

Hindemith's neo-classicism had a parallel movement in the German art of the period called neue Sachlichkeit (new objectivity) and his works are often considered a musical

²Paul Hindemith, The Craft of Musical Composition, translated by Arthur Mendel and Otto Ortman, 2 vols. (London, 1941-42).

³Paul Hindemith, A Concentrated Course in Traditional Harmony, 2 vols. (London, 1943).

⁴Paul Hindemith, Elementary Training for Musicians (New York, 1946).

⁵Hindemith, Craft, Vol. I, p. 56.

expression of this movement.⁶ Another important influence in Germany at the time was the work of the Bauhaus, a famous school of design and architecture which attempted to "strip away the vast accumulation of styles and ornaments from past ages and return to basic austere simplicity and honesty of expression."⁷

These concepts in art bear a close relation to the ideals of Gebrauchsmusik, a term which is often brought up in connection with Hindemith. This term refers to music which is written for "practical use" rather than art for its own sake. Bach's cantatas, written for weekly church services, are often cited as examples. As was the case in Bach's time, Gebrauchsmusik emphasized good workmanship and the composer took the more humble attitude of a craftsman rather than that of a self-glorifying artist. Other characteristics are that technical difficulties for the performer are most often avoided, form and style are fairly clear and simple, the music is moderate in expression, and the compositions are often written for small ensembles. In many cases the music is designed for use by amateurs at informal gatherings with parts that can be played by various combinations of instruments.⁸

⁶Peter S. Hansen, op. cit., p. 262. Hansen states that neue Sachlichkeit found expression in the satirical portraits of George Grosz and in the cube-form glass buildings of Gropius.

⁷Ibid.

⁸Willi Apel, "Gebrauchsmusik", The Harvard Dictionary of Music (Cambridge, 1958).

Hindemith's very prolific output of well-crafted chamber music is an expression of the attitudes that are fundamental to the concept of Gebrauchsmusik. He composed sonatas for almost every orchestral instrument and piano. While the sonatas may not be Gebrauchsmusik in the strictest sense, as they are technically demanding and very expressive, the attitude of writing for the needs of performers is reflected here. These works were written for practical "use" (Gebrauch) in that they were for particular players or they added to the repertoire of instruments which lacked literature, such as the double bass, tuba, and the English horn.⁹

The Sonata for Double Bass and Piano was composed in 1949 and was first performed in Vienna, Austria, on April 26, 1950, by Otto and Gerhard Ruhm.¹⁰ The sonata consists of three movements:

1. Allegretto,
2. Scherzo: Allegro assai,
3. Molto Adagio--Lied: Allegretto grazioso.

These movements are not arranged in the usual fast-slow-fast order of most sonatas; the first movement is light and rondo-like, the second is a scherzo, and the final movement is a brooding theme and variations with a Recitativo section

⁹Donald J. Grout, A History of Western Music (New York, 1960), p. 643.

¹⁰Harry Halbreich, notes on album cover OR H-295, Paul Hindemith Chamber Music, Vol. VII (The Musical Heritage Society, Inc., New York).

interpolated before the final variation, the Lied: Allegretto grazioso. The formal structure throughout the sonata is generally simple and straightforward, confirming the association of Hindemith with neo-classicism.

CHAPTER II

ANALYSIS OF THE FIRST MOVEMENT

Formal Analysis

The first movement is in rondo form. This form is not commonly used for a first movement, and while there are some characteristics of sonata form in this movement, it can be clearly shown that the movement is a rondo. The basic formal structure, A (A') B A C A" coda, is shown in figure 1.

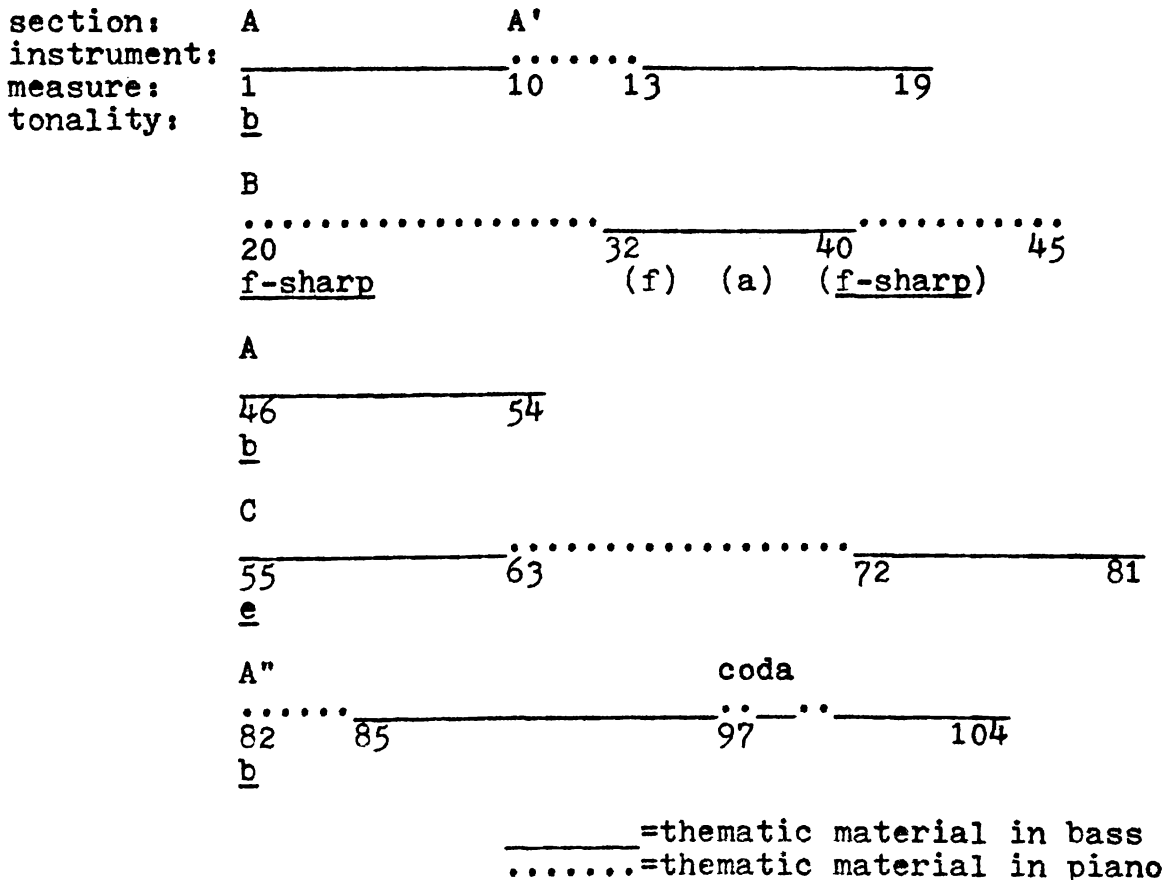


Fig. 1--Formal structure of Allegretto

The sonata is in the tonality of b. As is often the case in a traditional sonata form, the B section of the first movement goes to the tonality of the dominant; in this work it goes to the minor of the dominant, f-sharp minor. The tonality then shifts briefly to f in a contrasting part of the B section where the double bass has the thematic material in measures 32 through 39, returning to f-sharp minor. The A theme then returns in b, the original tonality, to which it returns each time the theme is stated in this movement. The C section, in measures 46 through 71, is on the sub-dominant, e; and a pedal on a, beginning at measure 72, precedes the final return of the original theme in b.

The first four sections, measures 1 through 55, form a rounded binary, A A' B A, with the B section itself dividing into a rounded binary by virtue of the contrasting material in the bass part appearing in a new tonality (measures 32 through 39). The larger rounded binary gives this section a cohesion that makes it appear to form a distinct section. This effect is strengthened by the transitory nature of the B section because of rapidly shifting meters and the busy eighth notes in the left hand of the piano part. The persistent repetition of the same three measure motive (fig. 2) makes the music drive forward to the return of the A theme.



Fig. 2₁--Three measure motive in B section of Allegretto.¹

The C section begins with the bass stating the new thematic material entirely in natural harmonics. This strong contrast of timbre is carried on by the piano by the use of delicate high register sonorities in a homophonic manner. The theme is very lyrical with slower moving note values. After each instrument states the theme, there follows a transitional section somewhat like a development in a sonata form. The piano part reiterates what is basically a variation of the dotted quarter, eighth rhythms which end each instrument's statement of the C theme while the bass repeats seven times the motive of a half note tied to a quarter note. This motive is reminiscent of the e pedal in measures 4 and 5 of the double bass part.

¹All excerpts from Hindemith Sonata for Double Bass and Piano, copyright 1950, are used by permission of Belwin-Mills Publishing Corp., copyright owners.

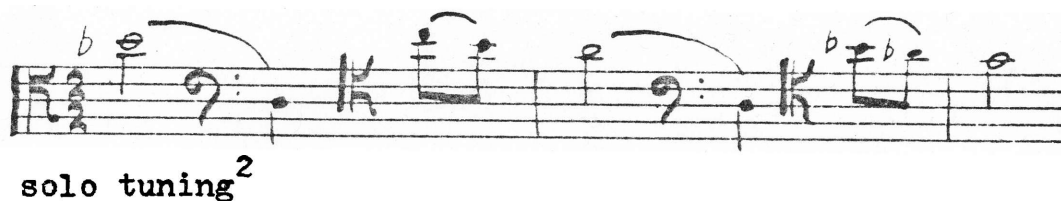
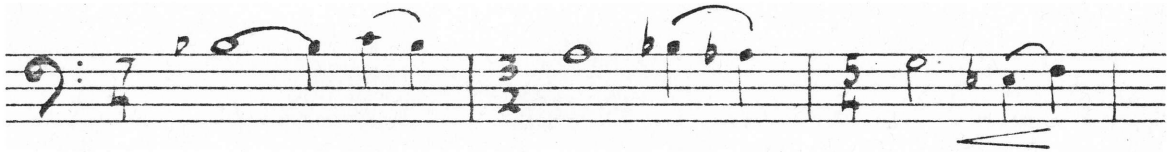


Fig. 3--E pedal in the original statement of theme in Allegretto.

The use of the pedal in inversion in measures 72 through 78 is not intervallically strict, but because it is similarly phrased (a half note slurred to a quarter) it can be related to the passage in figure 3. The use of previous thematic material and repetition or working out of motives give this section a development-like quality even though, as stated earlier, this movement is more accurately described as a rondo. This passage is retransitional in nature and should be performed as if it were driving to the recapitulation. In actuality, the music starts to die in intensity before the recapitulation and the return of the A theme is greatly underplayed.

The return of the A theme in measure 82, after the development-like transition from the C theme, is in the piano. In keeping with the modern practice of avoiding exact recapitulations, the bass takes over the theme in measure 85 in augmentation as shown in figure 4.

²The double bass part is written for solo tuning, a-e-b-f-sharp, and sounds a whole step higher than written.



solo tuning

Fig. 4--Augmentation of original material in recapitulation of Allegretto.

What takes 10 beats in the original presentation of the theme (see fig. 3) now takes 18 beats in a metrical sequence of $7/4$, $3/2$, and $5/4$. The double bass repeats the above phrase in irregular meter to augment the thematic material even further, giving this section a feeling of spatial expansion. The repetition has a two measure extension phrase which is repeated once and then varied when it seems ready to appear a third time, which expands this phrase even further. The division into three measure segments and then two measure segments should be clearly delineated by the performer, but without losing the continuity of this expansive phrase. A very legato approach to the bowing would be appropriate here. Beginning at the repetition of the augmented motive in measure 88, the bass line of the piano part alternates back and forth in the interval of an augmented fourth, gradually working its way down chromatically to resolve up in the final statement of the theme in the coda, measure 97. Both parts begin a diminuendo at the appearance of the extension phrase in measure 91, which goes to a pianissimo at the entrance of

the coda in measure 97. The theme alternates in fragments between the piano and bass, ending in a bright sounding cadence with a high harmonic in the bass and a chord in the high register of the piano with a doubled major third.

Phrase Structure

The phrase structure of the first movement requires that both instruments be considered individually. Hindemith overlaps and dovetails both parts to achieve cohesion and subtlety of phrasing. The following illustration shows the phrase structure of both the double bass and piano parts in the first movement.

section:	A	A'	B	
bass:	$5\frac{1}{2} + 3\frac{1}{2}$	(3r) 4 + 3	3 + 3 + 3 + 3	$3\frac{1}{2} + 4\frac{1}{2}$
piano:	7	3 + 4 + 3	3 + 3 + 3 + 3	$3\frac{1}{2} + 4\frac{1}{2}$
measure:	1 (2r)	10	20	32
section:		A	C	
bass:	2 + 2 + 2	6 (3r)	$1\frac{1}{2} + 1\frac{1}{2}(3) + 1\frac{1}{2} + 1\frac{1}{2}(3) + 2$	
piano:	3 + 3	$5\frac{1}{2} + 3\frac{1}{2}$	(8a)	
measure:	41	46	55	
section:	(C continued)			
bass:	(9a)			2 + 2 + 3 + 3
piano:	$1\frac{1}{2} + 1\frac{1}{2}(3) + 1\frac{1}{2} + 1\frac{1}{2}(3) + 2 + 1$			2 + 2 + 2 + 4
measure:	63			72
section:	A''		coda	
bass:	(3r) 3 + 3 + 2 + 2 + 2		+ 1 + 5	
piano:	3 + 12		1 + 1	
measure:	82 85		97	

r=rest
a=accompaniment

Fig. 5--Phrase structure of Allegretto.

The first phrase of the double bass part is made up of two subphrases, $5\frac{1}{2}+3\frac{1}{2}$ measures, while the piano part is a seven measure phrase overlapping into the second subphrase of the double bass. The piano then makes a smooth transition into the second complete phrase (measure 10) by means of a three beat anacrusis. The second phrase begins with a three measure subphrase in the piano eliding into a seven measure phrase in the bass. The seven measure phrase alternates between $2/2$ and $3/2$ time for four measures and finally broadens into three measures of $3/2$ (measures 17-19) in which the double bass soars up to its highest note to this point in the movement. This climax is especially effective because the seven measure phrase begins with the following two measure fragment repeated in the double bass. The highest pitch is a semi-tone below the climactic high point, a written e-flat':



solo tuning

Fig. 6--Repeated two measure fragment in second phrase of Allegretto.

The next section, section B in the formal analysis (measures 20-45), begins with two subphrases of three measures each (3 + 3) in the piano with the rapidly changing time

signatures punctuated by a pizzicato accompaniment in the bass. The bass pizzicato ties together the phrases with anacrusic figures. The melodic interest then suddenly shifts to the double bass (measures 32-39), which plays a phrase divided into subphrases of three measures and one beat and four measures and three beats ($3\frac{1}{2} + 4\frac{1}{2}$). According to the rhythmic accent of the longest note values of the double bass part and the piano's bass part, the bar lines are misplaced in measures 32 through 39. The first down beat seems to fall in the second beat of measure 32 and the rest of the passage sounds as though the bar lines are in the middle of each $2/2$ measure, regardless of how Hindemith has notated this passage. Perhaps he was after a de-emphasis of the natural metrical implications to give the passage a more transitory quality. The last double bass phrase of this bridge passage then elides to a counter-melody with a phrase length of six measures (measures 40-45) while the two subphrases of three measures each which began the B section are reiterated in the piano. The counter-melody is in a $2 + 2 + 2$ grouping as opposed to the $3 + 3$ grouping of the piano; thus the breaks between the subphrases never coincide in the two instruments. This builds the excitement until both instruments come together at the end of the six measure phrase with the downbeat of the return of the first theme (measure 46). The return of the theme consists of a $5\frac{1}{2}$ measure subphrase

played by the bass eliding to a $3\frac{1}{2}$ measure subphrase in the piano. The first phrase of the piece was also $5\frac{1}{2} + 3\frac{1}{2}$.

The next section (measure 55) begins with an eight measure phrase in the bass which may be divided $1\frac{1}{2} + 1\frac{1}{2} + 1\frac{1}{2} + 1\frac{1}{2} + 2$ or $3 + 3 + 2$. This phrase elides into a nine measure phrase in the piano which divides similarly $1\frac{1}{2} + 1\frac{1}{2} + 1\frac{1}{2} + 1\frac{1}{2} + 2 + 1$ or $3 + 3 + 2 + 1$. The final three measures (measures 69-71) of this phrase contain some cross currents in the accompanying figures in the double bass. Again there is an elision, as the piano part overlaps into the ensuing ten measure phrase where the melodic interest is taken over by the double bass (measure 72). This phrase is grouped $2 + 2 + 3 + 3$ and the piano rhythm ties together the last two three measure subphrases.

The phrase structure of the recapitulation (measure 82) is particularly interesting. The first phrase in the piano is an exact repetition, up an octave, of the first statement of the theme by the piano in measure 10. The piano then accompanies with a long through-composed phrase twelve measures in length (measures 85-96). At the same time the bass enters (measure 85) with the second half of the beginning first phrase in augmentation and reiterates it to form a phrase which divides $3 + 3$. This six measure phrase has an extension of six measures which divides $2 + 2 + 2$. This phrase with its extension totals twelve measures, which is the longest phrase thus far in the piece. The recapitulation

is hammered home by repeating the augmentation of the second part of the A theme in a sonorous register of the double bass. The power and expansiveness of the recapitulation give this section a sense of arrival desired by the composer in the final statement of the theme. The piece ends with the fragmentation of the theme in a brief and clever coda (measure 97). The phrase structure in the coda, because of the changing instrumentation, is 1 + 1 + 1 + 5.

CHAPTER III

ANALYSIS OF THE SECOND MOVEMENT

Formal Analysis

The second movement is a scherzo with a basic structure of A B C A'. This is not exactly the rounded binary form or, in some cases, sonata form that one expects in a scherzo. There are examples of scherzi or minuets with two trios, but the minuet portion usually returns in some form between the two trios. The following illustration shows the formal structure and division of the subsections in the scherzo being analyzed.

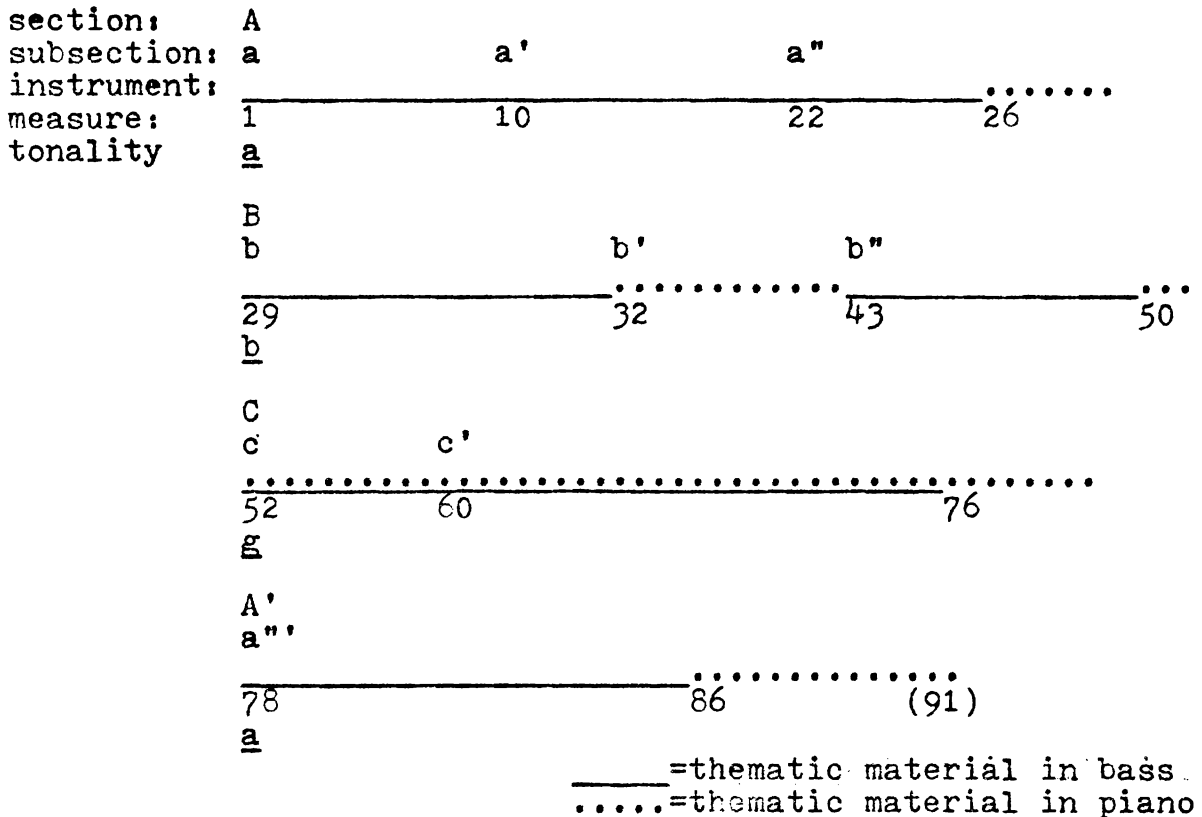


Fig. 7--Formal structure of Scherzo: Allegro assai

It would be convenient to be able to analyze the B and C sections as a single contrasting section in a ternary form, A B A; however, the length of each of the first three sections is approximately equal, each section is in a different tonality, and a two or three measure transitional sixteenth note passage in the piano divides the sections rather clearly. Episodical form, sometimes used in scherzo movements, is characterized by the use of transitions to tie the form together;¹ however, episodical form, often used as another name for rondo form,² must return to the original theme between episodes. The dilemma of what to call the form of this movement remains. Perhaps calling it an expansion of a ternary form is most appropriate, for the structure is unquestionably A B C A'.

This movement is similar to a minuet and trio in some respects, but it is different in others. The sections of a minuet and trio are closed structures, with the first subsection being an open structure. The term closed structure is applied to a passage ending on a cadence on the tonic, and the term open structure refers to a passage ending on a half cadence or unresolved. The minuet and trio is usually called a composite form because the sections themselves are

¹Cedric Thorpe Davie, Musical Structure and Design (London, 1953), p. 44.

²Willi Apel, "Episode," op. cit., p. 247.

in rounded binary form, a closed structure.³ The end of the A section in this movement of the Hindemith Sonata is closed; however, the B and C sections are open, ending unresolved.

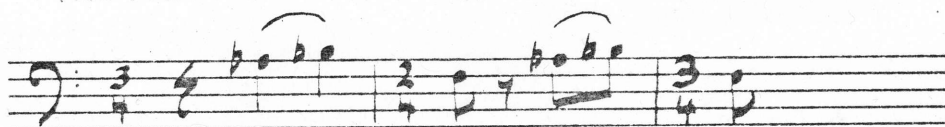
Both the A and B sections have implications of a rounded binary form, a a b a. The basic rounded binary formula is followed if one thinks of a' as the contrasting section (b) and a" as the abbreviated return of a. Both subsections a and a" cadence on the tonic after five measures; a', however, has only three measures of the five measure theme followed by a long nine measure extension resolving only with the entrance of a". This follows the classical rounded binary pattern where b, the contrasting segment, ends on the dominant which leads to the return of a. Actually there is no more of the thematic five measures in a" than in a, but subsection a has a four measure extension after stating the theme while a" goes to totally new and unrelated transitional material; hence the statement of the theme in a" seems half as long as its original presentation in a.

The A section of this scherzo is not a clear rounded binary; however, the implications of a rounded binary contained in this section should not be ignored, for the use of rounded binary is the traditional practice in a scherzo. The B section could also be considered a rounded binary by basically the same method used in section A. Subsections b and b" are

³Douglass M. Green, Form in Tonal Music (New York, 1965), p. 142.

identical for seven measures. The only difference is the transitional sixteenth note passage at the end of b". b' compresses the first three measures of b into two measures and then the piano takes over the melodic interest with a five measure transitional passage leading to b" which is actually the return of b. The rounded binary formula, a a b a, here takes the form, b, b', piano transition, b". The performer should be aware of the principle of contrast and repetition employed within sections A and B, whether these sections are thought of as a rounded binary or not.

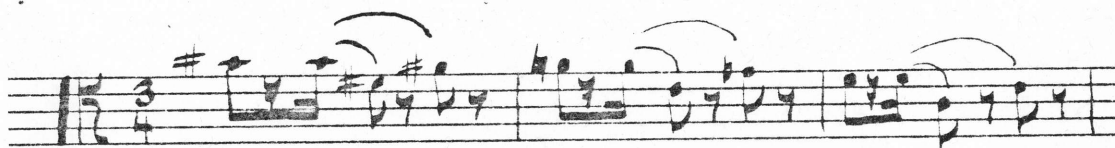
The C section cannot be forced into a structural mold; actually this section is very much like a development, lending a hint of sonata form to this movement. The following motive from the bass part is developed in this section.



solo tuning

Fig. 8--Double bass motive from section C of Scherzo: Allegro assai.

The above example is related to the motive used in the extension of subsection a at the beginning of the movement.



solo tuning

Fig. 9--Extension motive in subsection a of Scherzo:
Allegro assai.

Both motives employ the interval of a fourth and a minor third from the lowest note. The use of previous material is one characteristic of a development present here. Another characteristic is the repetition of the motive of figure 8 and its transposition to different pitch levels. The bottom pitch of the perfect fourth outlined in this motive becomes g-sharp in measure 56, c in measure 64, and e-flat in measure 66, all in the bass part. The piano sounds this motive also on b-flat in measure 72 and c-sharp in measure 74. The piano also reiterates a motive in a developmental manner in this section. The motive quoted below is repeated with the first note sometimes falling on the downbeat and sometimes in the middle of the measure.

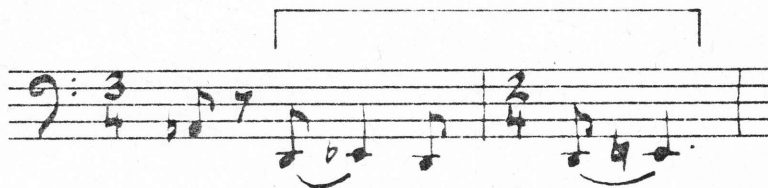


Fig. 10--Piano's motive in section C of Scherzo:
Allegro assai.

It is not clear from where the above motive is derived; however, there are several places in both the A and B sections where the interval of a semi-tone is used melodically. The motive in figure 10 is also transposed to different pitches.

Because of the rapid transposition of the motive in figure 8 to such diversified pitches, the C section lacks a feeling of a tonal center. Sections A and A' are in the tonality of a, and section B is in the tonality of b; but section C, although it starts in the tonality of g minor, is very unstable. The tonal instability and persistent repetition of short rhythmic motives in both instruments give this section a drive and momentum very much like that of a development.

In the return of the A theme following the C section, measures 78 through 85, the five measure theme is augmented to eight measures by fragmenting the phrasing and adding rests. This is followed by a six measure codetta beginning in measure 86, which consists of afterbeats in the piano and a single pizzicato a in the next to the last measure by the double bass.

Phrase Structure

The phrase structure of this movement is shown in figure 11.

section:	A				B
bass:	6 + 3	12	4	(3r)	7 + 7
piano:	6 + 3	3 + 9	(4a) + 3		7 + 2 + 5 (7a) + 2
measure:	1	10	22		29 43
section:	C	(c')		A'	
bass:	4 + 4	5 + 4 + 7	(2r)	2 + 2 + 2	(6r)
piano:	5 + 3	4 + 5 + 7 + 2	(6a)		2 + 2 + 2
measure:	52	60		78	86

r=rest
a=accompaniment

Fig. 11--Phrase structure of Scherzo: Allegro assai

The first phrase is four measures eliding to a two measure extension. This is followed by a three measure extension which is a sequence moving down by minor thirds (q.v. figure 9). The last measure of the sequential passage outlines the dominant in the double bass which leads to the repetition of the theme in measure 10. Only the first three measures of the theme are repeated, for the bass holds the last note of the measure across the bar line and plays a long nine measure extension. There is no break in continuity in the bass part, hence it is analyzed as a twelve measure phrase. The piano part, however, changes texture from four parts to five parts and changes register after the first three measures; therefore it is divided into two subphrases of three and nine measures (3 + 9). The double bass elides to the third most simple statement of the theme (measures 22-26) which has the effect of rounding the binary. This final statement elides to the rapid sixteenth note passage found at the end of each

section, and the sixteenth notes in turn elide to the beginning of the B section.

The first phrase of the B section (measure 29) divides into two subphrases of seven measures each in the double bass while the piano divides the second subphrase into two measures of accompaniment followed by a five measure transition where it briefly takes over the melodic interest. This five measure transition in the piano elides to the next phrase which is simply a repetition of the first subphrase followed by the transitional sixteenth notes which elide to the next section.

The phrasing in the C section (measures 52-77) is rather complex. The melodic interest is shared and the phrasing overlaps and dovetails between the two instruments. The first phrase is basically the same in both instruments. The phrase is nine measures long and elides to the downbeat of the next phrase. One slight difference between the two instruments is that the bass begins the second phrase on the downbeat of measure 60, but the piano begins the phrase on the second beat of that measure. The first phrase divides into subphrases differently in each instrument, 5 + 3 in the piano and 4 + 4 in the bass. The second phrase (measures 60-77) also has different subdivisions in each instrument. The first two subphrases in the piano are 5 + 4 and in the double bass they are reversed, 4 + 5. Both instruments then play a phrase of seven measures that elides into the transitional sixteenth

note passage leading to the final statement of the original theme. The final presentation of the theme is a six measure phrase divided into two measure subphrases. The codetta in the piano is likewise divided into three subphrases of two measures each.

This movement is remarkable for its many elisions and smooth transitions. The forward motion never seems to stop. The phrasing becomes gradually more and more complex until the climax of the C section in measure 69. There the bass and piano start to come together in their phrasing to lead into the return of the original theme which is in very simple phrasing. The composer has again demonstrated the mastery of his craft.

CHAPTER IV

ANALYSIS OF THE THIRD MOVEMENT

Formal Analysis

The final movement of the Hindemith Sonata is a theme and variations. The form is outlined in the following illustration.

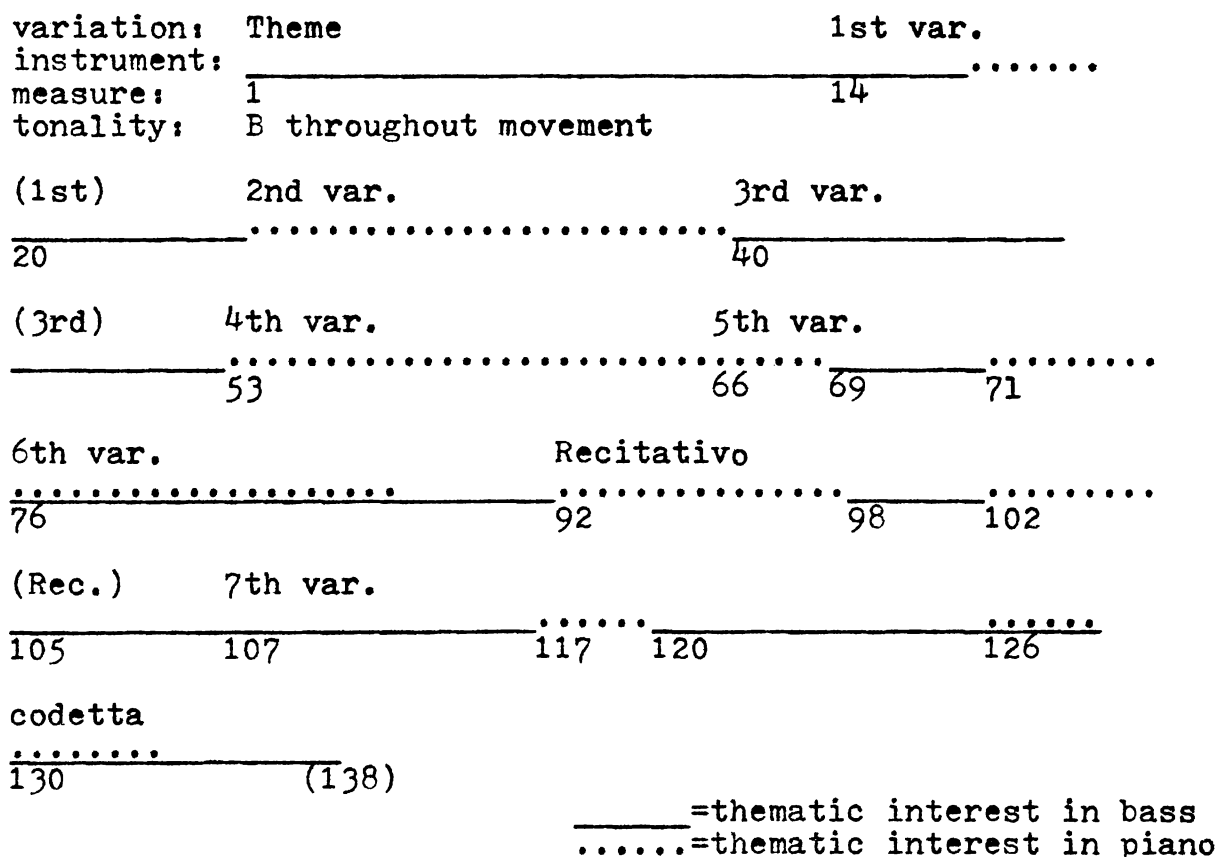


Fig. 12--Formal structure of Molto Adagio--Lied; Allegretto grazioso.

The dynamics, intensity and heaviness of texture gradually increase in each variation until they reach their height in

the fifth variation. In this variation the hammered dotted rhythms in the piano and the fortissimo octave double stops in the bass give an incredibly powerful effect. The fifth variation elides into the sixth variation which can roll forward freely from the momentum established by the previous climactic variation. In the sixth variation the original theme appears in the piano part while the double bass plays a continuous dotted thirty-second, sixty-fourth note counter-melody derived from the basic rhythmic unit of the previous variation. This makes the sixth variation seem like an extension of the fifth. When the piano finishes the restatement of the theme (in the sixth variation), the double bass continues with a three measure extension of the dotted thirty-second sixty-fourth note figure. The passage ends with the bass winding down chromatically to a very unresolved sounding concert d-sharp which becomes the first beat of the Recitativo section.

The Recitativo (measure 92), although it has form within itself, departs from the harmonic structure and phrase structure of the theme and all the other variations up to this point. The Lied which follows, however, is clearly based upon the original theme. The first four measures of the Lied in the double bass match the theme note for note with the exception of rhythmic alteration. The next three measure segment of the Lied (measures 111-113) departs from the close correspondence to the theme, but the general melodic shape

of the theme is followed. Next comes a four measure extension of the phrase in the double bass not derived from the original theme. While the bass plays this four measure extension, however, the piano plays the theme as it was first stated at the beginning of the Lied. In effect the four measure extension functions as a countermelody to the piano's thematic material which appears according to the format of the original theme.

Two inherent problems of the theme and variations form are that variations might be too repetitious or, on the other extreme, that the piece may become too fragmented. Hindemith solves both of these problems very well. By the use of skillful counterpoint and subtle phrase structure, he keeps the variations from sounding too much alike. The movement is tied together by gradually building the intensity and complexity and by grouping some of the variations together.

The theme and variations aspect of the form loses its significance if a piece achieves the structural sophistication that Hindemith achieved in this movement. The shape of a sonata form or a minuet and trio bears a direct relationship to the form; however, in the case of a theme and variations, the shape of the piece is not determined by the naively simple theme and variations form, but rather by the growth of dynamics and texture and the grouping together of the variations. To be thorough, then, an analysis of a theme and variations needs to include a description of the overall shape of the movement and how the variations are grouped together.

The grouping of the variations of the final movement of the Hindemith Sonata and their textural and dynamic growth is depicted in the following, admittedly oversimplified, diagram.

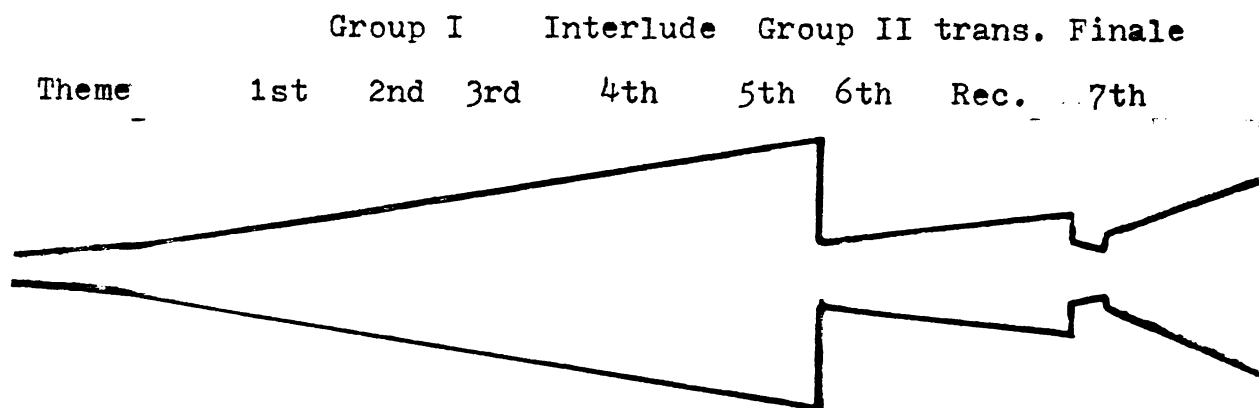


Fig. 13--Diagram of basic shape of Molto Adagio--Lied: Allegretto grazioso.

Variations one through three have been grouped together because of the prevalence of a motive made up of four thirty-second notes. Variations five and six have been grouped together because the last measure of variation five elides into the first measure of variation six and because both variations use a dotted thirty-second, sixty-fourth rhythm extensively. The theme begins at a louder dynamic level than any of the first three variations, and variation three is softer in dynamics than all of the variations in the first group; however, the texture is at its simplest at the start and grows more complex through the first four variations. Many of the

short term dynamic changes are not shown, since the concern in the above diagram is with the general shape of the movement. Each variation, in fact, has a dynamic shape as shown in figure 14.



Fig. 14--Dynamic shape of each variation in Molto Adagio--Lied: Allegretto grazioso.

This dynamic shape complements the basic harmonic scheme and phrase structure both of which will be discussed later.

There are some implications of a formal structure to this movement beyond theme and variations. The fourth variation, where the piano takes over the melodic interest, is different enough from all the preceding variations to function as a second theme. The next variation, with its hammering repetition of the dotted thirty-second, sixty-fourth rhythm is developmental in nature, for the dotted rhythm is derived from the dotted sixteenth, thirty-second rhythm of the head motive. The exact repetition of the original theme in the sixth variation by the piano could be considered a recapitulation.

The Recitativo section (measure 92) is a problem to analyze even in theme and variations form. This section is made up of new material until the last two phrases in the

double bass, which are both transpositions of the first motive of the theme. The Recitativo section then could be considered new transitional material. The Lied or seventh variation functions as a coda, since there has already been a recapitulation. Another way of looking at the movement would call the sixth variation and Recitativo section all developmental with the recapitulation coming with the seventh variation. The accompanying notes on a recording of the work refer to the Lied as "the concise coda."¹ Either way of looking at the movement has some merit. While this movement cannot be considered truly a sonata form, being aware of the similarities to sonata form gives a deeper understanding of the structure than simply labeling it a theme and variations and looking no further.

No analysis of a theme and variations would be complete without discussing what the variations have in common with the theme. The theme and all the variations except the fifth and the seventh are thirteen measures long and follow the basic harmonic structure of the theme. Only the Recitativo departs completely from the phrase structure and the harmonic scheme, for the seventh variation extends phrases, augmenting some of the rhythms, and the fifth variation elides a measure between the second and third phrases and cadences on the first measure of the sixth variation.

¹Halbreich, notes on album cover OR H-295, Paul Hindemith Chamber Music, Vol. VII.

The harmonic structure of the theme is most clearly described for the purposes of this paper by analyzing the tonality and cadences of each phrase. The first three measure phrase is in b minor, cadencing on f-sharp minor, and the second phrase is in b major with the cadence also on a b major chord. The next phrase which is four measures goes through rapidly shifting harmonic colors. Measure 7 is a minor to f major; measure 8, b-flat to g minor (the g minor chord has no third, but the ear retains the tonality of b-flat established by the first chord in the measure); and measure 9 is an e-flat major chord passing by means of a d-flat chord to a quartal chord based on c (c-f-b-flat-e-flat-a-flat). The quartal chord on c is extended into measure 10 with an appoggiatura d-flat in the solo bass part resolving down to a c which leads smoothly back to the original key, b minor. The final phrase which is three measures long is in b minor with the cadence also on a b minor chord.

Every variation basically follows the above harmonic scheme. The third phrase in each of the variations is more active rhythmically and goes to harmonic areas further removed from the key center than the other phrases, although the exact chord sequence in the theme is not used. The cadence of the first phrase is not always on an f-sharp minor chord. Often the third of the chord is omitted at the cadences. In the first variation the first phrase cadences on a d chord (without a third), in the second variation it is on

an f-sharp major chord, and in the sixth variation it is on an f-sharp major chord which resolves to an f-sharp minor chord in the same measure. In all cases the cadence of the first phrase is in a contrasting tonality, whether it be on the dominant or the relative major; the second phrase always cadences on a b major chord with the third often omitted; the third phrase always goes to remote harmonic areas; and the last phrase always ends on a b chord which is sometimes major, sometimes minor, and sometimes has no third. The cadence of the final phrase of the sixth variation repeats a major third going to a minor third in the lowest voice of the piano part. The theme has very clear cut cadences, but several of the variations overlap the phrasing of the two instruments and use elisions so that the cadences are not so obvious.

Phrase Structure

The phrase structure of this movement is shown in the illustration (figure 15) on the following page.

The theme is stated in four clear cut phrases. The first two phrases are each two measures in length. The last two phrases are joined together by an anacrusis to the last phrase in measure 10 which is also the resolution of the preceding phrase. The two phrases could be considered subphrases of four and three measures in one long seven measure phrase.

section:	Theme	1st var.						
bass:	3 3 4 + 3	3 + 3 4 + 3	(3a)(3r)	2	(5r)			
piano:	a--	3 + 3 4	3	3	3	4 + 3		
measure:	1 7	14 20	27	33				
section:	3rd var.	4th var.						
bass:	3 3 4 + 3	(2r)1	(2r)1	(4r)		(2r)1		
piano:	3 + 3 4 3	3	3	1 + 1 + 2	3			
measure:	40 46	53	56	59		63		
section:	5th var.	6th var.						
bass:	(3r)2 (3r)(2a)	2 + 1 2 + 1	2 + 2 + 1 +					
piano:	3 (2a) 3 + 2	3	3	4 +	3			
measure:	66	76	79	82	86			
section:	(6th)	Recitative						
bass:	(+) 1 + 1 + 1 + 2	(6r)	2	1	1			
piano:	3	2 1 + 1	2	2	1 (1r)			
measure:	89	92		98				
section:	(Rec.)	Lied						
bass:	2 (1r)1 1	4 9 (1r)	3 + 2	4 + 2 + 5	+ 2			
piano:	2 + 2 + 1	4 6 4	3 + 2	6	(5a) + 2			
measure:	102 104	107	121	126	130			

r=rest
a=accompaniment

Fig. 15--Phrase structure of Molto Adagio--Lied:
Allegretto grazioso.

The first variation (measure 14) ties the first two subphrases together by means of an anacrustic figure in the left hand of the piano part which occurs simultaneously with the cadence in the double bass part. The next phrase ties two subphrases together in the bass part very similarly to the way it was done in the statement of the theme, while the piano part divides into two separate phrases because of rests. The final cadence of variation one occurs at the same point that the left hand of the piano plays an anacrusis to the following variation forming an elision.

The second variation (measure 27) begins with two phrases of three measures each which are joined together by the anacrusis to the fourth measure of the variation (measure 30) played in the bass part. The bass plays the same kind of figure to lead into the third phrase of the variation and repeats it on the downbeat of the next measure (measure 34) to form a brief thematic statement while the piano retains most of the melodic interest. As has been the case in every variation so far, the third phrase is made up of two subphrases tied together. To bridge the second variation to the third, the piano maintains thirty-second notes in the left hand and the bass plays an anacrusis to variation three in the last measure of variation four.

Variation four (measure 53) states the theme in the double bass on off beats in a syncopated fashion. The piano plays an ostinato accompaniment for the first two phrases of this variation. The bass then plays a long flowing line based on the rhythm of four thirty-second notes and a syncopation derived from that rhythm for the next subphrase (measures 46-49). This subphrase leads smoothly back to the off beat melody of the first phrase to make the last subphrase. The piano changes from the ostinato figure to the delicate repetition of a motive made up of four thirty-second notes which is alternately placed on the beat and off the beat. Although measures 46 through 52 may be considered to form one phrase dividing into two subphrases in the bass, the piano divides

this section into two distinct phrases. The last phrase in the piano (measure 50) returns to the ostinato figure which began the variation.

Variations one through three are based on the following thirty-second note motive.



solo tuning

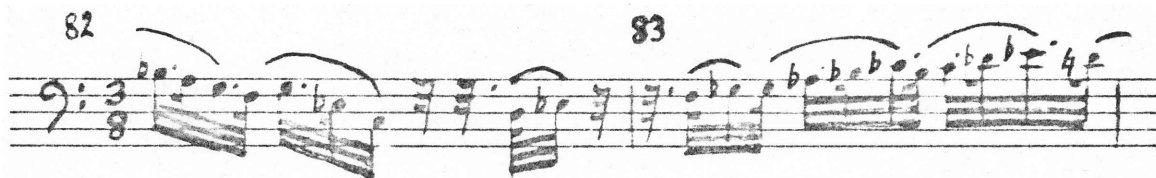
Fig. 16--Thirty-second note motive used in variations one through three, *Molto Adagio*--Lied: *Allegretto grazioso*.

The motive is a lowered upper neighbor returning to the original pitch and then descending a fourth. The motive descends at different intervals; it goes down a fifth in the piano in measure 14, down an octave in the bass in measures 20 and 21, and repeatedly down a seventh in the piano from measures 27 through the rest of the second variation. The basic shape of the motive, however, remains unaltered except for a few instances where a lower neighbor returns to the original pitch and is followed by an ascent of a fourth, as is the case in measure 35. In the third variation there is some form of the four note motive on every beat. The motion of each variation has grown gradually faster and has been tightly confined by the reiteration of the four note motive on different pitch levels. Finally the music breaks free in the fourth variation.

This variation increases the motion from thirty-second notes to sixty-fourth notes in the right hand of the piano and the pitches freely meander over a large range. The phrase structure of the fourth variation is basically the same as in the theme, 3, 3, and 4 + 3. The only difference is that the double bass comes in with a fast run on the cadence of each phrase.

The fifth variation (measure 66) dramatically hammers out the dotted thirty-second, sixty-fourth rhythm. The first phrase is three measures long, but the second phrase is only two measures because the cadence elides to form the first measure of the third phrase. The third phrase divides into subphrases of 3 + 2 measures, the cadence being the first measure of the next variation.

The piano's phrasing in the sixth variation (measure 107) is quite straightforward; the bass phrasing, however, seems unrelated to the piano's theme because it is so fragmented. Where the piano has a single phrase, the bass divides into subphrases. The first three measure phrase is divided 2 + 1 in the bass. The next three measure phrase is divided the same way. Some analysts might even consider the phrase which follows in the double bass to be an extension of the second phrase. In measure 83, the second measure of the third phrase, the third beat in the bass is ambiguous. It could belong to the first subphrase or the second one. The ambiguous passage is shown in the illustration below.



solo tuning

Fig. 17--Ambiguous phrasing in variation seven of *Molto Adagio--Lied*.

The double bass then begins a new phrase while the piano is joining the first two subphrases of the third phrase together. The usual 4 + 3 structure of the theme has a three measure extension in the piano; meanwhile, the bass begins a phrase at the cadence of the 4 + 3 phrase which is also extended. The extension is fragmented into two subphrases divided 1 + 2, the last subphrase eliding into the first beat of the *Recitativo*. During this variation the double bass is subordinate, seeming almost unrelated to the original theme in the piano. Beginning at measure 86, however, the piano part becomes softer while the double bass grows out of the background to take over the melodic interest. The whole variation must be performed suspensefully on the part of the double bassist to lead to the high point in pitch and dynamics in measure 90 where the bass has completely taken over.

Because the *Recitativo* section is so slow, it seems very chaotic and free; however, its phrase structure is quite regular. The first six measures played by the piano (measures 92 through 97) can be divided into three phrases of two

measures each with the second one dividing into two equal subphrases, since the melodic sequence is divided with a sixteenth rest with a fermata over it (measure 94). There is a resemblance to the theme in this six measures of the Recitative in that the chord at the cadence in measure 97 is an f-sharp major chord with an added eleventh (b-sharp) and an added thirteenth (c-double sharp). According to Hindemith's system of analysis, the lowest fourth or fifth in a chord establishes the root. In this particular chord the lowest fifth is f-sharp to c-sharp, which makes f-sharp the root. The pizzicato chords in the bass are analagous to the phrase which goes to remote harmonic areas in the theme, but neither the second nor the last phrase of the Recitativo can be construed to end on any kind of b chord. The resemblance to the original theme is very slight at best. The first six measures of the Recitativo in the piano are followed by four measures in the bass which are like the first four measures in the piano transposed up a minor third. The phrase structure is also like the first four measures of the Recitativo in the piano; two phrases of two measures each with the second divided into two subphrases of 1 + 1. Next follows a four measure phrase (measure 102) divided 2 + 2 with a one measure extension in the piano. The bass accompanies the first two measures of the last phrase with pizzicato chords and then rests to come in during the last half of the second two measure subphrase in the piano (measure 105) and the last half of the

piano's one measure extension (measure 106). The last note in the bass has a fermata over it and leads down a semi-tone to the first note of the final variation.

The seventh variation, the Lied: Allegretto grazioso, begins with a four measure subphrase which could possibly be divided 2 + 2. An eighth note anacrusis leads to a long graceful phrase of nine measures (measure 111) in the bass. During this long phrase the piano accompanies for the first six measures, but in measure 117 the piano starts to play the same four measure phrase with which the bass began the variation, resulting in a very effective overlapping of phrases. Both instruments are together in phrasing again in measure 121. Here the bass plays a three measure subphrase smoothly leading into a two measure subphrase by means of a three beat anacrusis. The phrase structure in the piano is also 3 + 2. Next (measure 126) the piano plays a long phrase of six measures while the bass plays a four measure transitional subphrase leading into the restatement of the theme which begins the Lied. When the bass comes in with the Lied theme (measure 130), the piano is still soaring in its six measure phrase. The six measure phrase in the piano elides to accompaniment which continues until the final cadential phrase extension. The final statement of the theme in the bass is not four measures as in the beginning of this variation, but rather is extended in measures 133, 134, and 135 with the repetition of the motive shown in the following illustration.



solo tuning

Fig. 18--Ending motive of Molto Adagio--Lied: Allegretto grazioso.

The written e-sharp is a semitone higher than the note which appears in the motive in its original presentation in this variation. The ritenuto indicated here makes the note particularly poignant. After the motive is repeated three times, the e-sharp finally resolves at the a tempo (measure 136), which is at the final two measure extension ending the piece.

To summarize, Hindemith's use of form in the Sonata for Double Bass and Piano is rather traditional. He uses rondo form in the first movement, a modified minuet and trio in the second movement, and theme and variations form in the final movement. The sonata principle is present in every movement through the use of a developmental section preceding the return of each original theme. The practice of combining the elements of more than one form has many precedents. Many movements of classical works, particularly finales, combine sonata and rondo form. To cite some examples, sonata-rondo form is used in the finale to Beethoven's Sixth Symphony, the

second movement of Beethoven's Fourth Symphony and the final movement of Piano Sonata in C minor, op. 13.² One formal device used by Hindemith which is common twentieth century practice, however, is the modification or abbreviation of the recapitulation.³ The recapitulation of the first movement is modified considerably and the restatement of the original theme at the end of the Scherzo is also abbreviated.

²Thorpe Davie, Musical Structure and Design (London, 1953), pp. 92-94.

³Joseph Machlis, Introduction to Contemporary Music (New York, 1961), p. 65.

CHAPTER V

HINDEMITH'S COMPOSITIONAL TECHNIQUES

The area of compositional techniques is very vague and broad. A paper of this size cannot hope to be very thorough in dealing with this area; however, it is hoped that much information can be brought to light which will assist in understanding and performing the Hindemith Sonata for Double Bass and Piano.

Hindemith's System of Harmonic Tension

The harmonic materials of twentieth century music are often difficult to understand. Most composers have discarded the major-minor system and have expanded the harmonic vocabulary to such an extent that analysis by traditional Roman numerals is almost meaningless. Hindemith states that the only rule which remained valid after the destruction of the diatonic system was, "Any chord can occur in any key."¹ Twentieth century chords also elude analysis because they are no longer built exclusively in thirds. The use of chords built in fourths, fifths, sevenths, and conglomerations of tones in no particular pattern make finding harmonic meaning rather difficult.

¹Hindemith, Craft, Vol. I, p. 91.

To bring a semblance of order to the chaos of twentieth century harmony, Hindemith presents a system of classifying chords according to their relative harmonic tension. There are two main groups of chords; Group A chords contain no tritone while Group B chords do contain a tritone. Group A is made up of subgroups I, III, and V while Group B consists of subgroups II, IV, and VI. The Roman numerals ascend as the relative harmonic tension of the chords increases. The subgroups are described in the following manner.²

I Without Seconds or Sevenths

Since this class of chords is in Group A, of course there are no tritones present. This subgroup includes major and minor triads. In this subgroup as well as in subgroups I through IV, those chords which have their root above the bass have more harmonic tension than chords which have the root in the bass.

II Without Minor Seconds or Major Sevenths The Tritone Subordinate

Hindemith uses the term subordinate to indicate that there must be stronger intervals present in the chord to determine the root. The only instances in which the tritone is not subordinate are diminished triads and diminished seventh chords. The chords of subgroup II are further divided, in order of increasing harmonic tension, into the classes IIa,

²Ibid., pp. 101-104 and table in back of the book (page unnumbered).

I Ib1, I Ib2, and I Ib3. I Ia contains only minor sevenths, no major seconds, and includes complete and incomplete dominant seventh chords. The I Ib series contains major seconds or minor sevenths, or both; and includes ninth chords, half diminished seventh chords, and various incomplete forms or inversions of these chords in I Ib1 and I Ib2; as well as complex chords containing more than one tritone in I Ib3.

III Containing Seconds or Sevenths or Both

This subgroup includes secondary seventh chords and their inversions, as well as non-dominant ninth chords and chords built on superimposed intervals which have a best interval (according to Hindemith's Series 2³) which determines the root. Hindemith makes a further distinction in this class of chords by stating that chords which contain minor seconds and major sevenths have more harmonic tension than those which limit themselves to major seconds and minor sevenths.

IV Containing Minor Seconds or Major Sevenths or Both One or More Tritones Subordinate

This class contains the very dissonant chords, usually very difficult to label, which are too complex to be classified in any of the previous subgroups.

³Ibid., pp. 81, 87. Series 2 gives the harmonic force of intervals from strong to weak as follows: P5, P4; M3, m6; m3, M6; M2, m7; m2, M7.

V Indeterminate

This subgroup includes only a few chords whose roots cannot be determined according to Series 2. The only chords which can be considered indeterminate that do not have a tritone are superimposed perfect fourths and superimposed major thirds (an augmented triad). This is because the upper note in a perfect fourth is the root of the chord, and the lower note of a major third is the root; hence both chords have two roots with neither root prevailing.

VI Indeterminate Tritone Predominating

This subgroup includes all diminished and diminished seventh chords. The use of these chords is infrequent in contemporary music and would usually come about because of horizontal considerations.

The use of these chord classes in an orderly fashion is a compositional technique found in the works of Hindemith. The changing tension of chords is called "harmonic fluctuation."⁴ The increase and decrease of tension result in what Hindemith calls "harmonic crescendo and diminuendo."⁵ There are many instances of where these harmonic principles are put to use in the Hindemith Sonata for Double Bass and Piano.

A sudden change in harmonic tension can be used to provide a kind of punctuation. The first movement uses exclusively

⁴Ibid., p. 117.

⁵Ibid.

chords from subgroup I in the first nine measures. Any deviation from chords of this class may be explained as a non-harmonic tone, especially since these deviations occur on weak beats. In measure 10 Hindemith uses a chord from subgroup II to provide a harmonic accent as shown in figure 19.

The image shows a musical score for two staves, treble and bass clef, in 2/4 time. Measure 9 is marked with a crescendo hairpin and a forte (f) dynamic. Measure 10 features a chord labeled 'III' (Class III) which provides a harmonic accent, followed by a return to a Class I chord. The bass line in measure 10 is labeled 'I'.

Fig 19--Harmonic punctuation by suddenly using a chord of higher tension, Allegretto.

The sudden change of harmonic tension marks the beginning of a new phrase and the entrance of the theme for the first time in the piano. The added tension and thicker texture reinforce the crescendo to forte.

A more ordinary form of harmonic fluctuation is also present at the beginning of the Allegretto grazioso movement. The theme the piano plays in measure 10 through 12 is the same as the bass played in measures 1 through 3, but when the piano has the theme, the harmonization uses class III chords instead of the class I chords used in the opening.

The music is given direction by increasing harmonic tension.

The principle of harmonic tension is not always applied in the form of a harmonic crescendo and diminuendo. The sudden return to a class I chord in measure 12 after the piece has built up to class III chords in measures 10 and 11 highlights the presence of a cadence in the piano part. The final cadence of the movement uses the same technique when the final chord, a class I chord, is preceded by two highly colored dissonant chords from subgroup IV.

Hindemith uses the principle of harmonic fluctuation in a broader sense as well. There is a greater incidence of chords of greater harmonic tension as the movement progresses. The B section has more chords from class III and above than the A section and the C section uses even more chords from the higher numbered subgroups. Having reached a peak in harmonic tension in the C section, the rest of the movement gradually decreases the harmonic tension. The return of the original theme is set in the more complex harmonic setting of the original piano statement of the theme in measures 10 through 12 and the final statement of the theme is in unison; hence it is almost devoid of any harmonic tension.

The second movement, the Scherzo: Allegro assai, begins with a beautiful example of harmonic crescendo and diminuendo. The melodic curve reaches its high point in measure 3 and the

harmonic fluctuation reinforces this curve as shown in figure 20.

The musical score is divided into two systems, each with three staves. The top staff is in bass clef, the middle in treble clef, and the bottom in bass clef. The first system shows a crescendo from *p* to *pp*. The harmonic progression is marked as IV, III₁, and III₂. The second system shows a diminuendo, with harmonic changes from IV to IV to III₂. A dashed line with an '8' above it spans the first two measures of each system.

double bass is in solo tuning

Fig. 20--Harmonic crescendo and diminuendo from Scherzo: Allegro assai.

The second measure has a chord from class III₁ followed by a chord from class III₂. The melodic climax is harmonized with a class IV chord which is followed by a III₂ chord slightly decreasing the tension. Measure 1 does have a class IV chord also; however, this does not negate the harmonic crescendo and diminuendo in measures 2 through 4.

The concentration of higher tension chords in a climactic section is one method of applying Hindemith's harmonic principles. The first section of the Scherzo: Allegro assai reaches its climax in dynamics and pitch in measures 13 through 17. Up to this point in the movement, the composer has used chords from subgroups II, III, and IV; while in measures 13 through 18 every chord is from subgroup IV. The C section of the same movement shows a similar increase in harmonic tension up to the high point in measure 69, where the composer suddenly drops back to a single note in the bass followed by a class III chord. The sudden decrease in harmonic tension is used here for a climactic effect.

The gradual building of harmonic tension in the last movement is quite clear. The theme and first variation lead to a plateau in harmonic tension in the second variation which uses many major sevenths and minor seconds. The use of these intervals would form many chords from classes IIb and III. The fourth variation is very complex in its harmonic implications and the cadences are clarified by the sudden interpolation of chords from subgroup I to give a feeling of

resolution. The greatest harmonic tension is reached in the piano's sonorities in the Recitativo section which is followed by the lyrical coda, the Allegretto grazioso, which releases the harmonic tension considerably.

Hindemith applied his system of harmonic fluctuation in numerous ways. Examples have been cited of harmonic punctuation by suddenly using a chord of greater tension, using a chord of lesser tension to indicate a cadence, the gradual increase of harmonic tension to coincide with the shape of a phrase, the gradual increase of harmonic tension throughout a movement by using a greater concentration of higher numbered chords as the piece builds in intensity, and the sudden decrease of harmonic tension at a climactic point.

Hindemith's Melodic Principles

The first chapter of book 2 of The Craft of Musical Composition is called "Construction of the Simplest One-voice Melodic Patterns."⁶ This chapter gives principles for basic exercises in a contemporary system of counterpoint. Any note in the chromatic scale may be used; but augmented and diminished intervals are avoided, as are two chromatic steps in the same direction. Of course basic contrapuntal rules always have been broken since the heyday of Palestrina, so this part of Hindemith's writing sheds little light on the

⁶Hindemith, Craft, Vol. II, p. 1.

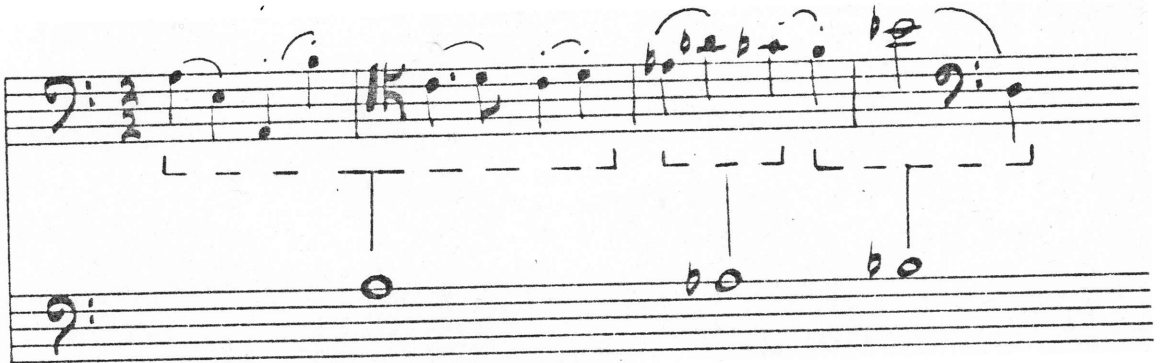
actual practice of twentieth century composers, including Hindemith himself. One rule that seems to be characteristic of modern practice is Rule 7, "Avoid broken chords."⁷ This rule is basically the same as the first rule in the Marquis text, Twentieth Century Music Idioms. This rule states, "Try to avoid outlining traditional chords in the melodic line."⁸ When broken chords are used in contemporary music, they are generally in fast moving rhythmic values which do not detract attention from the basic shape of the line. Even the principle of avoiding broken chords does not help a great deal in understanding Hindemith's melodic approach.

A chapter in book 1 called "Melody" is more revealing regarding the techniques of the composer. First Hindemith establishes that melodies have harmonic implications and then he gives a method for analyzing these harmonic implications which are called "melody degree-progression."⁹ The roots of the harmonies implied by the melody are notated under the melody on a separate staff in whole notes. The interval of a perfect fourth or a perfect fifth are the strongest indications of an implied root, but a broken chord or a third, be it major or minor, can also serve as indicators. Figure 21 shows an example of the analysis of melody degree-progression.

⁷Ibid., p. 6.

⁸G. Welton Marquis, Twentieth Century Music Idioms (Englewood Cliffs, N. J., 1964), p. 8.

⁹Hindemith, Craft, Vol. I, p. 183.



Melody Degree-Progression

Fig. 21--Melody degree-progression in the opening Allegretto.

Hindemith also applied the term "degree-progression"¹⁰ to the succession of chord roots. It should be understood that the melody degree-progression and the degree-progression of the chord roots do not necessarily coincide. In the above example the second measure is harmonized with a g minor triad (f minor in the transposition of the double bass part); however, the melody degree-progression stays on a for both measures. The principles which are given for root degree-progression¹¹ apply to melody degree-progression.

Another important aspect of Hindemith's melodic technique is "step-progression."¹² The composer asserts that there should be smooth progression in seconds between the

¹⁰Ibid., p. 145.

¹¹Ibid., pp. 145-146.

¹²Ibid., p. 193.

itches which stand out in a melody; the high points, the low points, and metrically emphasized or otherwise stressed pitches. Seconds, according to Hindemith, have more melodic force than any other interval. Melodic force is in reverse order of harmonic force which is indicated in series 2.¹³

(cf. Ch. II footnote 3)

There may be more than one step-progression going on at the same time in a given passage. Figure 22 shows two simultaneous step-progressions at the beginning of the Scherzo movement.



solo tuning

Fig. 22--Simultaneous step-progressions from Scherzo: Allegro assai.

Even though there may be an octave skip, as there is in the third and fourth measures of the above figure, the sequence of main notes is still considered a step progression. The following passage from the Scherzo uses step progression in octaves to provide a marked contrast to the obvious step-progression of the opening theme which was quoted in figure 22.

¹³Ibid., p. 87.

Step-Progression

solo tuning

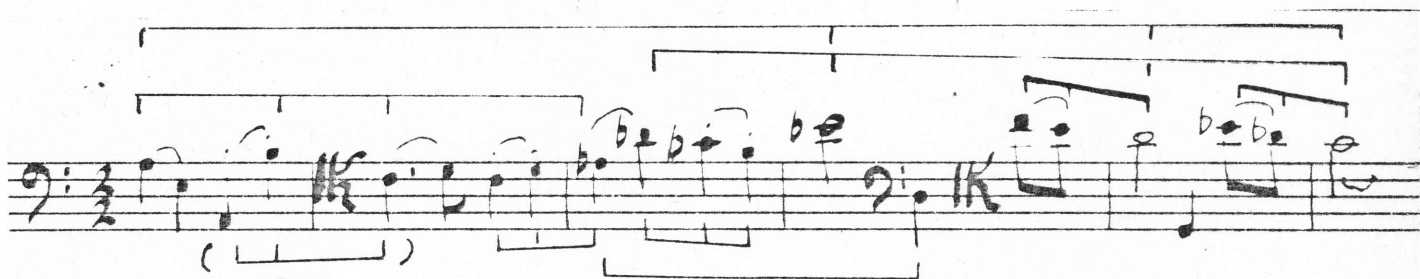
Fig. 23--Octave transposition in step-progression from Scherzo: Allegro assai.

The passage in figure 23 is especially interesting from the point of view of building tension. Hindemith includes in his writings a principle which is intuitively obvious to anyone with the least amount of musical sensitivity, that a rising interval produces an increase in tension while a descending interval relaxes tension.¹⁴ If the intervals are members of the same chord, the change in tension is considerably decreased and in most cases even non-existent. Since seconds are usually not members of the same chord, the change in tension is consistently found in seconds. This same principle of tension also applies to step-progression. Figure 23 builds greatly in tension by virtue of the tremendous rise in pitch; however, the step-progression of the first three measures

¹⁴Ibid., p. 188.

is downward in motion and therefore should cause a relaxation of the tension. The rising pitch would probably be the dominant factor in interpreting this passage.

According to Hindemith there may be as many as four step-progressions occurring simultaneously.¹⁵ The presence of several step-progressions is in itself an indication of greater complexity, and consequently, usually an indication of greater tension. Figure 24 shows the use of simultaneous step-progressions to build tension in the opening measures of the double bass part.



solo tuning

Fig. 24--Simultaneous step-progressions used to build tension in opening of Allegretto.

Following the above passage, the bass plays an embellished arpeggiated chord in fourths which has almost no step-progression. This brings about a sudden release of the tension which has been building in the first six measures.

Arpeggios make it possible for a melody to progress in intervals other than seconds. This is possible because broken

¹⁵Ibid., p. 194.

chords can be used to shift a melody from one register to another without losing melodic coherence.¹⁶ Two notes in a step-progression will sound uninterrupted even if a broken chord separates the notes. An example of two notes in a step-progression separated by an arpeggio is shown in figure 25.



solo tuning

Fig. 25--The function of an arpeggio between two notes in a step-progression in Scherzo: Allegro assai.

The first measure of figure 25 is the same as the last measure of figure 23. There is a smooth progression from the high d at the top of the arpeggio to the low c-sharp at the end of the passage.

Step-progression and melody degree-progression are often instinctively apparent to the musically sensitive performer. Awareness of these two aspects of a melody is no panacea for musical playing; however, in the music of Hindemith, these two levels of analysis bring the performer to a closer understanding of the composer's process and intent. Further

¹⁶Ibid., p. 196.

taste and discretion is certainly required even if the performer is aware of both step-progression and degree-progression. Sometimes the performer has to decide which of several step-progressions to bring out the most. In the passage shown in figure 26, there is some question as to which is the most important, the step-progression or the melody degree-progression.

Melody Degree-Progression

Step-Progression
solo tuning

Fig. 26--Conflict between step-progression and melody degree-progression in Scherzo: Allegro assai.

If the performer accents the notes of the melody degree-progression too strongly, the smooth, chromatic step-progression would be less apparent. The musical instincts and judgment of the performer finally determine the worth of the performance, not the analysis. Approaching the music of Hindemith from the point of view of step-progression and melody degree-progression

does provide the performer with tremendous insight into the composer's technical approach. The analyst cannot help but become aware of the incredible smoothness of what Searle calls Hindemith's "diatonicised chromaticism."¹⁷

Synthetic Scales

One of the problems confronting composers after the breakdown of the major-minor system is how to use the twelve tones of the chromatic scale in an orderly and meaningful manner. Hindemith's theories of step-progression and melody degree-progression are fairly successful and account for a great deal of his technique; however, other modern theorists have presented concepts which elucidate Hindemith's compositional practice even further. Persichetti's treatment of synthetic scales is helpful in this regard.

The overtone series most obviously suggests the major scale, but according to Persichetti, "the major scale is only one of the many scales that is found in the upper reaches of the overtone series."¹⁸ Original or synthetic scales may be constructed by placing any number of major, minor and augmented seconds in any order. Some of the better known scales coincide with folk scales and have names such as Oriental, Hungarian Minor, Enigmatic, etc. Whether Hindemith consciously used synthetic scales or not is difficult to say; however,

¹⁷Humphrey Searle, Twentieth Century Counterpoint (London, 1954), p. 55.

¹⁸Vincent Persichetti, Twentieth-Century Harmony (New York, 1961), p. 43.

Often, as is the case in a melodic minor scale, a scale has a different form ascending and descending. The following passage in figure 28 uses such a scale.

Figure 28 shows two systems of musical notation. Each system consists of two staves. The top staff of each system contains four chords, each with a flat (b) above it, and a circled '8' above the first staff. The bottom staff of each system contains a melodic line that ascends and then descends, with a slur over it. The time signature is 3/2.

Fig. 28--Different ascending and descending forms of a synthetic scale used in Allegretto.

The scale used is illustrated below in figure 29.

Figure 29 shows the ascending and descending forms of the scale shown in Fig. 28. The scale is written on a single staff in 3/2 time, starting on a low note and ending on a low note.

Fig. 29--The ascending and descending forms of the scale shown in Fig. 28.

At the same time, the right hand plays another scale which is illustrated in figure 30.

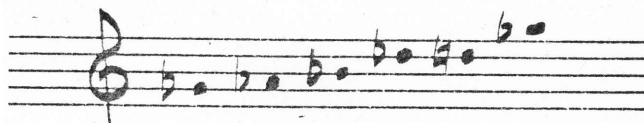
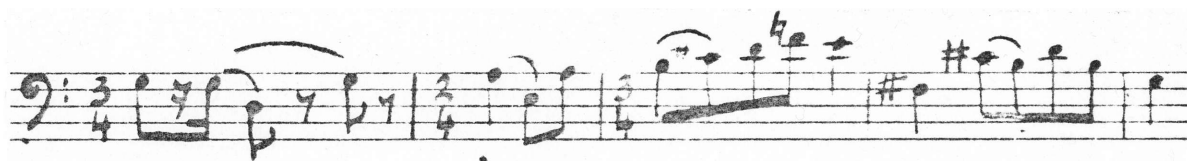


Fig. 30--Synthetic scale in the right hand of the passage shown in Fig. 28.

These examples show that distantly related scales can be used at the same time, as affirmed by Persichetti. The double bass plays yet another scale while the piano plays figure 28. This passage occurs at the end of the A section where dramatic tension is being built to be released by the contrasting B section.

A synthetic scale is also found in the opening of the Scherzo movement which is shown below in figure 31.



solo tuning

Fig. 31--Opening of Scherzo: Allegro assai

The synthetic scale used is illustrated in figure 32.

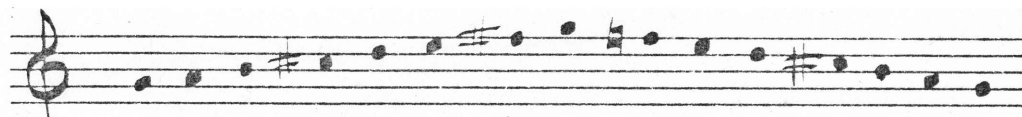


Fig. 32--Synthetic scale used in the opening of Scherzo: Allegro assai.

This is the Lydian mode with the leading tone altered in its descending form. The theme of the final movement is also modal, for it employs a strict Dorian mode except for the modulatory middle section.

The last three measures of the first subsection (measures 1-9) shift from the altered Lydian mode shown in figure 32 to a symmetrical scale. The passage is shown below in figure 33.



solo tuning

Fig. 33--Use of a symmetrical scale in Scherzo: Allegro assai.

The scale used above is spelled in figure 34.

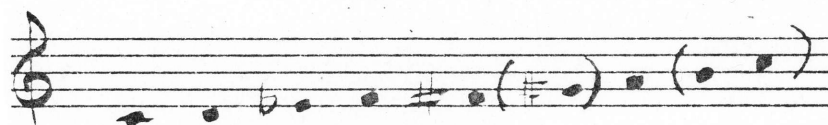


Fig. 34--Symmetrical scale used in passage illustrated in Fig. 33.

It is not certain whether Hindemith was aware of the scale formed by the above passage or he simply thought of the passage as a melodic sequence. An analysis can deal only with what is in the music; the composer's thought processes often must remain a matter of speculation.

Hindemith's Use of Tonality

Hindemith's works are generally tonal. He asserts the principle, "Tonality is a natural force, like gravity."²¹ In the context of a given tonality he freely employs all the tones of a chromatic scale, and has numerous brief excursions into remote tonalities; however, the return to the tonal center is inevitable. According to Machlis, Hindemith often cadences on simple triads, giving his music "a serenity that is one of its outstanding traits."²² The consistent return of the tonal center also contributes greatly to this serene quality.

To illustrate the chromaticism of Hindemith's tonality, consider the opening of the Double Bass Sonata. The following sequence of triads is found on the downbeats of the first four measures: b (open fifth), g minor, b-flat minor, and f minor. Each of these triads after the first is preceded by a chromatic embellishing chord, weakening the tonality even further. Next, chromatic thirds in the piano followed by a cadential passage lead back to a strong cadence in the original tonality with the piano's restatement of the theme in measure 10.

The basic tonal scheme of the formal divisions of the first movement (q.v. Fig. 1, p. 6), b f-sharp c b, is

²¹Hindemith, Craft, Vol. I, p. 152.

²²Machlis, Introduction to Contemporary Music, p. 201.

constantly interrupted by shorter passages providing chromatic tension by departing from the main tonalities. Measures 13 through 18 go to a tonal center of c and then f, measures 32 through 39 go briefly to f and a before returning to f-sharp, and measures 85 through 89 make up an extended phrase in c before the coda (measure 97) returns to the original key.

The use of contrasting tonal centers is not as clearly manifested in the second movement, as both the B and C sections are very unstable. The tonal scheme of the formal divisions is a b g a. In the B section there is a brief contrast of tonality on a sustained c-sharp (concert pitch) pedal in the bass. The c-sharp pedal becomes part of a highly embellished, barely recognizable dominant seventh chord built on f-sharp which returns to the basic tonality for the section, b. The C section wanders briefly in measures 56 through 59, returning to g minor in measures 60 through 63. From that point on in the C section there is no semblance of tonal stability until the return of the first theme in the original tonality of the movement, a. This means that the period of greatest instability in the movement precedes the final, climactic return of the original tonality.

The final movement is basically in the Dorian mode built on b. The use of modes reflects the fondness Hindemith had for old music. The theme and every variation have a section wandering to remote tonal areas. This provides a basis of structure for the variations and has been discussed in the

formal analysis in Chapter I. In addition, as the music builds in intensity, more chromatic tension is brought into play by the composer. Even in the most dissonant of the variations, however, the cadences are on simple triads or open fifths. Some transposition occurs in the last three repetitions of the head motive in the Recitativo, but their harmonic context does not permit them to be analyzed as a shift in tonality.

The implication of several tonalities at the same time is always too brief to be considered polytonal. Machlis states that a characteristic of Hindemith's music is the counterpoint of one chord against another rather than one line against another which he refers to as polyharmony.²³ Sometimes several tonalities are implied in the lines. For example, in measures 13 through 16 the tonalities of c minor and g-flat in the piano are pitted against a tonal emphasis of e (concert pitch) in the double bass part. According to Hindemith polytonality does not exist, for one pitch is always stronger than all the others. He also says that polytonal writing is plagued by accidental effects which can be avoided by the "skillful planning of the harmonic fluctuation," according to Hindemith's system.²⁴

The aspects of Hindemith's compositional techniques discussed in this chapter may be summarized as follows: (1)

²³Ibid.

²⁴Hindemith, Craft, Vol. I, p. 156.

The changing tension of chords or harmonic fluctuation is carefully planned. (2) The progression of the most important pitches in a melody move by seconds (step-progression) and the harmonic implications of a melody (melody degree-progression) move according to set principles. (3) Scales built of major, minor, and augmented seconds in any order (synthetic scales) are used as a melodic basis in several places. (4) All twelve tones of the chromatic scale are used freely with a tonal center, although temporary shifts of the tonal center occur fairly often.

CHAPTER VI

SUMMARY AND CONCLUSION

Awareness of the formal structure and an understanding of the compositional techniques are sometimes difficult to translate into precise performance indications. Analysis undoubtedly helps bring about a more meaningful performance, but it does not provide the performer with a single correct interpretation. Understanding the relations between parts of a work gives relative indications for performance, but not the only way to play a particular section or passage.

The analysis in this paper with regard to form and phrase structure has been quite thorough. It would be helpful at this point to summarize the findings of this paper, emphasizing points that are particularly important to the performer or points that are somewhat unusual. The summary will also include general indications for performance implied by the study of Hindemith's compositional techniques.

The first movement begins with a phrase that builds tension by the use of simultaneous step-progressions and the use of a pedal in both instruments. The second part of the phrase (second half of measure 6) liberates that tension with a passage covering considerable range and speeding the note values in the double bass. The double bass passage

is overlapped by the pedal in the piano which lasts through measure 7.

The piano's statement of the theme elides into a long phrase in the double bass (measure 13) which builds a considerable climax by the repetition of a two measure motive and a broadening of rhythmic values leading to the highest note in the double bass part thus far in the piece (measure 18).

The B section (measure 20) is a rounded binary within the rounded binary formed by the return of the A theme (measure 46). The B section begins with the repetition of a three measure motive with slight modifications. This is contrasted by the double bass melody (measure 32) which temporarily shifts the tonality. The return of the three measure piano motive (measure 40) is unusual in that the double bass plays a phrase grouped in 2 measure subphrases against the piano's 3 measure subphrases. This interplay of phrasing and the use of syncopation in the double bass build tension to the return of the A theme (measure 46).

The C section is unusual because of the use of $1\frac{1}{2}$ measure subphrases and the presence of cross currents in the accompaniment. The change to 2 measure subphrases in measures 61 and 69 should be brought out by the performers. The retransitional section (measure 72) should mount in tension. This section is interesting in that the dynamic level backs off and the recapitulation (measures 82) should be underplayed.

The augmented phrase in the recapitulation (measure 85-97) should be played with great cohesion to emphasize its length. The piano should also be concerned with making the long line of its chromatic descent until the coda (measure 97) very cohesive.

The Scherzo: Allegro assai should emphasize the use of contrast and repetition in its use of quasi-rounded binary form in the A and B sections. The contrast between the two sections themselves is also important. The differences in dynamics, melody, and character of the rhythms should be emphasized. The C section should build to the climax in tessitura, harmonic tension, dynamics, and length of notes which occurs in measure 69. The performers should also be careful to preserve the independence of overlapped phrasing between the two instruments in the C section; yet any rhythmic conflict which would lessen the drive of this section should be avoided.

There is considerable use of melody degree-progression in this movement. In this scherzo, for that matter in all of Hindemith's music, the progression in seconds between high points, low points, and points of rhythmic emphasis should be brought out in performance.

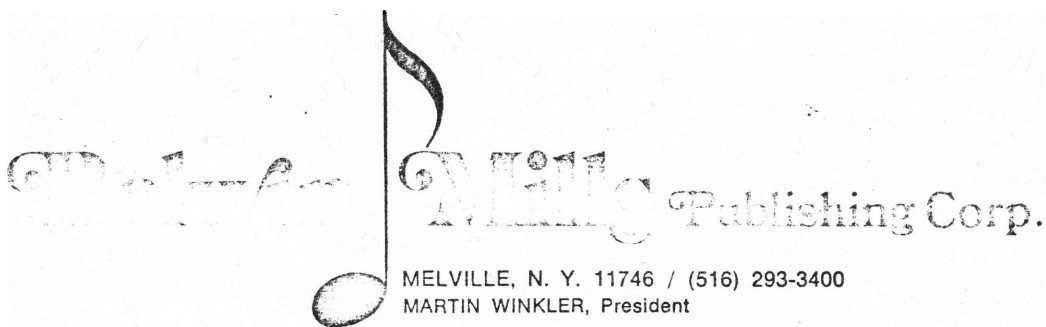
The final movement should begin with a clear statement of the theme in regard to its phrase structure and harmonic structure. The variations that follow are constructed in an organically unified manner, growing in texture, dynamics, and

speed of rhythm until the development-like fifth variation (measure 66). The sixth variation brings back the original theme in the piano. Care should be taken not to cover the theme in the piano with the dotted figures in the double bass countermelody. In the next section, the Recitativo, the performers should be aware of the phrase structure; but of course the designation Recitativo means that the interpretation may be quite free. The final section, the Lied, is unusual in its use of overlapped phrasing in measures 117 and 130 and considerable use of phrase extensions.

The compositional techniques that are most important to the performer are (1) the use of increased harmonic tension through the course of the individual movements, (2) the extensive use of seconds between important melodic points, and (3) the juxtaposition of brief shifts in tonality by using intervals with strong harmonic implications, such as perfect fourths, perfect fifths, and major thirds. Excitement should grow as harmonic tension increases and the progressions of melodic high points should lead smoothly. The harmonic color of the shifts in tonality must be delineated by the performers.

It should be reiterated that the awareness of compositional techniques, and even awareness of the formal structure, is no guarantee of a musical performance. It would be difficult to render a meaningful reading of this work, or of any piece of music, without an awareness of structure and compositional techniques; but ultimately the instincts and judgment

of the performer must come into play. There will always be questions of detail and degree which are not definitely answered by analysis or the composer's indications. Some of the relations are determined, but much is left to the taste and imagination of the performer. Fortunately, the performer's function remains that of a creative artist, although admittedly in a different realm from that of the freer creative domain of the composer.



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March 27, 1972

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