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**Hans Werner Henze's "Five Scenes from the Snow Country":
An analysis**

Chung, Yiu-kwong, D.M.A.
City University of New York, 1991

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HANS WERNER HENZE'S FIVE SCENES FROM THE SNOW COUNTRY:

AN ANALYSIS

by

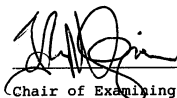
YIU-KWONG CHUNG

A dissertation submitted to the Graduate Faculty in Music in partial fulfillment of the requirements for the degree of Doctor of Musical Arts, The City University of New York.

1991

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Abstract

HANS WERNER HENZE'S FIVE SCENES FROM THE SNOW COUNTRY:
AN ANALYSIS

by

Yiu-kwong Chung

Advisor: Professor Joseph N. Straus

In the present study, Henze's Five Scenes from the Snow Country for Solo Marimba has been examined in five ways: (1) brief information about the composer, the background of the piece as well as the available recording and reviews; (2) comparative study of the two published editions; (3) analysis of the series, pitch structure, melodic devices, motivic coherence, textural devices, formal design, and rhythm; (4) discussion of the misprints that are "foreign" to the hexachordal context; (5) examination of the performance problems derived from technical demands of the music and discussion of interpretive decisions based upon analytical comprehension of the piece.

Several factors contributed to the selection of this piece for the present study. First, compositions for solo marimba written by a composer of high renown are conspicu-

ously few. Five Scenes from the Snow Country, composed by the celebrated German composer Hans Werner Henze, represents one of the finest recent compositions for solo marimba demanding from the soloist well-developed technical skills and mature musical judgments. Second, although this piece was published by Schott in 1982, it has generally been neglected by American percussion students and professional marimbists. Third, there has been no published analytical study of this piece prior to the present one. Fourth, there are numerous misprints in the first and the second editions.

In sum, the purpose of this study is multifold. The ultimate goal is to contribute to the popular recognition of the marimba. In addition, the analytical study will help marimbists prepare themselves to understand, perform and teach this piece. Finally, since performance problems derived from the technical, structural or expressive demands of the music will be examined, and possible solutions to those problems will be intensively discussed; the present analysis will give performers and theorists insight into the application of theoretical analysis to performance in general and to particular interpretive decisions.

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CHAPTER 1
INTRODUCTION

In the present study, Henze's Five Scenes from the Snow Country for Solo Marimba has been examined in five ways:

1. brief information about the composer, the background of the piece as well as the available recording and reviews;
2. comparative study of the two published editions;
3. analysis of the series, pitch structure, melodic devices, motivic coherence, textural devices, formal design, and rhythm;
4. discussion of the misprints which are "foreign" to the hexachordal context;
5. examination of the performance problems derived from technical demands of the music and discussion of interpretive decisions based upon analytical comprehension of the piece.

Purpose of the Study

Several factors contributed to the selection of this piece for the present study. First, compositions for solo marimba written by a composer of high renown are conspicuously few. Five Scenes from the Snow Country, composed by the celebrated German composer Hans Werner Henze, represents one of the finest recent compositions for solo marimba demanding from the soloist well-developed technical skills and mature musical judgments. Second, although this piece was published by Schott in 1982, it has generally been neglected by American percussion students and professional marimbists. Third, there has been no published analytical study of this piece prior to the present one. Fourth, there are numerous misprints in the first edition. Although quite a few have already been corrected in the second edition, many are still awaiting emendation.

The purpose of this study is multifold. The ultimate goal is to contribute to the popular recognition of the marimba. Second, the analytical study will help marimbists prepare themselves to understand, perform and teach this piece. Third, the present study will throw light on Henze's dodecaphonic techniques and his late compositional style. Finally, the performance analysis will give performers and theorists insight into the application of theoretical analysis to performance in general

and to particular interpretive decisions.

Since analytical articles regarding Henze's music are relatively inadequate and superficial, the present analysis is solely based upon this author's original approach. The methodology of this analysis derives primarily from writings about pre-serial atonality and twelve-tone music by Allen Forte, John Rahn, Milton Babbitt, Christopher Hasty, Andrew Mead, David Lewin and many others (see bibliography). The present analytical study focuses on set structure, segmentation, structural coherence, Henze's serial techniques, meter and rhythm, large-scale structure, and formal design. Performance problems derived from the technical, structural or expressive demands of the music, and possible solutions to those problems, will be intensively discussed. These possible solutions emerged after thorough preparation of this piece for several formal public performances.

Preliminary Notes

Before preceding to the core of this study, it is necessary to illustrate the methodology used in this dissertation for describing pitch-classes, pitches, sets, their operations and relationships. Throughout this study, pitch-class names are given as either uppercase letters or integers 0-e (t=10, e=11). Names of specific pitches are comprised of uppercase letters and integers: C1 (three octaves below middle C), C2 (two octaves below middle C), C3 (one octave below middle C), C4 (middle C), C5 (one octave above middle C), and so forth, with corresponding letters and integers for pitches lying within the octave above each. All references to pitch-class sets will be by Allen Forte's set-names and prime forms. When the members of the collection are displayed within squared brackets and separated by commas, the order in which the members are displayed is irrelevant. By contrast, hyphens between the members denote succession. Normal forms are indicated with hairpin brackets and prime forms with parentheses. Therefore, a series of pitches such as



can be notated in the following ways:

1. unordered pitch set
[F#4,G4,C#5] or [F#4,C#5,G4] or [G4,C#4,F#4] or
[G4,F#4,C#5] or [C#5,F#4,G4] or [C#5,G4,F#4]
2. ordered pitch-class set
[F#-G-C#] or [6-7-1];
3. ordered pitch set
[F#4-G4-C#5];
4. normal form
<C#,F#,G> or <1,6,7>;
5. prime form
(016);
6. Forte-name
3-5.

It should be noted that the normal form is generally used to describe pitch-class sets. Method no. 1 emphasizes the pitch level of each member. Whenever the study concentrates on the pitch-order in addition to the pitches or the pitch-classes themselves, method no. 2 or 3 will be used. Set operation, set relationships and forms of the series are labeled by customary symbols (see Fig. 1-1).

("A" refers to a collection and "n" to an integer)

Tn(A)	transposition of A by pitch-class interval n.
In(A)	inversion of A around zero and transposition by pitch-class interval n.
<u>n</u>	order number (underlined integer).
<u>Tn</u> (A), <u>In</u> (A)	rotational operation on set A.
P-0	primary series.
P-n	primary series at transposition level n.
I-n	inversion of P-0 at transposition level n.
R-n	retrograde of P-0 at transposition level n.
RI-n	retrograde-inversion of P-0 at transposition level n.
H1	hexachord formed by the first six pitch-classes of the series.
H2	hexachord formed by the last six pitch-classes of the series.
{ }	mosaics.

Fig. 1-1. Glossary of symbols

Since this composition is notated without barlines (except the opening of the fifth movement), location of note(s) is expressed as "system number/order number" (e.g., "9/12" stands for the twelfth note of the ninth system" and "9/1-12" stands for "from the first to the twelfth note of the ninth system". On the other hand, location of rests is expressed as "system number/the rest's order number R." The final "R" refers to "rest" and "9/2R" stands for the second rest in the ninth system. Note that each grace note or vertical simultaneity is treated as one individual count (see Example 1-1a). When music in the upper stave and that in the lower stave are contrapuntal, they will be notated separately. Under such circumstances, "U" followed the system number is referred to as "upper stave" and "L" as "lower stave." For example, "7L/3R" stands for "the third rest in the lower stave of the seventh system" (see Example 1-1b). For the opening of the fifth movement, the conventional abbreviation "m(m)" denotes "measure(s)," and "m. 1.2" stands for "the second beat of the first measure" (see Example 1-1c).

9/1 9/3 9/5 9/1R 9/2R 9/2I

pp

Example 1-1a shows a musical score with two staves. The top staff has notes with stems pointing down, and the bottom staff has notes with stems pointing up. Above the top staff, there are three groups of notes with labels: '9/1 9/3 9/5', '9/1R 9/2R', and '9/2I'. The first group has three notes with stems pointing down. The second group has two notes with stems pointing down. The third group has one note with a stem pointing down. The dynamic marking 'pp' is at the beginning.

Example 1-1a. Symbols expressing locations of notes

7U/1R 7U/1 7U/2

7L/1R 7L/1 7L/2 7L/4R

7L/3R

mf

Example 1-1b shows a musical score with two staves. The top staff has notes with stems pointing up, and the bottom staff has notes with stems pointing down. Above the top staff, there are labels: '7U/1R', '7U/1 7U/2'. Above the bottom staff, there are labels: '7L/1R 7L/1', '7L/2', '7L/4R', and '7L/3R'. The dynamic marking 'mf' is in the middle.

Example 1-1b. Symbols expressing locations of notes

m. 1.1 m. 1.2 m. 1.3 m. 2 m. 2.2

p

Example 1-1c shows a musical score with two staves. The top staff has notes with stems pointing up, and the bottom staff has notes with stems pointing down. Above the top staff, there are labels: 'm. 1.1 m. 1.2 m. 1.3 m. 2 m. 2.2'. The dynamic marking 'p' is at the beginning.

Example 1-1c. Symbols expressing locations of notes

Performance History

Composed in 1978, Five Scenes from the Snow Country was commissioned and first premiered by Michiko Takahashi in Tokyo in 1982. Takahashi has made three commercial recordings, but none of those includes Henze's Five Scenes from the Snow Country.¹ The only available commercial recording that includes this piece is Franz Lang's performance on the CD/LP recording entitled Percussion Today, produced by Hochschul-Percussion Trossingen in 1985 (Wergo 60123-50).

Reception History

This piece has not won critical acclaim. In his review, Larry White emphasizes its technical difficulties and Henze's adoption of the Japanese compositional style:

The work mirrors Tanaka and Miki, to name a few, in compositional style and form. Only the more accomplished college-level percussionist should realistically attempt to tackle this intense work, if the ideal desire is a masterful performance in the Japanese vein. As with earlier pieces, Henze must have used as role models Conversations, Torse III, and Two Movements for Marimba.

...Henze has written a monster--a definite challenge to even a performer well-tutored in the Japanese marimba school.²

Richard Egart in his review of the above-mentioned recording Percussion Today even stated:

...Henze's "Five Scenes..." is for solo marimba, and is written in a very "random" fashion, with little bursts of sound alternated with low, rolling sounds, with no apparent structure. It's the kind of piece that might cause one to ask, "Just because someone wrote it down, does that make it a composition?"³

This piece is actually quite well-known in Europe, particularly in Germany. In 1986, it was even on the competition program of the International Music Competition of ARD (Munich Competition). In contrast, it has been scarcely performed in the U.S.A. An investigation of over 2000 recital programs (submitted by American college students, faculties and professionals) listed in Percussion Notes, the publication of Percussive Arts Society, reveals that only three programs have included this piece since 1982 (the year of publication of the Five Scenes from the Snow Country). Perhaps the inaccessibility of the music, disheartening reviews, lack of appropriate analytical approach, and technical difficulties are the reasons for American percussionists' treating this piece with indifference.

Composer Background

Hans Werner Henze was born in Guetersloh, Westphalia, on July 1, 1926. In 1942, he attended the Brunswick State Music School where he studied piano, theory and percussion. By selecting percussion he was able to play in the school orchestra.⁴ As Geitel points out, Henze's early percussion training at the Brunswick State Music School strongly influenced his percussion writing in the future:

Henze's preference for percussion probably traces back to these Brunswick studies. At least he certainly learned what he could demand from percussionists in the future.⁵

Prior to Five Scenes from the Snow Country, Henze wrote three major chamber works in which percussion plays an important role: Des Kaisers Nachtigall (1959), El Cimarron (1969-70), and Prison Song for Solo Percussion and Tape (1971). The marimba writing in Des Kaiser Nachtigall, which features wide leaps, rapidly reiterated notes, grace notes and dynamic contrasts, the separation of the marimba from the non-pitched percussion section, and the coloristic use of the marimba in combination with the celesta and piano, shows Henze's preference for and understanding of this instrument's coloristic and melodic potentialities as early as 1959. El Cimarron is written for baritone, flutist, guitarist and one percussionist who

plays over fifty percussion instruments. However, Henze made very little use of marimba in this piece. The marimba is prominent in only two sections, Der Wald and Die Frauen, where Henze mainly used marimba to reproduce the mood of the characteristic Cuban dance--son. In Prison Song, the marimba also has a very small part, although this piece is scored for a large battery of percussion instruments.

As for Henze's compositional training, he studied privately with Wolfgang Fortner in Heidelberg between 1946 and 1948; in addition, he participated in Rene Leibowitz's summer courses on Schoenberg at Darmstadt in 1947 and 1948. "It is to Fortner," Henze wrote, "that I owe a knowledge of the old method of composition, traditional counterpoint, and the art of fugue. At the same time, Fortner gave me a comprehensive introduction to the realm of modern music and the aesthetic problems connected with contemporary composition." ⁶ In addition, it was through Fortner that Henze encountered masterpieces by Hindemith, Bartok, Berg and Stravinsky, and Henze immediately took an intense interest in all of them. However, during this phase of training with Fortner, Henze still had conflicts with the Schoenbergian dodecaphonic technique. It was not until he was guided by Leibowitz and Rufer, a friend of Schoenberg's, that Henze began to understand and cherish the dodecaphonic principles. From 1948 to about 1952,

Henze adhered to Schoenberg's principles strictly, even more strictly than Leibowitz and Rufer. However, as Henze himself admitted, treating the twelve-tone method only as a compositional means, he has never allowed it to inhibit his freedom of expression.⁷ During the interview by Dieter Rexroth, Henze revealed that he had relied less and less on twelve-tone method to produce structural cohesiveness. Even when he employed this method, he attempted to make his music sound lively and easy instead of strict and hard.⁸ As analyses by David Symons and Hansjoerg Pauli point out, in his early works Henze often adopted only one series for an entire piece, and the series, being similar to those of Berg,⁹ always contain triadic subsegments:

Piano Variations (1948)

F#	C#	D	G#	B	D#	E	F	C	A	Bb	G
			-----				-----				
			G# minor				F major				

Apollo et Hyacinthus (1949)

G#	C#	E	Eb	Bb	G	D	F#	A	F	B	C
			-----				-----				
			C# minor				Eb major		D major		

Symphony No. 3 (1950)

B	G	Bb	Eb	E	A	G#	C#	D	F#	C	F

			Eb major								

Fig. 1-2. Henze's early series

Although Henze's series often retain triadic implications and show great affinity to those of Berg, Henze never adopted Berg's permutational procedures for deriving series from one another. By articulating intervals inherent in the series such as third and fifth, Henze achieves two goals: thematic unity on the basis of related interval successions, and compromise between tonal and twelve-tone vocabularies.

Background of the Composition

Henze, while he was in Stuttgart, composed Five Scenes from the Snow Country during a weekend in December 1977.¹⁰ Although many excellent Japanese compositions for solo marimba in the early seventies could serve as models, this piece is by no means a pale imitation of the Japanese school of marimba writing. As the title reveals, it is a musical snapshot of scenes of dancing snowflakes. According to Takahashi, the "Snow Country" of the work's title actually refers to the mountainous area of Nigata in Japan.¹¹ Henze himself has been quoted as saying that the idea of this composition is based on his experience of being exposed to the snowfall:

He [Henze] relates that continuous snow fall inspired this composition: "Twice during short pauses in the storm I went into the woods and noticed the effect of drifts and the collection of snow crystals that sparkled in the sun."¹²

It seems safe, therefore, to conclude that the Japanese winter landscape exercised a strong influence upon Henze when he was composing this piece.

Henze manipulates the twelve-tone method freely in this work. Five Scenes from the Snow Country consists of five movements, and the last four are composed using dodecaphonic techniques. Unfortunately, it is very difficult to track down the ordering of the series in the second and the fourth movements because of the misprints and non-serial elements. However, Henze clearly presents a series at the outset of the third movement and, as this author will show, this series (Series B) is derived from the primary series (Series A) that Henze employs in most of the rest of the piece. Series A and Series B are related by interchanging the last two dyads:

Series B (as found at the outset of the third movement)

t 7 8 e 2 3 4 0 5 9 6 1

Series A (the primary series)

t 7 8 e 2 3 4 0 6 1 5 9

Fig. 1-3. Comparison of Series A and B

Series B is employed only at 1/1-2/15 in the third movement and in m. 1 of the fifth. Since Series A is more often used, all series-forms discussed in the present

study refer to Series A, unless otherwise mentioned (e.g., "I-0" = I-0 of Series A; "I-0(B)" = I-0 of Series B). Because Series A does not include strong tonal implications like those of Henze's earlier works, no specific tonal area is explicitly presented in the music except in the middle of the third movement where an e-minor triad is constantly articulated. Although the H2 of Series B retains triadic references such as F major <5,9,0> and f# minor <6,9,1>, the partitioning of this series negates such tonal implications. The dodecaphonic method in this work involves an interplay of Schoenberg's and Hauer's methods. That is to say, sometimes, especially in free-rhythmic passages, the two constituent hexachords (H1 and H2) are treated as basic harmonic units, and the note succession within them, which can be changed at will, has no referential importance (e.g., at 5/15-6/11 and 8/3-the end in the third movement, 1/14-2/15 and 3/7-4/5 in the fourth, and mm. 11.2-12 and 7L/2-7 in the fifth, to list only a few).

Besides derived series and Hauer's hexachordal approach, rotation, omission of series members, registral retention and anticipation of series members (to be intensively discussed in Chapter 3), and non-serial elements are also widely employed in this work. Although the two discrete hexachords (H1 and H2) do not have any combinatorial property (except the trivial R-combinatoriality at

the T0 level), the segmental relationship between series-forms is worth discussing. It should be noted that the minimal cardinality of the invariant segment to be discussed in this study is 2, and the maximal is 6.

There are a total of fifteen different segmental relations between any series forms, and they are numbered as "A" through "O" in Fig. 1-4. The ranking of these fifteen relations is primarily based on the invariance-cardinality; higher invariance-cardinality results in higher ranking. An invariance-cardinality is a list of the cardinality of the invariant segment shared by a pair of series-forms, and it is arranged in order and notated in exponential notation. As Fig. 1-5 shows, the retrograde operation usually affects the segmental relation with respect to the inter-relation of the order-number sets associated with the invariant segments. If a pair of series is A-segmentally-related, their relation will remain unchanged when both series are retrograded, since the interrelation between the yielded order-number sets associated with the invariant segments does not change. However, if only one of the series is retrograded, the inter-relation of the yielded order-number set will thus differ from the original, and the new segmental relation will be labeled as "A'."

P-0: 5 8 7 4 1 0 e 3 9 2 t 6

	Invariant segment cardinality
A. R-n : I-n R-0: <u>6 t 2 9 3 e</u> <u>0 1 4 7 8 5</u> I-0: <u>5 2 3 6 9 t e</u> <u>7 1 8 0 4</u>	6/5
B. R-n : RI-(n+2) R-0: <u>6 t 2 9 3 e 0 1 4 7 8 5</u> RI-2: <u>6 2 t 3 9 1 0 e 8 5 4 7</u>	5/4/3
C. I-n : P-(n+2) I-0: <u>5 2 3 6 9 t e 7 1 8 0 4</u> P-2: <u>7 t 9 6 3 2 1 5 e 4 0 8</u>	5/3
D. R-n : P-(n+2) R-0: <u>6 t 2 9 3 e 0 1 4 7 8 5</u> P-2: <u>7 t 9 6 3 2 1 5 e 4 0 8</u>	5
E. I-n : P-(n+3) I-5: <u>t 7 8 e 2 3 4 0 6 1 5 9</u> P-8: <u>1 4 3 0 9 8 7 e 5 t 6 2</u>	3^2
F. R-n : R-(n+4) or I-n : I-(n+4) R-0: <u>6 t 2 9 3 e 0 1 4 7 8 5</u> R-4: <u>t 2 6 1 7 3 4 5 8 e 0 9</u>	$3/2^2$
G. I-n : I-(n+1). I-0: <u>5 2 3 6 9 t e 7 1 8 0 4</u> I-1: <u>6 3 4 7 t e 0 8 2 9 1 5</u>	$3/2^2$
H. RI-n : RI-(n+4) RI-5: <u>9 5 1 6 0 4 3 2 e 8 7 t</u> RI-9: <u>1 9 5 t 4 8 7 6 3 0 e 2</u>	3/2
I. RI-n : R-(n+6) RI-2: <u>6 2 t 3 9 1 0 e 8 5 4 7</u> R-8: <u>2 6 t 5 e 7 8 9 0 3 4 1</u>	3
J. P-n : I-(n+3) P-5: <u>t 1 0 9 6 5 4 8 2 7 3 e</u> I-8: <u>1 t e 2 5 6 7 3 9 4 8 0</u>	2^4

Fig. 1-4. Segmental relations

K.	I-n	:	P-(n+1)		
	I-0:		<u>5</u> <u>2</u> <u>3</u> <u>6</u> <u>9</u> t e <u>7</u> 1 8 0 <u>4</u>		4
	P-1:		<u>6</u> <u>9</u> 8 <u>5</u> <u>2</u> 1 0 <u>4</u> t 3 e <u>7</u>		2
L.	P-n	:	I-(n+1)		
	P-0:		5 8 <u>7</u> <u>4</u> 1 0 e 3 <u>9</u> <u>2</u> t 6		3
	I-1:		6 3 <u>4</u> <u>7</u> t e <u>0</u> 8 <u>2</u> <u>9</u> 1 5		2
	(less significant)				
M.	P-n	:	P-(n+5) or		
	I-n	:	I-(n+5)		
	P-5:		t 1 0 9 <u>6</u> <u>5</u> <u>4</u> <u>8</u> 2 7 3 e		2
	P-10:		3 <u>6</u> <u>5</u> 2 e t 9 1 7 0 <u>8</u> <u>4</u>		2
N.	R-n	:	R-(n+6) or		
	RI-n	:	R-(n+6)		
	RI-n	:	R-(n+4)		
	I-n	:	P-(n+5)		
	R-n	:	RI-(n+4)		
	P-n	:	I-(n+5)		
	R-0:		6 t 2 <u>9</u> <u>3</u> e 0 1 4 7 8 5		2
	R-6:		0 4 8 <u>3</u> <u>9</u> 5 6 7 t 1 2 e		
	RI-0:		4 0 8 <u>1</u> <u>7</u> e t 9 6 3 2 5		
	R-4:		t 2 6 <u>1</u> <u>7</u> 3 4 5 8 e 0 9		
	I-0:		5 2 3 <u>6</u> <u>9</u> t e 7 1 8 0 4		
	P-5:		t 1 0 <u>9</u> <u>6</u> 5 4 8 2 7 3 e		
	R-0:		6 t 2 9 <u>3</u> <u>e</u> 0 1 4 7 8 5		
	RI-4:		8 4 0 5 <u>e</u> <u>3</u> 2 1 t 7 6 9		
	P-0:		5 <u>8</u> <u>7</u> 4 1 0 e 3 9 2 t 6		
	I-5:		t <u>7</u> <u>8</u> e 2 3 4 0 6 1 5 9		
O.	P-n	:	P-(n+3) or		
	I-n	:	I-(n+3)		
	P-0:		5 8 <u>7</u> <u>4</u> 1 0 e 3 9 2 t 6		
	P-3:		8 e t <u>7</u> <u>4</u> 3 2 6 0 5 1 9		

Fig. 1-4. (continued)

segmental relations	series to be compared	inter-relation of order-number sets
A	RI-1: <u>519280</u> et7436 P-1: 698521 <u>04</u> t3e7	(0, 1, 2, 3, 4, 5) (1, 2, 3, 4, 5, 6) T1/Te related
A	I-1: 6347te <u>082915</u> R-1: 7e3t40 <u>125896</u>	(6, 7, 8, 9, t, e) (5, 6, 7, 8, 9, t) T1/Te related
A'	I-1: 6347te <u>082915</u> P-1: <u>69852104</u> t3e7	(6, 7, 8, 9, t, e) (1, 2, 3, 4, 5, 6) T5/T7 related

Fig. 1-5. Segmental relations caused by retrograde operation

These segmental relations are not all articulated on the musical surface. In fact, as the analysis in the next few chapters shows, Henze's partitioning of the series sometimes obscures some high-ranked relations (from A to E). Fig. 1-6 summarizes the inter-relations between any pair of series-forms. This table also indicates that, if its transposition levels are separated by interval-class 5, a pair of series-forms will be minimally similar with respect to segmental invariance. On the other hand, if their transpositional levels are the same or separated by interval-class 2, they are maximally similar.

(Let integers n and $x = 0$ to 11)

series to be compared		segmental relations
I-n:I- or RI-(n+x)	P-n:P- or R-(n+x)	
x=1 or 11	x=1 or 11	G or G'
x=2 or 10	x=2 or 10	D or D'
x=3 or 9	x=3 or 9	O or O'
x=4 or 8	x=4 or 8	H or H'
x=5 or 7	x=5 or 7	M or M'
x=6	x=6	N or N'
I-n:P- or R-(n+x)	P-n:I- or RI-(n+x)	
x=0	x=0	A or A'
x=1	x=11	K or K'
x=2	x=10	C or C'
x=3	x=9	E or E'
x=4	x=8	N or N'
x=5	x=7	N or N'
x=6	x=6	I or I'
x=7	x=5	N or N'
x=8	x=4	N or N'
x=9	x=3	J or J'
x=10	x=2	B or B'
x=11	x=1	L or L'

Fig. 1-6. Inter-relations between series-forms

The most structurally important hexachords in the first movement are actually derived from rotations of Series B. For example, the initial 6-Z42 hexachord of the first movement is the H1 of $\underline{T7(I-11(B))}$ and the final 6-Z36 of the first movement is the H1 of $\underline{T3(I-7(B))}$:¹³

I-5(B)	t 7 8 e 2 3 4 0 5 9 6 1
I-11(B)	4 1 2 4 8 <u>9</u> t 6 e 3 0 7
$\underline{T7(I-11(B))}$	<u>9</u> t 6 e 3 0 7 4 1 2 5 8 6-Z42
I-7(B)	0 9 t 1 4 5 6 2 7 <u>e</u> 8 3
$\underline{T3(I-7(B))}$	<u>e</u> 8 3 0 9 t 1 4 5 6 2 7 6-Z36

Fig. 1-7. Relation of Series B and structurally important hexachords in Movement I

However, there is no dodecaphonic technique employed in the first movement. In addition, with the exception of set-class 2-1 (01), those articulated set-classes such as 3-5 (016), 4-9 (0167), 6-Z42 (012369), and 6-Z36 (012347) in the first movement are very weakly presented in the remaining movements; therefore, in terms of pitch structure, the first movement is sharply differentiated from the rest of the piece.

Misprints and Differences of Editions

This piece has two editions. At first glance, the editions appear identical. They have the same cover design, title pages, first-performance history pages and copyright notices.¹⁴ The first edition was published in 1982 by Schott, but the date of publication of the recent revised edition is unspecified. However, due to the fact that no publishing history or additional information concerning editorial emendation is supplied in the revised edition, the new edition was probably published in the same year. One would expect all misprints to be corrected in the new edition, and many of them are. The differences between each of the editions are listed and discussed in this section. In addition, it should be emphasized that it is the new edition which will be considered in the structural and performance analysis contained in this dissertation, unless otherwise indicated. Therefore, a reader who has only the old edition should correct the misprints therein according to Table 1-1.

Table 1-1.--Comparison of Editions

OLD EDITION	REVISED EDITION
Symbol of Fingertips	
∪	∩
* The difference is found only in the page of symbols (page 5). In the music, both editions use ∪ as symbol of fingertips.	
Movement I missing. missing.	accent mark, 9/21. triplet sign, 10/27-29.
Movement II triplet sign, 1/10-12. "p" at 2/4. [E3,G3] at 4/26, 8th-note. two beams.	erased. "p" at 2/1. 16th-note. quintuplet for eighth-note duration, three beams, 4/29-31.
missing.	treble clef, lower stave, 9/11.
missing.	bass clef, lower stave, 10/12 to end.
Movement III A4 at 7/5.	B4.
Movement IV missing. G2 (beyond the range of a 4-1/3-octave marimba) and B2, 5/9. G3, 5/10. missing. [C#5,E5] at 14/5, 14/15.	staccato signs, upper stave, 2/1,3,5,7,9. erased. erased. "p" at 13/6. [A4,C#4].

Table 1-1.--(continued)

Movement V	
4-note chord, m. 13, [E#3,C4,Bb4,E5]. bass clef.	6-note chord, m. 13, [F#3,A3,C4,Bb4,C#5,E5]. treble clef, the 8th system, lower stave.
missing.	ledger line for B3, at 11/10.
missing.	flat-sign for Bb2, sharp- sign for C#4, bottom stave, 16/23, 16/26.
B5 at 16/11.	D6.

As Table 1-1 shows, many misprints have already been emended in the revised edition. Nonetheless, mistakes remain. Some errors that apparently slipped by both the publisher and composer are still awaiting emendation. A total of thirty-one errors in the revised edition have been found. Of these thirty-one errors, only two are typographical; both of them are obvious notational mistakes and therefore naturally the least problematic (see Table 1-2, nos.7 and 21). The rest violate the prevailing idiom of the composition, therefore it is difficult to prove that they are "mistakes" without knowing the composer's intentions. The proposed "corrections" are based on three principles: (1) all suggested notes correlate with the serial context, especially when the twelve-tone order-

ing is explicit; (2) almost all of the suggested notes neighbor the printed suspected wrong notes; (3) some suggested notes differ from the printed by clef and accidental. In short, the present reading assumes that the errors might have arisen from misplaced notes as well as omission of accidental or clef.

In the summer of 1990, this author sent letters to the publisher and the composer asking for confirmation of the proposed corrections and finally received reply from Henze three months later. In his letter, besides providing more information concerning the composition's background, Henze confirmed that all of the suggested emenda-¹⁵tions are correct. These thirty-one errors are listed in Table 1-2:

Table 1-2.--The thirty-one misprints

Movement	Location	Description	
1.	I	2/10R	32nd-note rest instead of 16th-note rest
2.	I	6/14-16	32nd-notes instead of 64th-notes
3.	II	1/2	Ab3 instead of Bb3
4.	II	5/26	Gb6 instead of G6
5.	II	6/18	E#5 instead of E5
6.	II	7/1	G3 instead of F3
7.	II	7/16-19	32nd-notes
8.	II	7/24	B4 instead of D5
9.	II	8/7	F#5 instead of G#5
10.	II	8/14	F3 instead of A3
11.	II	8/24	D#3 instead of E#3
12.	II	entire 10th system lower stave	bass clef
13.	II	10/1	F#6 instead of F6
14.	II	10/5	D#4 instead of F#4
15.	III	7/4	D5 instead of C5
16.	IV	2/12	F3 instead of G3
17.	IV	3/4	C5 instead of A4
18.	IV	3/9	G3 instead of A3
19.	IV	4/12	C3 instead of E3
20.	IV	7/8	A4 instead of B4
21.	IV	13/5-6 13/8 13/11 (all lower stave)	bass clef treble clef bass clef
22.	V	10/2-3 10/8 - the end (all lower stave)	treble clef bass clef
23.	V	10L/12	D#3 instead of C#3
24.	V	11/4	E3 instead of G3
25.	V	12/16	D3 instead of E3
26.	V	13/3	G4 instead of A4
27.	V	13/12	D5 instead of E5
28.	V	14/23	G4 instead of F4
29.	V	15/8	G4 instead of A4
30.	V	15/10	F3 instead of G3
31.	V	16/6	G5 instead of F5

NOTES

1. These three recordings are Cristallina Glass Harp (CBS/SONY 32 DG 83); Contrabass Marimba Explosion (CBS/SONY 32DC 5027) and Super Marimba (CBS/SONY 30DC 5210).
2. Larry White, review of Five Scenes from the Snow Country, by Hans Werner Henze, in Percussive Notes 24, no. 5 (1986): 85.
3. Richard Egart, review of Percussion Today, by Hochschul-Percussion Trossingen, in Modern Percussionist 3, no. 4 (1987): 54.
4. Klaus Geitel, Hans Werner Henze (Berlin: Rembrandt, 1968), 14.
5. "Auf diese Braunschweiger Studien geht HENZES Vorliebe fuer die Batterie wahrscheinlich zurueck. Zumindest weiss er in Zukunft genau, was er von Schlagzeugern verlangen kann..." (translation mine). Geitel, Henze, 14.
6. Hans Werner Henze, Music and Politics--Collected Writings 1953-81, trans. Peter Labanyi (Ithaca, New York: Cornell University Press, 1982), 24.
7. The New Grove Dictionary of Music and Musicians, (London: Macmillan, 1980), s.v. "Henze, Hans Werner," by Robert Henderson.
8. Dieter Rexroth, "Ich begrieffe mich in der Schoenberg-Tradition: Hans Werner Henze im Gespraech," Neue Zeitschrift fuer Musik 11 (November 1986): 23-7.
9. Hansjoerg Pauli, "Hans Werner Henze's Italian Music," Score 25 (1959), 26-37; David Symons, "Hans Werner Henze: The Emergence of a Style," Studies in Music III/3 (1969): 35-52.
10. See Appendix III.

NOTES (continued)

11. Interview with Michiko Takahashi, conducted by this author at Morris Lang's residence, New York City, 17 January, 1990. See also Henze's letter (Appendix III).

12. Volker Schliess, jacket notes of Percussion Today, Wergo 60123-50, tran. by John Patrick Thomas.

13. For more on notation and operation of series rotation, see Andrew Mead, "Some Implications of the Pitch Class/Order Number Isomorphism Inherent in the Twelve-Tone System: Part I," Perspectives of New Music 6/2 (1988): 96-163.

14. A copyright notice "© B. Schott's Sohne, Mainz, 1982" appears at the bottom of page 1 and at the lower corner of page 6 in both editions.

15. In Henze's letter (see Appendix III), one can find inconsistency in his comments on this author's emendations. He first said that this author's suggested corrections were "99% right," but later said the music was "entirely corrected."

CHAPTER 2

THE FIRST MOVEMENT

As noted in the previous chapter, the first movement does not use any twelve-note series as its basis. The two hexachords of greatest importance at the immediate surface and at the deepest structural level, however, are derived from the rotation of Series B employed at the outset of the third and fifth movements (see Fig. 1-7). To start the analysis of the first movement, rather than beginning with such a large collection as a hexachord, it would not be amiss to plunge right into an examination of the musical surface--the very opening and ending of this movement.

Distinctive Pitches and Set-Classes

Perhaps the most striking feature of this movement is the prolonged use of A2 to open and close the movement. A2 is followed by and preceded by the Bb2 at the opening and the ending of this movement respectively. The [A2,Bb2] dyad, a member of set-class 2-1 (01), thus frames the entire movement. Many distinct vertical components in this movement are members of this set-class. For example,

the reiterated [E3,F3] at 3/18-38, [F5,Gb5] at 9/1-12, and [Eb4,E5] at 9/13-17. Also note that between the initial [A2,Bb2] and the [E3,F3] at 3/18, the music passes through a few (01) dyads: [Bb2,B3] at 1/10, [B2,C3] at 2/6, and [C3,C#4] at 2/8. Close examination reveals that of sixty-one simultaneously attacked vertical components in this movement, fifty are members of set-class 2-1 (01), three are of set-class 2-5 (05), six are of set-class 2-2 (02), and two are of set-class 3-5 (016) which contains (01) and (05).

Many of those above-mentioned vertical (01) dyads can form members of set-class 3-5 with their surrounding notes: for example, <A,Bb> at 1/3 with the Eb at 1/5, <B,C> at 2/6 with the F# at 2/7, <F##,G#> at 5/39 with the D at 5/37, <F,Gb> at 9/5 with the C at 9/3, and <Eb,E> at 9/14 with the A at 9/16, to list only five. Moreover, a look at 5/1-4, 7/1-4, and 7/27-30 reveals that a few linear segments are also members of set-class 3-5. Besides prominence, another factor contributing to the distinctiveness of the 3-5 set-class is that its members are used to open and close musical phrases. Set-class 3-5, the members of which start and then permeate this movement, is the primary musical idea, and this movement can thus be heard in terms of the varied presentations of this musical idea.

Example 2-1 shows how the opening 3-5 (016) trichord is developed over the entire movement and finally brought back to its original form near the end. In the musical surface, there are quite a few 3-5 trichords juxtaposed or overlapped with one another, and the combination of two of these 3-5 trichords can form two larger pitch-class collections: 4-9 (0167) and 6-242 (012369). It is interesting to note that the initial statement of 6-242 of this movement is transposed first by interval-class 1, then by 6, referring those intervals to the constituent intervals of the 3-5 (016) set-class itself.

The diagram illustrates the transpositions of the initial statement of the 6-242 pitch-class collection. It features two staves of musical notation. The top staff contains five trichords, each enclosed in an oval and labeled with an interval class: I₁₀, I₅, I₃, I₇, and I₁₀. The bottom staff contains four trichords, also in ovals, labeled I₀, I₉, T₁, and T₀. Brackets labeled '6-242' are placed between the staves, indicating the pitch-class collection formed by pairs of trichords. A solid arrow labeled 'T₁' points from the first trichord (I₀) of the bottom staff to the second trichord (I₅) of the top staff. A dashed arrow labeled 'T₆' points from the first trichord (I₀) of the bottom staff to the third trichord (I₃) of the top staff.

Example 2-1. Transpositions of the initial statement of 6-242

In addition to the use of an [A2, Bb2] dyad as a structural frame, another striking feature of this movement is the F#/G# relation. Aside from A2, the G#5 at 5/35-6/19 and the Gb5 at 9/1-10 are probably the most heavily emphasized pitches in this movement mainly because of their lengthy reiteration. Moreover, the F#/G# relation is further enhanced by the similar rhythmic profiles and the transpositional relation of these two passages: 5/35-6/19 and 9/1-10. It is also these two pitch-classes which frame the registral space of the "finger-nail" segments at 2/8-14 and 3/5-15. A close look at the initial and the final hexachords of this movement reveals that their formations are also affected by the F#/G# relation. Note that the opening 6-Z42 hexachord <A,Bb,B,C,Eb,F#> and the final 6-Z36 <G#,A,Bb,B,C,Eb> have five pitch-classes--A, Bb, B, C, and Eb--in common, and the two remaining pitch-classes that they do not share are exactly F# and G#.

F# and G# together form a statement of set-class (02), the members of which are extremely prominent in the passage at 7/31-8/32. This passage is characterized by a descending whole-tone scale (containing many interlinked (02) dyads) articulated in the upper register leading from the climactic F#6 (pitch-class F# again!) at 7/31. If trichord 3-5 and dyad 2-1 represent the basic sonorities

of this movement, the passage at 7/31-8/32 then consists of a compositional idea (set-class 2-2) that is not only clearly contrasting in nature to those of the rest of the movement but also of structural importance. For set-class 2-2 (02) is employed earlier (rather implicitly) to frame those "finger-nail" segments registrally, and most significantly, in the deepest structural level, the 02 dyadic relation (F#/G#) governs the harmonic direction of the entire movement: the move from the initial <A,Bb,B,C,Eb,F#> hexachord to the final <G#,A,Bb,B,C,Eb> hexachord.

Formal Structure, Retrograde Symmetry, and Set Relations

The first movement consists of five sections that are clearly separated by either pauses or rests: 1/1-3/38, 4/1R-5/2R, 5/3R-7/30, 7/31-8/32, 9/1-11/19R. The similarities of Section I and Section V are quite discernible: both sections open with a trichord 3-5 which is embedded in a larger set, 6-Z42. The same two pitches (A2 and Bb2) start Section I and conclude Section V. Set-class 2-1 (01) appears in both sections as a distinct vertical component. Pitch-repetition, which is presented briefly at the beginning and the end of Section I, becomes the chief rhythmic characteristic in Section V. In addition, pitch-class D is not presented in either section.

Another member of 3-5 set-class, with pitch content [C4,C#5,G4], appears in both Section I (2/8-9) and Section V (9/27) dividing these sections into two parts. The first part of Section V produces a member of set-class 8-9 <3,4,5,6,9,t,e,0> that is also formed by all segments--with identical pitch-class content--played by mallets (instead of finger-nails) in a relatively low register in Section I.

The image shows two sections of a musical score, Section I and Section V, with various pitch-class set annotations. Section I is marked 1/1 and Section V is marked 9/1. The score consists of three staves for each section. Annotations include circled numbers like 3-5, 4-5, 6-242, 7-15, 7-19, 8-9, 7-236, and 6-236. Some annotations are connected by lines across different staves, indicating relationships between notes in different parts of the music. The notation includes notes, rests, and dynamic markings like *p* and *pp*.

Example 2-2. Pitch-class sets in Sections I and V

In comparing the "finger-nail" segments of Section I (2/8-14 and 3/5-15) with the second part of Section V (9/17-end), we obtain the following results: (1) both open with pitch-classes [7,0,1], a member of set-class 3-5. (2) The opening segment (member of set-class 7-Z36) of the second part of Section V (9/27L-10/19) is maximally similar to the "finger-nail" segments due to strong representation of their Rp and Rl relationships. Therefore, in terms of pitch structure, the first part of Section V echoes the "mallet" segments of Section I whereas the second part of Section V bears maximum intervallic similarities to the "finger-nail" segments. In order to ensure tighter coherence, a member of set-class 4-1, which is a common subset shared by 6-Z42 (set-class of the opening hexachord of this movement), 6-Z36 (set-class of the last hexachord of this movement) and 7-19 (set type of the "finger-nail" segments), is employed once again to conclude the movement (Example 2-2).

A member of set-class 4-1 can also function as an axial subset within a 6-Z42 set since both of them are symmetrical sets. Using set-class 4-1 as an axis, one can arrange a member of set-class 6-Z42 as two overlapping members of set-class 5-4 (Fig. 2-1); later discussions will reveal how set-class 5-4 plays a prominent role in Sections II and III.

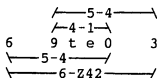
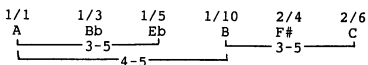


Fig. 2-1. The axial 4-1 within 6-Z42

Despite the obvious above-mentioned associations between Section I and Section V, there is one major difference--the way of generating the pitch-class sets. In Section I, following the opening 6-Z42 hexachord, the 6-5 hexachord constitutes three new pitch-classes $\langle 7,8,1 \rangle$ and three previously-used $\langle 6,9,0 \rangle$; whereas in Section V, the 6-5 hexachord shares five common pitch-classes $\langle 3,4,5,6,9 \rangle$ with the preceding 6-Z42 hexachord and introduces only one new pitch-class 10. The member of set-class 7-19 encompasses the entire "finger-nail" segment (2/8-2/14) sharing four common pitch-classes $\langle 0,3,6,9 \rangle$ with the opening 6-Z42 hexachord; in Section V, the member of set-class 7-19 in fact comprises the entire member of set-class 6-Z42 $\langle 0,3,4,5,6,9 \rangle$ and new pitch-class 10. In other words, when the pitch-class 10 is introduced in Section V, it at once forms a member of set-class 6-5 and 7-19 with the preceding pitch-classes. As a consequent, the maximum pitch-class similarity (R_p) is more strongly represented in Section V.

At the outset of both sections, according to the order of bringing in new pitches, the partitioning of the hexachord 6-Z42 reveals juxtaposition of two members of 3-5 and the embedding of 3-5 within 4-5 (see Fig. 2-2).

Section I (1/1-2/7)



Section V (9/1-17)

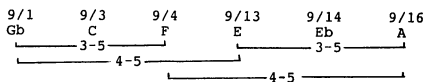


Fig. 2-2. The openings of Sections I and V

Significantly, set-class 4-5 is employed later to open Section II (4/1-5) and Section IV (7/31L-8/3). Furthermore, set-class 3-5 also plays a strong role in articulating the movement's formal design. Set-class 3-5 opens Section I and Section V, and two members of set-class 4-9, with identical pitch-class content <11,0,5,6>, appearing at the end of Section II (3/1-4) and Section IV (7/27-30), are displayed as two interlinked members of set-class 3-5. Therefore, it is safe to conclude that in the first movement, set-classes 3-5 and 4-5 function as formal dividing points (see Fig. 2-3).

SEC. I	II	III	IV	V	
1/1-10	2/1-9	5/1-4	7/27-30	7/31-8/3	9/1-13
9 t 3 e \3-5/ └─4-5─┘	1 2 3 7 └─4-5─┘	/3-5\ 0 5 e 6 \3-5/	/3-5\ 0 5 e 6 \3-5/	6 7 e 5 └─4-5─┘	6 0 5 4 \3-5/ └─4-5─┘

Fig. 2-3. 3-1 and 4-5 as formal articulators

Section II consists of only nine different pitch-classes <11,0,1,2,3,4,5,6,7> which together form a member of 9-1. The <C#,D,D#> 3-1 set, which opens this section, has a double identity: it is a subset as well as a non-literal complement of the large-scale set-class 9-1. The subset/complement relationship takes on additional significance when considered in light of other such relations that appear later in this section. Although set-class 3-1 is clearly presented at the outset of this section, its predominant interval-class 1 is weakly represented in this section. A <C#,D#>, member of set-class (02), instead of the set-class (01) employed in Section I and Section V, is articulated as a distinct vertical component by means of repetition and timbral contrast--it is the only statement in this movement played by hard mallets. The prominence of set-class (02) and three consecutive statements of a <C#,D#,G> trichord 3-8 (4/7-17) foreshadow the articula-

tion of a whole-tone scale later in Section IV. In fact, articulation of set-class (02) is anticipated at the end of Section I when B3 at 3/4 is replaced by C4 at 3/17; the Bb and C thus form a vertical statement of set-class 2-2 at 3/17 and set-class 3-8 when combined with E. Although Section II is differentiated from Section I and Section V by articulating set-classes 2-2 and 3-8, these three sections exhibit strong associations with respect to set structure. In Section II, pitch-classes <1,2,3,4,7> in the upper-stave produce a member of set-class 5-4. This statement of 5-4 also functions as an invariant subset which produces members of both 6-Z3, when combined with the F# in the lower system, and 6-Z36, when combined with the C. It should be noted that set-classes 6-Z3 and 6-Z36 are Z-related, their Rp relationship is strongly represented in the music. Therefore, Section II presents a tight harmonic unit which foreshadows the final statement of 6-Z36 of the movement (see Example 2-3a).

Further investigations into the sets employed in Section II produce far more interesting and startling results than the relationships projected at the surface level. The member of 5-4 in the upper stave, when combined with the F# and C in the lower system, results in a large-scale statement of 7-4; therefore, another statement of a set embedded within its complement is presented inside the superset 9-1 (Example 2-3b). On the other

hand, the thrice-stated $\langle C\#,D\#,G \rangle$ trichord (3-8), when combined with the $F\#$ and C of the lower stave (4/7-18), forms a member of 5-19 which is a non-literal complement of a set-class 7-19 presented by the "finger-nail" segments in Section I. Note that this $\langle C,C\#,D\#,F\#,G \rangle$ member of 5-19 of Section II is literally included in the "finger-nail" segments of Section I. In other words, the re-occurrence of this statement of 5-19 strongly links the "finger-nail" segments with Section II.

Example 2-3a. Pc Sets in 4/1R-5/2R (Section II),
Movement I

7/1, Movement I 8/1

Example 2-3b. Pc Sets in 4/1R-5/2R (Section II),
Movement I

Section III, the middle section of the movement's quintary form, consists of two highest pitches (F#6 and D#6) and two lowest pitches (A2 and Bb2) of the movement. The section's wide range and the presentation of the climactic F#6 differentiate this section from the rest of this movement. However, the link between this section and Section V is obvious from a single hearing: the distinct motivic <D,F##,G#> trichord (5/35-39) recurs transposed at T10 level later at the outset of Section V. According to the format given by the opening member of 6-Z42 set-class of Section V, the <D,F##,G#> trichord needs a <F,F#,B> trichord to complete a statement of 6-Z42; however, the appearance of the <F,F#,B> is suspended until the very end of this section. Instead of <F,F#,B>, a <G#,B,C> trichord follows the opening <D,F##,G#>, when combined with the Eb at 7/1, they form a statement of 6-Z19. It should be

noted that 6-Z19 is the set class of H1--the hexachord formed by the first six pitch-classes of the series which governs the other four movements. A set which belongs to the same set-class of H2 (6-Z44) appears at the end of Section III--<11,0,3,4,5,8> at 7/24-29. It is interesting to note that the opening statement of set-class 4-3 (5/5-23) in Section III is also in the same set class of the first tetrachord (4-3) of the series. Set-class 5-4 plays a structurally important role at the end of this section. A bridge based upon two parallel statements of 5-4 is formed by the intervening notes between the <D,F##,G#> trichord and the final <F,F#,B> trichord (see Example 2-4).

The image shows a musical staff with a treble clef and a common time signature. Above the staff, there are labels for set classes: $5_{762}-4_{123}$, 5_1 , 5_5 , 5_7 , 5_9 , 5_{11} , 5_{13} , 5_{15} , and 5_{17-20} . Below the staff, there are two boxes labeled $5-4 (01236)$. The first box is above the staff and contains notes with accidentals: \sharp^b , \sharp , \sharp , \sharp , \sharp , \sharp . The second box is below the staff and contains notes with accidentals: \sharp , \sharp , \sharp , \sharp , \sharp , \sharp . The notes in the staff are: \sharp^b , \sharp , \sharp , \sharp , \sharp , \sharp , \sharp , \sharp , \sharp , \sharp , \sharp , \sharp . The notes \sharp^b and \sharp are circled.

Example 2-4. Bridge based upon two members of 5-4

Table 2-1.--Relations of the articulated pc sets in Movement I

Section IV	Other sections						
	7-19	6-Z42	6-Z36	4-9	4-5	5-4	3-5
4-12	K	Kh	Kh	R0		Kh	K
4-13	Kh	Kh	Kh	R0		Kh	K
4-17			K	R0			K
5-16			K	Kh			Kh
5-27							K
6-Z26		R0					Kh
6-35		R0	R0				
7-15	K			K	Kh		Kh
8-5	K		Kh	K	C	Kh	Kh
8-19					K		K
9-1	K	K	Kh	K	Kh	Kh	K

C: the complement

K: pitch-class set A can contain or can be contained in pitch-class set B or its complement.

Kp: pitch-class A can contained or can be contained in pitch-class set B and its complement.

R0: minimal similarity with respect to interval class.

Section IV is differentiated from the remaining material in the following ways: (1) free rhythmic activity; (2) articulation of a whole-tone scale; (3) lack of pitch-stasis; (4) lack of simultaneity. The segmentation and set identification of Section IV are in Example 2-5a. The comparison of these sets with the articulated sets of the rest of the movement reveals that the set complex relations between Section IV and the other sections result in an unconnected as well as connected structure (see Table 2-1). The most strongly articulated set-class in Section IV, namely, 6-35 (whole-tone scale), is dissimilar to all sets articulated in other sections with respect to interval class. On the contrary, set-class 8-5 (8/11-19) is strongly linked with the set-classes articulated in the remaining sections, particularly Section II. Note that this member of 8-5 contains a statement of 4-9 with identical pitch content and ordered-pitch-interval succession as the one at 7/1-5 in Section III. In the same manner, the initial member of 8-19 set-class (8/1-11) also contains the a member of 4-9 set-class as the one at the very end of Section III; as a consequent, a mirror symmetry is formed (Example 2-5b).

7/31, 8/1-32

Example 2-5a. Pc sets in 7/31-8/32 (Section IV),
Movement I

Example 2-5b. 7/1-8/19, Movement I

It should also be mentioned that several set-classes in Section IV are implicit in previous sections. For example, the 5-10 of Section IV (5/28-32) and the whole-tone scale are implied within the initial run of Section III (5/5-24 and 5/25-31); the 4-18 which occurs in three runs in Section IV (8/2-5, 8/15-18, 8/24-27) starts the 32nd-note figure at the end of Section III. Most significantly, the 9-1, which encompasses the entire Section II, appears once again at the end of Section IV (8/24-32). The segmentation of Section IV's statement of 9-1 proves the prior observation that Section II is associated with Section IV, since two discernible tetrachordal segmentations within this statement of 6-Z36 and 5-4 are very prominent in Section II. By contrast, the members of set-classes 6-Z26 and 5-27 produced by the third run in Section IV (8/19-24) show no kind of similarity to the sets prominent in the rest of the movement. Because the third run is flanked by two outer subsections, and because the first subsection is reminiscent to Section III and the second subsection to Section II with respect to pitch structure, it is safe to conclude that Section IV features a very distinct musical element--set-class 6-35--which is "harmonized" by two groups of pitch-class sets derived from those of previous sections. In addition, Fig. 2-4 shows that a large-scale mirror symmetry design encompasses the entire movement with respect to the pitch structure

of each section. Note that Henze punctuates such mirror-symmetrical design by placing two climactic F#6 right next to the axis of symmetry:

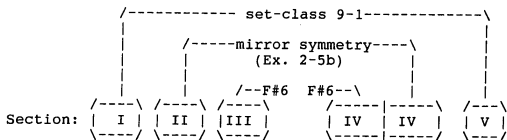


Fig. 2-4. Mirror-symmetrical design of the first movement

Structural Background

Although Section IV presents a remarkable sense of directedness through the descending whole-tone scale in the upper voice, in general, there is no other obvious feature in this movement that encourages a tonal-style or prolongational approach. However, pitch-classes of structural importance separated in time can be associated due to the consistency of their supporting harmonies. By position within the passage and frequency of reiteration, several sonorities have relatively greater structural weight: the initial A; the opening [A-Bb-Eb] trichord; the final [B-C-F#] that concludes the opening statement of

6-Z42; the final [C-F-B-F#] of Section II that later re-occurs at the very end of Section III; the [G#-D-F##] trichord of Section III which is of great motivic importance; the [Eb-A-D-G#] of Section III (7/1-4) that initiates the bridge passage based upon two members of 5-4 (7/1-4); the [C-F-B-F#] at the close of Section III; the initial [Gb-C-G] of Section V (9/1-5) and the following [E-Eb-A]; the <C,C#,G>--divider of Section V; and the final A of the entire movement. Example 2-6a shows that a large-scale <A,Bb,B,C,Eb> in the bass spans the entire movement. With the exception of the initial and final A's, which are treated as single, isolated entities, the rest of the structural bass notes consistently form a member of either 3-5 or 4-9 set-class (which contains four members of 3-5) with the surrounding notes. Although the formation of a statement of 3-5 by the structural B in Section V is not as unequivocal as those of previous sections, this 3-5 is contained within a member of 5-7 which is in Kh relation with both 3-5 and 4-9. Inside the [G#-D-F##] and [Gb-C-F] in the upper register, G# and Gb are certainly structurally important due to the frequency of reiteration. The relations between the structural notes in the upper register between Sections III and V are quite similar to traditional practice. First of all, members of the [G#-D-F##] and their counterparts in [Gb-C-F] are related by whole step; such relation is reminiscent

of an incomplete neighbor. Second, the structural Gb is elaborated by an octave progression and the intervening passing motion is carried through by a descending whole-tone scale. Example 2-6b presents the background level of the first movement. Note that between Section I and Section V, all structural notes together form a <G#,A,Bb,B,C,Eb> statement of 6-Z36, whereas in Section V they form a <F#,A,Bb,B,C,Eb> statement of 6-Z42. The order of these two primary sets is just the reverse of what occurs in the music: with identical pitch-class content, it is 6-Z42 which opens and 6-Z36 which concludes the movement. In the background level, the registral segmentation suggests that a <A,Bb,B,C,Eb> statement of 5-4 in the bass functions as a shared subset. Most significantly, the background structure reveals that two outer hexachords in the music--the initial <F#,A,Bb,B,C,Eb> and final <G#,A,Bb,B,C,Eb> are projected over large musical spans; they function as two primary sets constituting the background structural frame. In addition, their shared subset 5-4 plays an important role at all structural levels.

Handwritten musical score for Example 2-6a, showing a middle-ground level. The score consists of two staves. Above the staves, there are several measures of notation with various annotations, including circled notes and arrows. The score is divided into sections by brackets and contains numerous handwritten annotations, including circled notes and arrows. The annotations include labels such as "5-4", "6-32", "6-24", "6-236", and "6-242". The notation includes notes, rests, and other musical symbols.

Example 2-6a. Middle-ground level, Movement I

Handwritten musical score for Example 2-6b, showing a background level. The score consists of two staves. Above the staves, there are several measures of notation with various annotations, including brackets and arrows. The score is divided into sections by brackets and contains numerous handwritten annotations, including circled notes and arrows. The annotations include labels such as "6-236", "6-242", and "6-242". The notation includes notes, rests, and other musical symbols.

Example 2-6b. Background level, Movement I

Rhythm and Meter

Besides pitch structural relationships, duration and proportions can also illuminate the formal partitioning of this movement. In order to calculate the approximate overall duration of Section IV and two free rhythmic figures, I will count each sixteenth-note as one durational unit, and compute the duration of those free rhythmic elements in the following ways:

$$\begin{array}{l} \text{♩} = 1/3 \text{ F} ; \text{♪} = 2/3 \text{ F} ; \text{♫} = 1 \text{ F} ; \\ \bullet = 8 \text{ F's} ; \text{) } = 1 \text{ F} ; \text{ m } = 3 \text{ F's} ; \\ \text{ , m } = 4 \text{ F's} ; \end{array}$$

3/5-15

$$(1 \times 1 \text{ F}) + (1 \times 1 \text{ F}) + (3 \times 2/3 \text{ F}) + (6 \times 1/3 \text{ F}) = 6 \text{ F's} ;$$

(Notes are presented according to their order of appearance. The first number enclosed in parentheses stands for number of notes, and the second stands for the durational value of each note.)

5/5-34

$$(15 \times 2/3 \text{ F}) + (9 \times 1/3 \text{ F}) + (6 \times 1/6 \text{ F}) = 14 \text{ F's} .$$

This computational method by no means suggests the exact proportion and value of these free rhythmic elements. On that basis, the duration of each section will be as follows:

Section I	104 ♯'s	}	243 ♯'s
rest	4 ♯'s		
Section II	35 ♯'s	}	243 ♯'s
rest	4 ♯'s		
rest	4 ♯'s		
Section III	88 ♯'s	}	242 ♯'s
rest	4 ♯'s		
Section IV	63 ♯'s	}	242 ♯'s
rest	3 ♯'s		
Section V	176 ♯'s		

Fig. 2-5. Sectional duration (in sixteen-note),
Movement I

In examining the data of the above diagram, we can obtain the following information: (1) The first three sections and the last two are roughly equal in length. Therefore, the previous observation that the two climactic ♯6's (7/30, 7/31) occur at the center of the movement is supported by its formal proportions. (2) The axial symmetry of pitch structure (cf. Fig. 2-4) is enhanced by durational balance. (3) The movement has approximately 485 durational units (♯) in total. The inferred metronomic tempo is thus $485 \text{ ♯} / 2 \text{ min.}$ ($\text{♩} = \text{ca. } 60$), and is a

typical slow funeral march tempo. (4) The durational proportions of these five sections are approximately $V/I = IV/II = (I+II+III)/(I+II) = 1.02$ (golden mean). The approximation, resulting from free-rhythmic value and proportional inconsistencies, implies that Henze was very sensitive to sectional proportion but did not consciously calculate the duration of each section.

The pauses and rests between sections have both structural and practical functions. Structurally, they enhance the effect of formal punctuation, separating each section as an isolated "moment." Practically, they provide the performer with time to change mallets. Since this movement is notated without barlines, the metric grouping is quite obscure. One might even ask whether the application of metric grouping is appropriate in this movement. However, Henze's notation of rest is a key to the analysis of meter, although the rhythmic notation seems perplexing to the performer at the first sight. For instance, when Henze notates half-note rest as " $\xi \xi$ " (e.g., prior to 2/8), does he mean " — "? If he does not, what does such subdivisional notation imply? A look at Section I reveals some of the answers contributing to interpretation of the rests and metric analysis. Nevertheless, it should be pointed out that the following metric analysis is not intended to impose a meter upon the music, but to derive a convincing metrical reading from

the rhythmic structure.

Section I can be divided into six subsections according to the timbral contrast (the change of mallets). Each subsection has its own timbral, rhythmic and dynamic individuality. The fact that the first two events (1/1-1/2R and 1/3R-4R) delineate two 11/16 metric groupings is unequivocal (Example 2-7); in fact, the third event (1/5R-9R) also invites such a metric grouping:



Example 2-7. 1/1-1/9R, Movement I

As for the sub-grouping within the first two events, the initial three sixteenth notes could be treated as an anacrusis of the following half-note silence:



Example 2-8. 1/1-1/4R, Movement I

The result is that the mysterious effect is greatly enhanced by the presence of the anticipative impulse and the absence of the initiative impulse. The half-note rest is indeed a silent down-beat on which the preceding harmonic tension produced by [A,Bb] 01 dyad leads us to expect a resolution which, however, is finally provided in the third event at 1/5. Imagine how much more boring the first subsection would become, if both simultaneities were coordinated with the metric accent:



Example 2-9. 1/1-1/9R, Movement I

The [Bb3, Eb3] simultaneity at 1/5 punctuates another initiative impulse by means of agogic accent, contour accent (higher note) complemented by leap, new harmony (perfect fourth) and louder attack. However, the placing of this initiative impulse on the second sixteenth-note

results in different sub-grouping--1+4+6 instead of the 3+8 grouping of former events (see Example 2-10). Note that this dramatic process unfolds in three parts: the first event is a preparation, the second sets up tension and the third presents resolution. Being reminiscent of the initial 3/16 grouping in both of the preceding events, the final six sixteenth-notes of the third event should be grouped as 3+3 instead of 2+2+2. In addition, the grouping of four sixteenth-notes in the third event anticipates the same kind of grouping in the subsequent subsections. Throughout the second subsection (1/10R-2/8R), the rhythm and dynamic contour suggest a grouping into units of four sixteenth-notes:

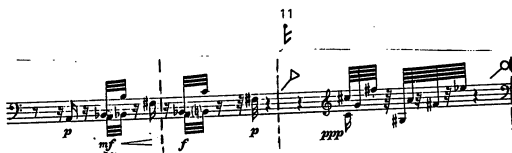
Example 2-10. 1/10R-2/8R, Movement I

Such quaternary grouping and the dynamic contour suggest two possible interpretations of the higher metric level: 2x3 or 3x2 (Example 2-10). Note that both interpretations necessitate the inclusion of the quarter-note rest (2/8R) in the second subsection. Therefore, of the two quarter-note rests (2/8R and 2/9R), the former is the end of a phrase as well as a cessation of the F#3 (2/7), whereas the latter is the downbeat of a new subsection. Henze's rhythmic notation (particularly his use of rests) thus provides the performer with a clue to the music's metric structure. Although there may be no difference in sound, there is a difference in the way the rests feel to the performer, and the difference is sufficient to make comprehensible the rests which were otherwise obscure. The 2x3 grouping is analogous to that of the first event in the first subsection and thus suggests the following interpretation:

The image shows two musical staves. The top staff is labeled '1/1' and the bottom staff is labeled '1/10R'. Both staves show a sequence of notes with dynamic markings (p, mf, pp, f) and a curved line indicating a phrase. A vertical dashed line marks a specific point in the music, with an arrow pointing down to it.

Example 2-11. 1/1-2/7R, Movement I

In the third subsection (2/9R-13R), the "finger-nail" segment is flanked by two quarter-note rests. According to what is printed in the music (both editions), the "finger-nail" segment is in 3.5/16 meter, which sharply contradicts the rhythmic and metric context of this movement. The sixteenth-note rest at 2/11R should almost certainly be a 32nd-note rest instead. As a result, the "finger-nail" segment would suggest a 3/16 meter and the entire third subsection would again be in 11/16 meter. In other words, if the rest at 2/11R is a 32nd-note rest, the metric structure of the third subsection (4+3+4) will be similar to that of the first two events in the first subsection (3+(4+4)). Note that Franz Lang's performance in Percussion Today supports this assumption. The fourth subsection (3/1R-4) can be grouped as 4+2/16, and the same metric grouping recurs at the outset of the sixth subsection. It is interesting to note that the 11/16 meter is implicitly presented in the fifth and sixth subsections. Although the pitch elements in the fifth subsection is free-rhythmic, it contains "eleven" attacks. In addition, the sixth subsection contains twenty-two (the double of eleven) sixteenth-notes. The overall metric structure of Section I is shown in Example 2-12.



Example 2-12. Section I, Movement I

The metric disorientation in the second subsection can be attributed to the notational obscurity, the rhythmic displacement of the [G#5-C6-B4] trichord at 6/22-24, and the "sfz" accent. There are numerous possibilities of grouping this subsection and it is beyond the scope of this study to list all of them here. Nevertheless, there is one way of grouping which allows the 3/8 unit to continue until the 32nd-note run (7/11-29) occurs (Example 2-14):

6/17

The musical score is written on a single staff in 3/8 time. It begins with a treble clef and a key signature of one sharp (F#). The tempo/meter is indicated as 6/17. The score consists of several measures of music. Above the staff, there are several bracketed groups of notes, with the notation '4+4+3+4+4' positioned above the final group. Dynamic markings include 'p' (piano) and 'sfz' (sforzando) accents. The piece concludes with a double bar line and a fermata.

Example 2-14. 6/17-7/30, Movement I

Within this 3/8 metric frame, the "sfz" G#5 (6/22), falling on the weak beat (the fourth 32nd-note), is overshadowed by the following C6 of superior accentual value-- contour accent coincides with leap and metric accent.

This way of grouping also features internal pulsational similarities. Note that each measure has its own pulsational individuality: the first measure contains only eighth-notes, the second only 32nd-notes and the third only sixteenth-notes. Finally, in accordance with the registral accents articulated by the C6s, C#6, and D#6, the closing 32nd-note run can be grouped symmetrically as 4+4+3+4+4.

Despite its free rhythmic notations, Section IV still requires careful considerations in terms of rhythmic phraseology. Within the articulated descending whole-tone scale in the upper register, the mentally subdivisive beats between each adjacent member should be somewhat equal, whereas the notes of smaller durational value intervening between can be freely rendered. As a result, the free-rhythmic runs recall two previous runs of the same kind (3/5-15 and 5/5-34), while the constant subdivisive beats within the whole-tone scale associate themselves with the successive eighth-note figures in Sections III and V.

Section V presents the greatest metric perplexity. At first sight, successive eighth-note figures, reminiscent of those of Section III, tempt the performer to interpret this section once again in 2/4 meter. He will, however, be jolted out of such a meter by the intervention of eighth-note triplets on the up-beat (e.g., at 9/23 and

10/10). Speaking of phrase formation, the timbral contrast overtly delineates five phrases: 9/1-9/2R, 9/18-26, 9/27-10/2R, 10/20-11/2R and 11/2-end. The [C,C#,G] tri-chord at 9/27 is obviously an upbeat to the third phrase. The following way of grouping the opening of Section V tries to imitate its counterpart in Section III as closely as possible, in order to complement their pitch-structural and pulsational similarities:



Fig. 2-6. Rhythmic similarity of Sections III and V, Movement I

Since the third phrase features dynamic progression, despite the notational distraction (beaming), there should be no internal sub-divisional grouping within this phrase. In other words, a unitary metric grouping supports the continuous dynamic gesture. Due to the fact that the triplet figure "3" at 10/10 may interrupt the rhythmic flow, the dynamic progression (crescendo) should be much more strongly presented between 10/10 and 10/12 in order to compensate for the transitory rhythmic incongruity.

The rhythmic structure of the fifth phrase features mirror symmetry:

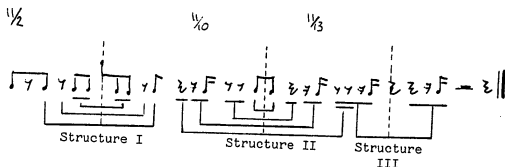


Fig. 2-7. Rhythmic structure of (11/2-the end), Movement I

Henze delineates this symmetric structure in several ways: (1) The A3 at 11/6, the axis of Structure I, is articulated by dynamic and timbral contrast; (2) The diminuendo starts right at the axis of Structure II between 11/11 and 11/12; (3) Two opposite A3's of Structure III (11/14 and 11/15) are articulated by timbral contrast. However, as numerous masterpieces in the past show, the magic of a musical phrase is not created by only one factor but rather by several factors interacting with or even rejecting each other simultaneously. While presenting these symmetrical structures, Henze at the same time obscures them by adding one extra A3 and eighth-note rest at the very beginning (11/2 and 11/3R); by tying Struc-

tures II and III together with a diminuendo encompassing the second half of Structure II and the entire Structure III, in addition to two eighth-note rests (11/12R and 11/13R) as a link; and most significantly, by suggesting contradictory rhythmic groupings. Note that the quarter-note silence following 11/10 and 11/13 should be notated by one quarter-note rest in congruence with the mirror-symmetrical structure. However, the subdivisional notation of the silence suggests that the first eighth rest should be grouped with the preceding materials and the second with the following. Note that the placement of those rests supports this conclusion: 11/8R is placed closely to 11/10, so is 11/12R to 11/13, and even 11/6R to 11/9 as well as 11/15R to 11/14. As a result, a metric structure of mirror symmetry is thus formed:

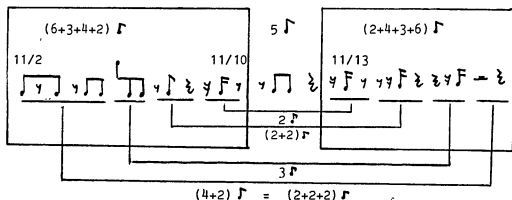


Fig. 2-8. Metric structure, 11/2-the end, Movement I

This metric structure is the key to the rhythmic grouping of this phrase. For example, the opening six beat could be grouped as 3+3 or 2+2+2; but according to this metric structure, it should be grouped as 2+2+2 in corresponding to its counterpart " $\underline{\text{—}}\text{—}\text{—}$ " at the end of this phrase. In sum, upon the mirror-symmetrical metric framework of the fifth phrase, Henze constructs three mirror-symmetrical rhythmic patterns. At times, the internal grouping of these patterns conflicts with the metric framework. This creates a sense of mystery and enables a high degree of continuity in this concluding phrase. Although the meter and rhythmic grouping of this movement are not notated, metric hierarchy can still be established by organizing various accentual activities and by analyzing Henze's subdivisional notations (particularly his notation of rests). As a performer, one must establish a convincing metric framework mentally before learning the notes. Otherwise, he will interpret each note as an isolated event and his performance will thus lack directness. In addition, he will also find metric grouping an aid to memorization.

Texture

Owing to the fact that all vertical dyads are generated by intermittent doubling, the secondary voice is extremely discontinuous and its character is not easy to define. Therefore, strictly speaking, although simultaneity is very prominent in this movement, the texture is monophonic but multi-voiced. Despite the dissonant interval of doubling (interval-class 1) which normally generates independence of voices, the degree of interdependence between voices is heightened by the regularity of interval-class and the secondary voice's nebulous character. In fact, one may even question the existence of the secondary voice and treat those added notes as merely the derivative of the primary voice.

Three terms need explanation prior to further textural analysis of each movement. "Density of Attacks" (DA) is the ratio of "Number of Attacks" (NA) to durational space (in seconds), and "Density of Simultaneities" (DS) is the ratio of "Number of Simultaneities" (NS) to durational space. DA and DS are the most readily perceptible and appreciable criteria of textural change. A "Simultaneity List" (SL) consists of three numbers; the

left denotes the number of vertical dyads, the middle denotes the number of vertical trichords, and the right denotes number of vertical tetrachords. The data in Table 2-2 traces the textural process closely and illustrates the overall decline in DS between Section I and Section IV. Table 2-2 also shows that the highest DA is achieved in Section III, the central and climactic section, and the gradual decline in DA towards the end.

Table 2-2.--Texture of Movement I

SECTION	NS	NA	Duration (in seconds)	DS	DA
I	24	62	26.00	0.92	2.38
II	4	25	9.25	0.41	2.56
III	7	89	24.00	0.29	3.70
IV	0	33	17.25	0.00	1.91
V	25	71	44.00	0.57	1.61

Analytical Conclusion

Since all five sections are set off by formal dividers and by rests or pauses, one can conceive this movement as five independent "moments." Each moment can be defined by internal consistency of pitch structure and rhythmic activities. In addition, the sense of sectional discontinuity is dramatically intensified by moments of silence, timbral contrast, and performer's action of changing mallets. Nevertheless, similarities in certain domains between moments and mirror-symmetry relationships make those moments seem to belong to the same movement rather than being just a jumble of unrelated musical fragments. Most significantly, there is an underlying background structure that operates in contradiction to the surface discontinuous moments. The materials of the background structure are extracted from the musical surface-- [F#,A,Bb,B,C,Eb] of set-class 6-Z42 (012369) that opens the movement and [G#,A,Bb,B,C,Eb] of set-class 6-Z36 (012347) that concludes the movement. Moreover, the high degree of pitch-structural similarity between Section I and Section V implies restatement of musical ideas framing the start and end of the movement and thus articulates formal closure.

CHAPTER 3
THE SECOND MOVEMENT

Series Forms and Misprints

The series forms employed in this movement are given in Appendix I. Fig. 1-8 reveals that the revised edition is still a mixture of consistency and inconsistency. In Appendix I, one can find that the use of series is sufficiently consistent to establish procedural norms, but there are deviations that seems so capricious as to arouse doubt that they were intended by the composer. The Bb3 at 1/2, for example, functioning as the second member of P-0, should be an Ab3 instead. This observation can be further justified by comparing this Ab3 with the A4 at 10/14 and noting that the initial phrase (1/1R-4R) and the concluding phrase (10/1R-7R) are T1 related and based on P-0 and P-1 respectively. In the same manner, by comparing the three-note chordal passages at 8/1-12 and 10/1-12 and noting that they are T6 related and have the same order-number mosaic operation, it is safe to conclude that the G# at 8/7 should be F#, F at 10/1 should be F#, F# at 10/5 should be D#, and the entire lower stave of the tenth

system should be read in bass clef. Within the segment at 8/13-24, the A at 8/15 and the E# at 8/24 are also serially inconsistent notes. According to the remaining notes and their order, it should be a F at 8/15 and D# at 8/24. Admittedly, one can read the printed note at 8/15 as a F5 by inserting a treble clef. However, reading it as a F3 misprinted one line higher is more convincing because of its placement in the lower staff and the direction of the stems. It should be noted that those suspected errors between 5/26 and 7/24 will be scrutinized in the theoretical analysis section, for they need to be justified by clear and convincing analysis.

Pitch Organization and Formal Structure

A series is an ordered set which usually contains all twelve pitch-classes. It is also built up from many smaller components--its subsets. A good piece of twelve-note music is by no means just a chain of series strung randomly together; it is instead a rather deliberate routine of manipulating basic musical ideas embedded within the series. As a result, identifying the series forms is never the goal of analyzing twelve-note music. A successful analysis must focus also on certain smaller units embedded within the series, to trace their development and function in the music, and realize the profound

role of the series in shaping all aspects of the musical structure.

In the first phrase (1/1R-4R), the series itself (P-0) is employed as a theme. The rhythmic profile partitions this series into two halves. The first half contains varied statements of set-class 3-3 (014) and the second half contains one statement of 4-19 (0148) and its subset 3-12 (048). Note that in the first half, Henze anticipates the tenth member of this series (pitch-class D) right before the ninth member (pitch-class A). As a result, he creates a [B-D#-D], another form of 3-3 at 1/7-9 (Example 3-1).

1/1R-4R

Example 3-1. 1/1R-4R, Movement II

5/13-25

Example 3-2. 5/13-25, Movement II

The prominence of set-class 3-3 in this phrase is a direct result of the subset structure of this series:

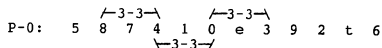


Fig. 3-1. Subset structure of P-0

Some members of this set-class which occur later on, however, are by no means all contiguous within the series. The vertical alignments <G#,A,C> at 1/21, <D,Eb,F#> at 3/28, and <E,G,Ab> at 4/26, for example, are not linear segments of the series to which they belong. In fact they result from Henze's creative compositional choices. Henze expresses the same musical idea (set-class 3-3) by employing both series segments and relatively free elements and thus assures large-scale coherence in this movement. The same thing happens in the free rhythmic passage at 5/13-25. The top voice of this passage contains several linear statements of set-class 3-3 and only one--<Db,F,E>--is a linear segment within I-7 but reordered (Example 3-2).

Set-class 4-19 and its subset 3-12 are other musical ideas which Henze frequently articulates in this movement. Since they occur at the end of the prime form (P) and inversion (I), the use of either RI or R right after the P or I can create these set-classes at the linking point of the series (e.g., at 1/9-17 and 6/6-14). Also note that

both the non-serial F at 1/13 and the C at 6/20 can produce two more statements of 4-19 with their surrounding notes (Example 3-3):

The image shows two musical staves, one above the other. The top staff is labeled '1/9-17' and the bottom staff is labeled '6/6-14'. Both staves have a treble clef and a key signature of one flat. The notes on the staves are connected by lines, and several overlapping rectangular boxes and circles are drawn around them. Labels '4-19' and '3-12' are placed within these shapes, indicating specific intervals or groupings of notes. The boxes and circles overlap between the two staves, highlighting the structural similarities between the two phrases.

Example 3-3. Comparison of 1/9-17 and 6/6-14, Movement II

Order Number Mosaic Operation W

W: {{0,1,2} {3} {4,5,6} {7} {8,9,t} {e}}

W(R-2): {{8,0,4} {e} {5,1,2} {3} {6,9,t} {7}}

W(RI-2): {{6,2,t} {3} {9,1,0} {e} {8,5,4} {7}}

	R-2			RI-2		
6-24:	8	5	6	t	9	4
6-16:	4	1	9	2	0	8
6-16:	0	2	t	6	1	5
3-12:	e	3	7	3	e	7
	3-12	3-3	3-3	3-12	3-3	3-3

Fig. 3-2a, Pitch structure, 8/1-12, Movement II

(Same Order Number Mosaic Operation as in Fig. 3-2a)

	R-8			RI-8		
3-5:	6	e	0	0	6	e
5-Z18:	t	7	4	8	3	t
5-6:	2	8	3	4	7	2
3-12:	5	9	1	5	9	1
	3-12	3-3	3-3	3-12	3-3	3-3

Fig. 3-2b. Pitch structure, 10/1-12, Movement II

;

In the chordal passages at 8/1-12 and 10/1-12, two primary musical ideas--set-classes 3-3 and 3-12--are articulated simultaneously. Passage 8/1-12 contains R-2 and RI-2. Since the order number mosaic operation \underline{W} (the partitioning of the aggregate of order numbers into discrete collections) as shown in Fig. 3-2a is operated upon these two series, the resultant three-note chords are either statements of 3-3 or 3-12, and the linear sixteenth-note figures intervening between these three-note chords also give another presentation of 3-12. At 10/1-12, even though the voicing of those three-note chords is different, this passage is indeed T6 of that at 8/1-12. Since the same order number mosaic \underline{W} is in operation, the resultant three-note chords and the linear sixteenth-note figure present the same set-classes as their counterparts at 8/1-12 do.

Given the movement's extremely active and complex rhythmic profile, formal divisions are suggested by the fermatas which result in sudden cessation of rhythmic activity. This movement can be divided into three sections according to the location of fermatas. Section I (1/1R-3/1R) is set off by a "□" at the end of the third system and Section II (4/1-7/5R) by *rallentando* and "♩)." Section III (7/25-end) is sharply differentiated from the preceding sections because of its discontinuity, predominance of free rhythmic activity, and extension of series

areas. The pitch material that serves as the basis of this movement is presented in Section I, containing three series--P-0, RI-0, and R-0. In Section I, far-reaching musical continuity is enhanced by incessant rhythmic vivacity, and by conflict between projection of series, dynamic contour and placement of rests.

The series forms illustrated in Appendix I show that changes of series do not always coincide with phrase divisions or metric units. A close look at the pitch structure of Section I reveals Henze's free treatment of series. The initial thematic idea of this movement is illustrated in Example 3-4. Note that the series here serves as a melodic prototype in the upper parts. Individual members of the series are occasionally re-introduced (e.g., F3 at 1/4, G#4 at 1/5, and F4 at 1/13) as well as anticipated (e.g., D6 at 1/9); all re-introduced members are placed underneath the "melody" and function as harmonic background. Example 3-4 also shows that the anticipation of the D at 1/9 and the re-introductions of the G# at 1/5, G at 1/6, and F at 1/13 result in harmonic confirmation. Note that these G, G#, and D form the H1 of the P-7 with the surrounding notes and the F forms the H2 of RI-0 with the preceding notes. As a result, this P-0 thematic unit is also an overlapping statement of five discrete hexachords of series forms (i.e., H1 of P-0, H2 of P-0, H1 of RI-0, H2 of RI-0, and H1 of P-7). As Appen-

dix I shows, transposition levels of 0 and 7 are very prominent in this movement, and Henze establishes this preference at the very beginning. Furthermore, this opening phrase demonstrates one of Henze's important manipulations of twelve-tone music. Notes that are not entirely consistent serially are combined to form discrete hexachords which do occur as contiguous series segments later on in the music. In other words, hexachords that occur as secondary non-serial elements at one point become primary segments of the series later on. In this way, Henze is able to direct the music from one transposition level to another.

The image shows a musical score for two staves, treble and bass clef. The score is annotated with several labels and boxes. Two boxes at the top are labeled 'RI-0:H1' and 'RI-0:H2'. A box in the middle is labeled 'P-7:H1'. Two boxes at the bottom are labeled 'P-0:H1' and 'P-0:H2'. The score includes dynamic markings: *f*, *mf*, and *p*. A vertical line is drawn to the right of the score.

Example 3-4. Pitch structure, 1/1R-4R, Movement II

3/1-10

RI-0

1 2 3 4 5 6

p

R-2:H1
(ordered)

Example 3-5a.
3/1-10, Movement II

9/1-10

I-1

5 7 8 12

ppp

q to ff

R-1:H1
(ordered)

Example 3-5b.
9/1-10, Movement II

There are two more examples of this manipulation, and they occur at 3/1-10 and 9/4-10. In the former, a segment within a RI-0 unit, comprising the first, second, third, fourth, sixth members, and the non-serial F, forms the H1 of R-2 which does occur later on at 8/1-2. In the latter example, a segment within an I-1 unit, comprising the eighth, ninth, tenth, eleventh, twelfth members, and the non-serial C# and F, forms the H1 of the P-1 that governs the concluding phrase of this movement (Example 3-5a, b).

Between 2/6 and 2/19, a segment within R-0, [Bb-D-A-D#-B], is heard in retrograde and then repeated. This retrograde operation foreshadows a large-scale operation of the same kind cutting across Section I and Section II. From 1/14 on, members of the series are always re-introduced in the same octave position (e.g., G#3 at 1/16,17,

21; and A4 at 2/8,9,10,12, 15,18,19; to name only two). This author calls such repetition of a series member in the same octave position "registral retention." Registral retention usually implies two features: (1) violation of the basic twelve-tone rule that no member appears more than once within the series; (2) reappearance of the member in the same octave position. "Frozen registration" does not have the first implication since it simply means frequent projection of a note on the same pitch level. Also, "repetition" implies reappearance of a series member, but on different pitch levels. Further analysis shows that indeed registral retention plays a very important role in this composition. The Bb4 at 2/4, which is used to harmonize the F5 of RI-0, is actually an anticipation of the Bb4 (2/6) of the upcoming series R-0. The origin of the C#3 at 2/5 is hard to define satisfactorily. One can, however, interpret the [C#3,F#3] dyad as an inversion of the preceding [F4,Bb3] dyad. The [F5,Bb4] dyad (ordered pitch-class interval 7) locates at the end of RI-0 and the [F#3,C#3] dyad (ordered pitch-class interval 5) at the beginning of R-0, and RI-0 and R-0 are inversionally-related, Henze needs a C#3 to harmonize the F#3 so the inversional relationship of these two dyads punctuates at the linking point the same relationship of the series to which they belong.

The harmonic material in the lower register between 2/19 and 2/27 looks like a nondodecapronic element at the first sight. However, close examination reveals that the F#3 at 2/19 results from registral retention of the F#3 at 2/5, Bb3 at 2/23 from the Bb3 at 2/15 (Bb3 at 2/15 itself is a repetition of the Bb4 at 2/6), [C4-C#4] at 2/24,25 is a repetition of [C6-C#6] at 2/22-23, F#4 at 2/27 is a repetition of F#3 at 2/19, and the A4's at 2/20, 23 are obviously from registral retention of the A4 at 2/8. Now, what about the G#3 at 2/21? The explanation that this G#3 is an anticipation of the Ab5 at 2/29 is too far-fetched since the distance between them is too far. Even though this G#3 is hard to understand in twelve-tone terms, it does create important recurring harmonies. It forms a 3-2 trichord with the preceding F#3 and the above A4 as do the following Bb3 and C4 together with the A4 above them. As a result, the series members are here harmonized by two successive 3-2 trichords. In fact, the 3-2 trichordal sonority has already been brought up three times previously: the preceding [C#3,Bb3,D4] at 2/14-16 and even [F3-Ab3-G4] as well as [F3,G3,E4] at the outset of this movement. Also note that the [C#4-F#4] dyad at 2/26,27 is immediately shifted up an octave to harmonize the Ab5 at 2/29. Registral retention does not have to stay within the same series unit; it may extend into a new series unit

throughout either long or short stretches of music. The F6 at 3/2 within a RI-0 unit, for example, results from the registral retention of the F6 (2/30) of the preceding R-0.

The omission of a series member is frequently employed in such free rhythmic passages; for example, (4,7) and (7,9) are missing in the RI-0. With the exception of the opening of this movement, where P-0 and RI-0 units are separated by rests, rhythmic groupings rarely coincide with series units in Section I. Also note that the last two notes of Section I (F6 and Ab3) start another P-0 which extends into Section II.

Comparing the rhythmic profile and pitch structure of Section I with those aspects of Section II, one can subdivide the latter into three subsections. The first subsection (4/1-22), together with the final F6 and Ab3 of Section I presents the retrograde version of Section I's fragment (1/14-2/30), but they share no rhythmic similarity (see Appendix I). Quite the reverse, the third subsection (5/26-7/24) bears close resemblance to Section I's fragment (1/1-2/30) with respect to their rhythmic profiles and inversional relationship. The second subsection (4/23-5/25) has its own rhythmic profile but in terms of series succession, the second and the third subsection are retrograde-related (see Appendix I). Fig. 3-3 shows that in the free rhythmic passage (5/13-25) at the close of

the second subsection, much freer manipulation of series is employed. (0,0) and (e,e) are missing. Members are not introduced in serial order although the contents of H1 and H2 are retained. Members belonging to other series are included at the opening and ending of the passage (i.e., the initial <D,Eb> belongs to the preceding R-7 and the final <D#,E> is an anticipation of the dyadic segment of I-1 at 5/27,28.) The C3 at 4/23, [E3,G3] at 4/26, and [B2,D3] at 4/29 are extraneous elements; they form vertical components with the series members echoing those at 2/19-27 (see Fig. 3-4).

The initial G6 of the third subsection is a questionable note. If it were a Gb6, it would form the initial tetrachordal segment of I-1, instead of I-7. In addition, this assumption can also be justified by a look at its counterparts at 1/1-4 and 1/13-16: the fourth member of the series (the E at 1/4 and the F at 1/16) is always harmonized by the first member; based upon the fact that the G at 6/1 is also harmonized by a F# which theoretically should function as the first member of a series, the G at 5/26 should therefore be F# (Gb).

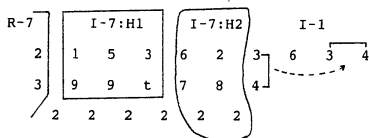
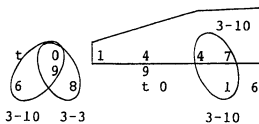


Fig. 3-3. Pitch structure, 5/13-28, Movement II

2/19-27



4/23

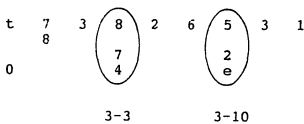
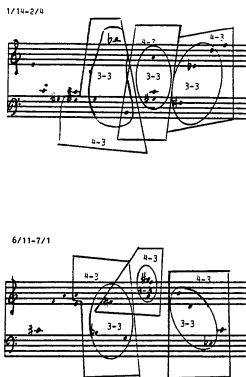


Fig. 3-4. Comparison of 2/19-27 and 4/23-31, Movement II

Three more questionable notes in these two sections need to be scrutinized. The D at 7/24 should be B and the F at 7/1 should be G in order to meet the inversional relationship between (1/1-2/27) and (5/26-7/24)--passage (5/26-7/24) = I5 (1/1-2-27). In addition, the E at 6/18 may well be E# and this argument needs solid theoretical support to become more convincing. As mentioned above, the three-note chords at 1/21 and 6/18 are inversionally-related. At 1/21, A is a series member and G# is a result of registral retention; at 6/18, G# is a series member and A is also a result of registral retention. Undoubtedly, based on their inversional relationship, either the C at 1/21 or the E at 6/18 is a misprint. In other words, if C at 1/21 is a correct note then the E at 6/21 should be E#. On the other hand, if the E is a correct note then the C should be C#. Example 3-6 shows that it is more convincing to put a C at 1/21 and E# at 6/18 because of harmonic homogeneity-- varied presentations of the primary musical idea, set-class 3-3.



Example 3-6. Comparison of 1/14-2/4 and 6/11-7/1, Movement II

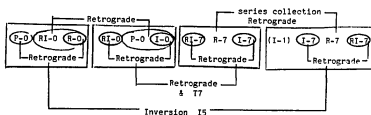
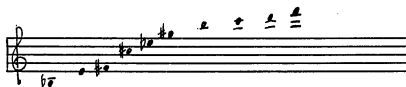


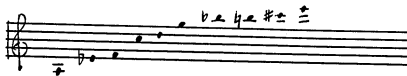
Fig. 3-5. Series structure, Sections I and II, Movement II

Barring the brief I-1 segment, Section I and Section II contain exclusively series at transpositional levels 0 and 7; their relations are shown in Fig. 3-5. Within the free rhythmic run in Section III (9/11-37), like those of the RI-0 free rhythmic run at 3/1-28, the fourth and the seventh member of the series (I-11) are missing. Further comparison of these two free rhythmic runs is worth discussing. Since each note within these two runs is frozen on only one pitch level, if they are rearranged in an ascending order, the resultant collections are exactly related by interval-class 1 (the same as that of RI-0 and I-11):

3/11-27 (RI-0 reordered)



9/11-37 (I-11 reordered)



Example 3-7. Rearrangement of 3/11-27 and 9/11-37,
Movement II

Such slow harmonic rhythm sharply differentiates Section I from Section III, where juxtaposed series share minimal segmental similarity and thus generate faster harmonic rhythm. In Section I, since only series on transpositional level 0 are employed, harmonic continuity and homogeneity are caused by segmental relation A. Note that harmonic continuity is also enhanced by this section's long dynamic curve and impelling rhythm. In Section III, since many of the juxtaposed series share minimal segmental similarity, this section thus features harmonic unconnectedness which is strongly complemented by prevalence of fermatas. Section II is a transitory section in terms of segmental relation. Series in this section are presented only on transpositional levels 0 and 7 and their segmental relation is very low-ranked (either M or N). In sum, segmental relation also contributes to formal articulation in this movement. Speaking of transpositional levels of the series, transposition by interval-class 5 is the primary operation: in Sections I and II, only levels 0 and 7 are employed; again in Section III, the initial level 2 is followed by 9, and near the end, level 8 is followed by 1. Note that transposition by interval-class 6 between the three-note chord passages (RI/RI-2 against R-8/RI-8) is foreshadowed by the insertion of an I-1 segment with an I-7 unit (1 against 7).

As a result, the metronomic tempo can be deduced by the following formula:

number of 16th-notes ÷ (suggested playing time - duration of fermatas)

$$\frac{185 \text{ } \overset{\frown}{\text{F}} \text{'s}}{\overset{\frown}{\text{F}}} \div (90'' - 25'') = \text{ca. } 171$$

In addition, the duration of each section is shown in Fig. 3-8:

		Total Duration
Section I	48.0 $\overset{\frown}{\text{F}}$'s + 2" silence	18.64" \rightarrow
Section II	62.5 $\overset{\frown}{\text{F}}$'s + 4" silence	25.67" \rightarrow
Section III	74.5 $\overset{\frown}{\text{F}}$'s + 19" silence	46.19"
		44.31"

Fig. 3-8. Sectional duration, Movement II

Note that the duration of the addition of Section I and Section II is more or less equal to that of Section III, and the deviation can be compensated by the *rallentando* at the end of Section II. The durational balance is complemented by Henze's use of series. In Section I and II, he used only series at transposition levels 0 and 7, whereas in Section III, he extends the series area to those at levels 1, 2, 8, 9, 11. As a result, the durational balance and conformity of transposition levels

clearly suggest a binary division of this movement. Section I and Section II are indeed two subsections contained by the first section of the overall binary formal structure, and Section III represents the second. In short, a binary division of this movement is variously suggested by three different factors: durational balance, sectional closure in the middle of the movement caused by the *rallentando* and *fermata*, and sectional differentiation in terms of the uses of series, harmonic continuity, and temporal continuity (Section III is extremely discontinuous in comparison with Section I and Section II).

In terms of phrase structure, Section I contains two bipartite phrases which are comprised of two phrase units:

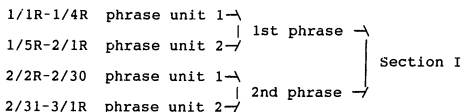


Fig. 3-9. Phrase structure, Section I, Movement II

The treatment of 1/1R-1/4R as a phrase unit is indisputable, since Henze re-employs it to conclude the entire movement, despite slight rhythmic modification.

The interpretation of 1/5R-2/1R and 2/2R-2/30 as two phrase units is not difficult to justify either. In the sixth system, when the same music is inverted, Henze uses a quarter-note rest (6/12R) to separate them as two individual phrase units. For the sake of continuity in Section I, he does not put any rest between them; on the contrary, he enhances the connectedness between the first and second phrase by building a crescendo cutting across them. (See the long crescendo from 2/1-2/30.)

The metric structure of the first phrase is worth discussing. Assuredly, one can treat the initial rest as a silent downbeat and group the first phrase as two regular 9 metric units (Fig. 3-10a); but the inherent symmetrical metric structure, $(2)(2+3+2)(2+3+2)(2)$, is of more musical interest and should be clearly presented in the performance (see Fig. 3-10b). The grouping as shown in Fig. 3-10b treats the first three notes as an anacrusis to the E4 which contains an agogic accent. The middle part of this symmetrical metric structure $(2+3+2)$ is also a symmetrical unit in itself. Its axis coincides with the dynamic highest and lowest points of the first phrase. Fig. 3-10b also illustrates that the phrase units 1 and 2 are motivically related. Three rhythmic cells (x,y,z) in phrase unit 1 are re-employed in phrase unit 2. When x and y reappear, they retain their melodic contour and rhythm as well. The interpretation of the first three

notes as an anacrusis is also supported by the pitch structure. Note that the accented E4 at 1/4, which forms a vertical dyad with the lower F, frames the segment (1/4-10) with another (01) dyad <F,Gb> at 1/10.

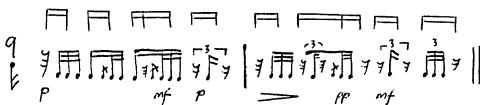


Fig. 3-10a. Rhythmic structure, initial phrase, Movement II

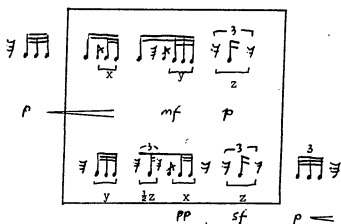


Fig. 3-10b. Rhythmic grouping, initial phrase, Movement II

The second phrase introduces two new rhythmic cells, i.e., the 32nd-note quintuplet and free rhythmic run which are prevalent in phrase units 1 and 2 respectively. As a result, unlike those of the first phrase, the phrase units share no rhythmic similarity. The 13- \bar{F} phrase unit 1 of the second phrase can be treated as an extended 9- \bar{F} metric unit because of the reiteration of a series segment [Bb-D-A-D#-B].

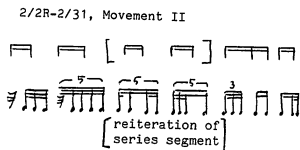


Fig. 3-11. Rhythmic structure, the second phrase, Movement II

The 9- \bar{F} and 13- \bar{F} grouping also dominate the metric structure in Section II. A short hold divides Section II into two subsections. In the first subsection, the first phrase (4/1-4/2R) and the second phrase (5/1-25), which are set off by dynamic contrast, are confined in metric structure of 13 \bar{F} 's and 9 \bar{F} 's respectively. Besides their inversional relation, the metric structure of the second subsection of Section II bears a strong resemblance to that of Section I. Note that the free

rhythmic unit which was last in Section I is now the first (see Fig. 3-12).

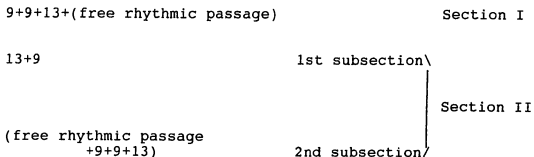


Fig. 3-12. Sections I and II, Movement II

In Section III, together with prevalence of fermata, increased tendency toward fragmentation of phrases causes a severe metric fluctuation that eventually results in destruction of metric structure.

Texture

Due to the frequent occurrence of trichordal simultaneity, the overall textural fabric of this movement is much thicker than that of the first and the tendency toward polyphony at 2/19-27 and 7/16-24 is quite strong. Table 3-1 shows an overall decline in DA throughout the movement. In comparison with that of Section (I and II)--the first section of the movement's binary division--Section III has a lower DS but much higher percentage of three-note-chords. That is to say, the textural contrast in Section III is much greater than that in Section (I and II).

Table 3-1.--Texture of Movement II

Sec.	Duration	NA	NS	SL	DA	DS	% of 3-note- chords
I	18.64"	82	15	11-4-0	4.40	0.80	4.90
II	25.67"	104	28	25-3-0	4.05	1.09	2.80
I + II	44.31"	186	43	36-7-0	4.20	0.97	3.70
III	46.19"	104	16	4-12-0	2.25	0.35	11.50
TOTAL	90.50"	290	59	40-19-0			
		MEAN			3.20	0.65	6.50

Another textural difference between Section (I and II) and Section III concerns density change toward cadence. Even a visual observation of the music reveals that there is an increase in DA as a cadential process in Section I and Section II (see 3/1-30 and 7/1-24). On the contrary, the last three phrases of Section III present a rapid reduction in DA toward the close of this movement (Table 3-2).

Table 3-2.--Texture of the last three phrases,
Movement II

Phrase:	9/11-37	10/1-12	10/13-the end
Duration:	9 $\overset{f}{\text{F}}$ + 2" sil. =14.7"	6 $\overset{f}{\text{F}}$ + 6" sil. =23.1"	29.50"
NA	27	12	13
DA	1.83 >	0.51 >	0.44

($\overset{f}{\text{F}}$ = ca. 171, "sil." denotes "silence")

CHAPTER 4

THE THIRD MOVEMENT

Series Forms and Misprints



For detailed information regarding the series employed in the third movement, the reader should refer to Appendix I. There is only one misprint in this movement: the C5 at 7/4 should be D5. Since the A4 at 7/5 in the old edition has been changed to B4 in the revised edition, the C5 at 7/4 should also be changed so that the segment at 7/1-5 is exactly the transposition of its counterpart at 7/7-13 by pitch interval +8.

Formal Structure and Pitch Organization

The formal division of this movement can be clarified by the quality of vertical components, motivic elements, timbral contrast and rhythmic contrast. Fig. 4-1 outlines the overall formal scheme:

- Section I (1/1-4/22)
 Freely rhythmic, featuring four-note-chords and fermatas.
1. The first thematic group (1/1-2/17).
 The first phrase (1/1-2/9), and the second phrase (2/10-17).
 2. The second thematic group (3/1-4/22).
 The first phrase (3/1-4/13), and the second phrase (4/14-22).
- Section II (5/1-6/26)
 Reiterated e-minor triads played by fingers, freely rhythmic.
- Section III (7/1-20)
 Modified return of the first and second thematic groups, freely rhythmic.
- Section IV (8/1-22)
 Coda, featuring interval-class 1, with regular beat.

Fig. 4-1. Sectional division, Movement III

In comparing the first and second thematic groups of Section I, the following information can be obtained: (1) both thematic groups contain two phrases and the first phrase is much longer than the second; (2) both groups are predominantly free rhythmic; (3) the first thematic group's first phrase concludes with an accelerated run, whereas the second group's with a decelerated; (4) the rhythmic cells,  and , of the second thematic group are actually derived from that of the first group's second phrase. The relation of Section I and its modified return (Section III) will be extensively discussed in the following analysis.

This movement provides a marked contrast to the preceding two movements in rhythm and texture. Many notes in this movement do not have a specified rhythmic value (unstemmed notes). Moreover, a certain four-note chord, which never occurs in either the first or second movement, plays a prominent role in Section I of this movement. There are five different tetrachordal set-classes presented as vertical components in Section I: 4-3 (0134), 4-8 (0156), 4-18 (0147), 4-19 (0148), and 4-20 (0158). Among them, the 4-3 and 4-18 are of the most structural significance. Set-class 4-3 is employed to open and close Section I, and 4-18 ensures coherence since it is the most often used. Note that a [C3,F#3,A3,C#4] of set-class 4-18 (0147) appears at so many spots that it becomes one of the chief factors in sectional unity. Moreover, members of set-class 4-18 also appear as linear segments throughout the entire movement (see Table 4-1). Perhaps the most surprising example is the coda. Functioning as the summary of the movement, the coda contains predominantly interlinked 4-3 and 4-18 linear segments (Example 4-1).

The reason for the prevalence of 4-18 is that it occurs twice as a segmental subset of Series A, and three times within Series B (see Fig. 4-2). At times, by partitioning the series' P or I form, Henze is able to articulate the first five series members, which together form an overlapping statement of 4-3 and 4-18 (e.g., at 2/3-9,

7/1-5, and 7/7-13). However, not all articulated 4-18 sets in this movement are derived from series segments. For instance, as Example 4-2 shows, the [C3,F#3,A3,C#4] 4-18 set at 3/10 does not conform to the adjacency criterion; instead, it results from registral retention. In this 4-18 set, the C3, A3 and C#4 are registrally retained members in P-9, whereas the F#4, the last member in this series, is the newly introduced element. In other words, Henze first points up a primary musical idea [C3,F#3,A3,C#4] 4-18 set at 2/12 as a series segment, then later on in different series units at 3/10 and 7/6, he relies on the very same pitch set to ensure cohesiveness, even though the pitch components no longer follow serial order.

Table 4-1.--Locations of members of 4-18, Movement III

4-18	location
[t-9-6-3]	2/6-9
[9-6-3-2]	2/7-10
[4-5-8-e]	2/15-3/2
[7-8-e-0]	2/16-3/3
[3-2-8-e]	3/15-17
[2-3-6-9]	4/3-6
[3-6-9-t]	4/4-7
[3-8-0-9]	5/6-20
[5-6-9-0]	6/14-17
[4-5-8-2]	see Example 4-1
[2-5-8-9]	see Example 4-1
[6-0-e-3]	see Example 4-1
[7-0-1-4]	see Example 4-1

┌4-18┐

P-0 (A): 5 8 7 4 1 0 e 3 9 2 t 6

└4-18┘

┌4-18┐

P-0 (B): 5 8 7 4 1 0 e 3 t 6 9 2

└4-18┘ └4-18┘

Fig. 4-2. Comparison of Series A and B

Example 4-1. Coda, Movement III

I-2: 7 4 5 8 e (0) (1) (9) 3 t 2 (6)

Example 4-2. 3/1-13, Movement III

While members of set-class 4-18 ensure coherence of the entire movement, a [E4,G4,B4] trichord, the most distinguishing feature of Section II, sharply differentiates this section from the rest of the movement. This <E,G,B> 3-11 trichord is neither composed of adjacent series members nor derived from specific order relations between any series. It is simply an invariant subset extracted non-serially from certain series, and by articulating this very subset, cohesiveness between the series from which it comes can be fostered (see Fig. 4-3). It should be noted that 3-11 and 4-18 are Kh-related; therefore, Henze's using them as major elements to ensure sectional unity displays his striving for variety on the one hand and harmonic relatedness on the other.

P-6: @ 2 1 t ⑦ 6 5 9 3 8 ④ 0

I-6: @ 8 9 0 3 ④ 5 1 ⑦ 2 6 t

I-1: 6 3 ④ ⑦ t @ 0 8 2 9 1 5

Fig. 4-3. <E,G,B> as invariant subset extracted from the series

Containing the first four notes of I-5, the initial 4-note chord <G,G#,Bb,B> is a member of set-class 4-3 (0134). At 2/3-7, the same gesture comes back by seven semitones above as a linear segment: [G-Bb-A-F#]. This gesture appears linearly once again at 4/2-5 as [F-D-Eb-F#]. Shortly thereafter, it returns to its original chordal form at 4/19 and 4/22 as <E,F,G,Ab> to conclude

Section I. At 6/26, the end of Section II, occurs another chordal statement of 4-3 set-class--<C,C#,Eb,E>--which is immediately followed by two more linear statements of this set-class: [Eb-F#-F-D] at 7/1-4 and [G-Bb-A-F#] at 7/7-12. Both chordal presentations of 4-3 at the end of Sections I and II remind listeners of the opening 4-3 tetra-chordal simultaneity and thus ensure sectional closure.

Considering the <C,C#,Eb,E> at 6/26 as T0, one will realize that these three notable chordal statements of 4-3 are indeed T0-T4-T7 related. This large-scale succession of transpositional levels mirrors the small-scale constituent intervals in the e-minor triad ((037) trichord) articulated in Section II. Including two more linear forms of 4-3 at 2/3-8 (T6) and at 4/2-5 (T2), the routine of articulated presentations of set-class 4-3 in this movement, as illustrated in Fig. 4-4, becomes T7-T6-T2-T4-T0. The collection of these transpositional levels, <0,2,4,6,7>, a member of set-class 5-24, exactly mirrors the set-class of the non-serial segment [F#-G#-Bb-C-C#-F#] at 2/19-27 in the second movement. Therefore, it is another good example to show how a musical idea, which is secondary and implicitly presented at one point, later becomes the chief factor to govern the large-scale progression of the music.

1/1	2/3-8	4/2-5	4/19, 4/22	6/26
<G,G#,Bb,B>[G-Bb-A-F#]	[F-D-Eb-F#]	<E,F,G,Ab>	[C,C#,Eb,E]	
T7	T6	T2	T4	T0

Fig. 4-4. Transpositions of 4-3 in Movement II

The first three series employed in this movement are members of Series B (see Fig. 1-3). An unusual way of manipulating series members is employed between R-5 (B) and P-2 (B) as well as between P-2 (B) and I-2. The concluding member of the former series, which is the second member of the latter series as well, is omitted; the eventual appearance of this note in the latter series also serves to complete the former one (see Fig. 4-5).

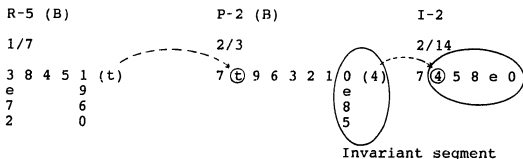


Fig. 4-5. Unusual linking of series

At 3/11-16, Henze manages to create a motivic link

by associating elements derived from I-2 and P-7. After the statement of I-2, its component <Eb,Bb,D> 3-4 trichord is articulated once again at 3/11-13. Functioning as a motivic link, the <Eb,D> dyad from this trichord is immediately restated at 3/14-15 at the same pitch level. At this moment, however, the Eb and D are no longer members of I-2. Instead, they are respectively the second and third member of P-7. Since I-2 and P-7 are N-segmentally-related, instead of articulating their invariant dyadic series segment, Henze points up another dyad <D,Eb> to link these two series (see Fig. 4-6a).

I-2: 7 4 5 8 e 0 1 9 (3) t (2) 6
 P-7: 0 (3 2) e 8 7 6 t 4 9 5 1

Fig. 4-6a. Segmental relation N

R-5(B): 7 2 e 3 8 4 5 6 9 0 1 t
 I-2: 7 4 5 8 e 0 1 9 3 t 2 6

Fig. 4-6b. Segmental relation E'

Also note that the fourth and sixth member of P-7 (B and G) are anticipated at 3/14. They, together with the first member C, form a 3-4 trichord which serves to be the echo of the preceding <Bb,D,Eb> 3-4 trichord. At 1/7-2/2 and 2/14-3/10, Henze employs R-5 (B) and I-2 respectively. These two series are E' segmentally related and share two trichordal invariant segments (Fig. 4-6b). Instead of articulating both invariant trichords, Henze only points up the <9,0,1> which represents three members of the most discernible vertical <F#,A,C,C#> 4-18 tetrachord in this movement.

In other spots in this movement, however, Henze does utilize high-ranking segmental relations to achieve musical unity. Between 2/12 and 3/2, for example, pitch-class set <F,Ab,B,C> is heard with great frequency because of the segmental relation A' between P-2 (B) and I-2 (Fig. 4-7).



Fig. 4-7. Segmental relation A'

The serial context of Section III is quite ambiguous since only segments of series are heard. The [C3,F#3,A3,C#4] set, for example, is a segment within R-5 (B) at 2/1-2. When it reappears at 7/6, however, what precedes it is no longer R-5 (B) elements but those of P-10 instead. As a result, the provenance of this 4-18 set at 7/6 is hard to define. Since it does not belong to the preceding P-10 or upcoming P-2, it can only be construed as a recall of its P-10 counterpart at 2/1-2. On the other hand, omitting the Eb, 7/14-20 is a recall of its I-2 counterpart at 3/7-10. Since the vertical <F#,A,C,C#> 4-18 set is now played with the fingers, the C has to be transposed up an octave so that all four notes lie within the stretches of five fingers.

Throughout this movement, minor thirds and major thirds are extremely prominent. This is because the segmentation of the two most often used simultaneities, 4-3 and 4-18, articulates the (03) and (04) dyadic verticali-

ties. Nevertheless, interval-class 1 should not be overlooked. It is always the distance by which the dyadic components within a four-note-chord are separated. The interpenetration of these intervals is clearly displayed at the outset of the movement:

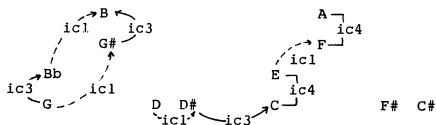


Fig. 4-8. Intervals prevalent at the opening of Movement III

Interval-classes 3 and 4 are also clearly represented linearly. Note that they are strongly articulated by the melodic segment at 2/3-9 and the 32nd-note rhythmic cells in the third system. The triadic elements are obvious in Section II. While the e-minor triad is incessantly reiterated in the upper stave, an Ab-major triad is presented linearly in the lower stave at 5/6-17.

A more detailed examination of the movement further illustrates Henze's affinity with traditional practice. Fig. 4-9 shows that the progression from one transposition level to another in Section I bears close resemblance to the traditional harmonic progression I-VI-II-V. In other words, in terms of progression of transposition levels, interval-class 5 relation is intensively presented in Section I. In the remainder of this movement, the large-scale series progression reflects the set-class 3-11 (037) that is the primary musical idea in Section II. From Section II to Section IV, series levels can be divided into two groups. The first group contains levels 6-1-10; the second contains 5-2-9. Note that sets [6-1-10] and [5-2-9] are members of set-class 3-11 (037). As a result, the series progression from Section II to Section IV composes out the primary musical idea of Section II.

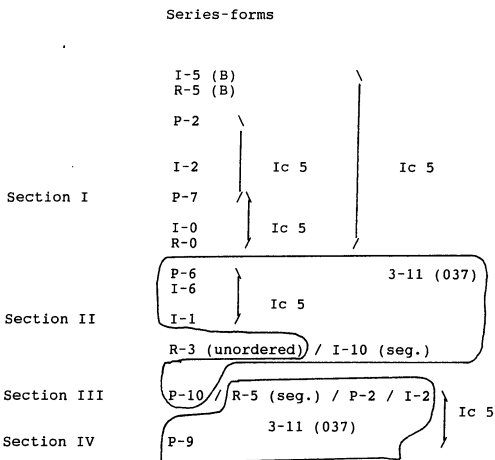


Fig. 4-9. Ic 5, series relation, Movement III

As for the serial order, strictly speaking, the R-0 at the close of Section I should be Tt(R-0), since the first member F# appears after the remaining members are presented. Besides Section III, there are three more spots where linear elements are found totally independent of the pre-established order of the series members. Howev-

er, the contents of H1 and H2 are still discernible. The H1 of I-1 at 5/26-30 is unordered, since it contains the e-minor triad, Eb, and the members shared with the preceding I-6 (F# and Bb) that are disposed according to the series order of I-6. Omitting the G#, the segment 6/13-25 contains R-3 with its discrete hexachordal contents arranged in an ascending order.

The series order of the coda is also worth discussing. The first two notes, C#4 and F#3, result from registral retention. For the most part in the coda, the adjacent members of H1 are grouped in pairs, and the contents of the H2 are grouped by taking every second note (see Example 4-3).

P-9: 2 5 4 1 t 9 $\overbrace{8 \ 0 \ 6 \ e \ 7 \ 3}^a$
 \- / \- / \- / $\underbrace{\hspace{1.5cm}}_b$
 x y z

Rhythm and Duration

Despite the variable rhythm, the sectional duration and proportion can still be calculated. I will make the following assumptions: (1) unstemmed note = ♩ ; (2) \frown = 5", \smile = 4", \curvearrowright = 3", \curvearrowleft = 2", $\text{'} = 1$ "; (3) free rhythmic passage = 1". As a result, the sectional duration of this movement is as follows:

Table 4-2.--Sectional duration, Movement III

Number of	\frown	\smile	\curvearrowright	\curvearrowleft	'	♩	f.r.p.	Duration
1st phrase	2		1	3	4	8.0		29.6"
2nd phrase		3	2	1	1	0.5		21.4"
1st phrase				3	4	8.0	1	17.6"
2nd phrase		3		1	1	1.0		15.8"
Section I								84.4"
Section II	1			1		21.0	1	25.4"
Section III			1			9.5		10.9"
Section IV						6.5		5.4"
TOTAL DURATION:								126.1"

(♩ = ca. 50 \implies ♩ = 0.83 second)

(f.r.p.= free rhythmic passage)

Since the total duration (126.1") deduced from the above calculation roughly matches Henze's suggested performance timing (ca. 2"), the above calculation confirms the pre-conceived approximate time-spans of the fermata and the assumption that an unstemmed note is more or less equal to an eighth-note. Although it by no means implies exact proportional rendition of these free rhythmic elements, the player should have this comparison and proportion in mind so that he knows approximately how long each section or phrase should last.

Deducing the nature of the unstemmed notes is difficult. One possible solution is that unstemmed notes are short and isolated sounds. More significantly, they should not possess any rhythmic weight. Because of the variable rhythm, metric analysis is inapplicable to this movement. However, phrases can still be determined by fermatas. Thorough examination reveals that fermatas in this piece serve either to sustain a sonority or to punctuate a phrase or section. The short fermata () is exceptional in that it functions in both ways (Fig. 4-10).

	Sonority Sustainer	Punctuation
,		✓
∩		✓
∪	✓	✓
⊂	✓	

Fig. 4-10. Functions of the fermatas

Therefore, one can delineate the phrase division using " ; " and " □ " as clues. Extending the rhythmic analysis to the phrase structure of the movement, Table 4-3 reveals how the density of attack, percentage of chordal elements and continuity define the formal division. Section I is characterized by its DA ranging from 0.14 to 2.52--in other words, by extreme fluctuation of DA. In addition, the overall DA of Section I is very much below the movement's mean of 1.63. Due to the prominence of the fermata between and within its phrases, Section I is the longest as well as the most discontinuous section. Section II is characterized by its abundance of three-note chords and four-note chords. Section III, the modified return of Section I, has the highest DS, and its DA is very close to the movement's mean. Section IV, the coda, is the only section featuring a regulated beat. Its highest DA shows that this section is the most continuous. As a consequent of the variations of the sections' DA's, juxtaposed sections in this movement contrast strongly in their density of attack and thus articulate their formal differentiation.

Table 4-3.--Texture of Movement III

phrasal unit	Duration	NA	NS	DA	DS
1st phrase					
1'2	9.24"	3	1	0.32	0.11
1'2'1	13.24"	4	2	0.30	0.15
	7.15"	12	2	1.68	0.27
	<u>29.63"</u>	<u>19</u>	<u>5</u>	<u>0.64</u>	<u>0.17</u>
2nd phrase					
2'1	8.20"	3	1	0.36	0.12
1	7.00"	1	1	0.14	0.14
4	6.20"	4	0	0.65	0.00
	<u>21.40"</u>	<u>8</u>	<u>2</u>	<u>0.37</u>	<u>0.09</u>
1st thematic group	51.03"	27	7	0.53	0.14
1st phrase					
2'7'1	6.28"	10	1	1.59	0.16
3	2.62"	3	0	1.15	0.00
4'1'17	8.73"	22	5	2.52	0.57
	<u>17.63"</u>	<u>35</u>	<u>6</u>	<u>1.98</u>	<u>0.34</u>
2nd phrase					
4'5	15.83"	9	3	0.56	0.19
2nd thematic group	33.46"	44	9	1.32	0.26
SECTION I	84.49"	71	16	0.84	0.18
SECTION II	25.40"	92	11	3.62	0.43
SECTION III	10.90"	21	7	1.93	0.64
SECTION IV	5.40"	22	3	4.07	0.55
TOTAL:	<u>126.19"</u>	<u>206</u>	<u>37</u>		
			MEAN:	1.63	0.29

CHAPTER 5
THE FOURTH MOVEMENT

Series Forms and Misprints

There are five misprints in this movement. The first four of them violate the explicit serial order. The G3 at 2/12 within I-10, for example, is preceded by the fifth, sixth, and seventh members and followed by the tenth, eleventh and the twelfth. Therefore, it should be the eighth member--F within I-10. At 3/4, in order to meet the serial order, the A4 should be C5, the seventh member of I-1. The same thing happens in P-0 at 3/9; this A, preceded by the first and second member and followed by the fourth and fifth, should be G, the third member of P-0. At 4/12, to be consistent with the serial order, the E3, which apparently functions as the eleventh member in I-0, should be C instead. In addition, duplicating a note in octaves linearly (as [E3-E5] at 4/12-13) is rarely seen in the rest of this piece. In comparing the vertical tetrachord at 13/5-6 with that at 12/11-20, one will

realize that a bass clef is obviously missing at 13/5-6. In addition, a treble clef is needed at 13/8 to match the F4 with that at 13/2, and a bass clef is needed at 13/11 to produce a [Bb2,B6] dyad. The justification of the A at 11/24 will be extensively discussed in the analysis of the recitativo passage 9/1-12/10.

Formal Structure and Pitch Organization

In this movement, the most evident sectional articulators are timbral changes, tempo changes, and the transformation of rhythmic quality (regulated pulse versus variable rhythm) occurring at 7/4 and 14/1. This movement can thus be divided into three sections as follows:

- | | |
|---------------------------|---------------|
| Section I (allegretto) | : 1/1-7/3 |
| Section II (molto rubato) | : 7/4-13/11 |
| Section III (allegretto) | : 14/1R-16/12 |

Section III is indeed a modified return of a segment (1/11-2/10) in Section I. Pitch-class modification, timbral contrast, and motivic extension play an important role in differentiating Section III from its genesis at 1/11-2/10. In this movement, each section has individual timbral characteristics. Section I is performed with only medium-soft mallets. Section II, on the other hand,

features frequent timbral changes; it is first performed with hard mallets, then with very soft mallets, and finally with medium soft mallets. Section III features uncus-tomary timbre--it is performed with mallet-handles as well as with hands. Rhythmically, Sections I and III feature regular pulse, whereas Section II is characterized by variable rhythm and irregular pulse. In addition, the transformation from one rhythmic field to another is very smooth. Note that at the end of Section I, the roll-passage from 6/18 to 7/3, the pulse is disrupted. There-fore, in terms of rhythmic transformation, this roll-passage serves as a transition. Section II is itself a large-scale process of rhythmic transformation. By such transformation, a passage of unstemmed notes featuring irregular pulse (7/4-8/12) is led first to a recitativo passage featuring quasi-regular pulse (9/1-12/10), and finally to a passage with regular pulse (12/11-13/11) that anticipates the same rhythmic quality of Section III.

It should be pointed out that in the new edition, two emendations are unsupported by the serial context: the removing of the G2 and B2 at 5/9, and that of the G3 at 5/20. To maintain the serial consistency, the G2 and B2 in the old edition should be changed to A2, the first member of I-4; and the G3, the third member of I-4, at 5/10 should not have been removed.

In the old edition, the vertical dyads at 14/5 and

14/15 are <C#,E>; they have been changed in the new edition to <A,C#>. Admittedly, <A,C#> can generate much closer resemblance between the segment at 2/1-10 and the materials in Section III. However, the <C#,E> dyad in the old edition can produce a much tighter harmonic unit which can also recapitulate another segment of Section I and is therefore highly recommended by this author.

As the old edition shows, when the musical segment at (1/11-2/10) is recapitulated in Section III, Henze makes two discernible changes: the [C-Ab-E-D#-F#] linear segment (1/11-15) is replaced by <F,Ab> and <F#,A> dyadic verticalities (14/1-2), and the <A,C#> (04) dyad at 2/3 by <C#,E> (03) dyad at 14/5. Since the <F,Ab> and <F#,A> dyads have already been presented at 2/20-21, the return of these two dyads strongly enhances the recapitulatory character of the coda. Because of the above-mentioned changes in pitch-class, this recapitulated segment in Section III is initiated by an interlinked I-11:H1 and P-1:H1 instead of by a single P-10:H1 as in Section I. Note that I-11:H1 and P-1:H1 are in fact formed by only two 4-3 sets; each requires a 2-1 set embedded within the other to form a H1 of the series to which they belong (see Fig. 5-1). As a result, P-1:H1 in Section III echoes the R-1:H2 at 2/17-21. Even the cadential <D#,E> at 3/1 is implicitly echoed several times by the [E4-D#4] linearly in the top voice. Since the opening of Section III is virtually

saturated with set-class 4-3, in addition to the establishment of three discrete hexachords (H1 of P-9, P-1, and I-10), this concluding section presents a highly organized harmonic unit at the outset of Section III (see Example 5-1).

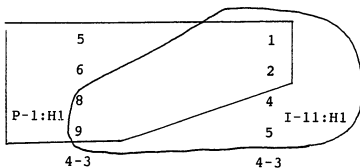


Fig. 5-1. P-1:H1 and I-11:H1

Example 5-1. Harmonic structure, the opening of Section III, Movement IV

A close examination reveals that of eighty-four dyadic verticalities employed in this movement, forty-three belong to dyad-class (01). However, there are three members of this dyad-class that are particularly noteworthy: (1) [Bb2,B6], which opens this movement, appears seven times in Section I, and once at the close of Section II, framing Sections I and II as a close sectional unit; (2) <E,F>, which appears twice at the close of Section I, attracts listeners' attention because of its sustained sonority; (3) <D,Eb>, which opens Section II where it is presented three times, attracts listeners' attention with its sudden loudness and tone color (the first material played by hard mallets). In addition, of these three discernible vertical (01) dyads, two also function as subsets in other larger collections and the set-classes of which also play very prominent roles in this movement. The <D,Eb>, for example, functioning as a subset within a <D,Eb,F#,A> 4-18 (0147) set which twice precedes the <Bb2,B6> dyad at 4/1-2 and 5/1-2 in Section I, is articulated rhythmically (with the D introduced alone on the "after-beat") and registrally (with the Eb5 and D3 serving as the outer notes within this collection).

More significantly, look at Henze's routine of transforming the initial <Bb,B> into a <Bb,B,D,F> 4-18 collection at the very beginning of this movement: he first introduces <Bb,B> at 1/1, then includes a D to make

it to <Bb,B,D> 3-3 (014) set at 1/7, and finally obtains a <Bb,B,D,F> 4-18 set at 2/1-2 by adding a F. Notice that 2/1 is a very important spot because it marks the down-beat of an eighth-note segment (2/1-10) which is to be recapitulated in the coda, Section III. Besides the <Bb,B,D,F> 4-18 set, this segment at 2/1-10 contains one more implicit statement of set-class 4-18, two of 4-3, and two of 4-19 which will be strongly represented in Section II. As a result, it appears that this segment is the genesis of this movement.

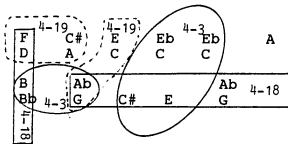


Fig. 5-2. 2/1-10, Movement IV

At 2/6, the presence of the third series member C# at the beginning of an I-10 unit shows Henze's awareness of voice leading as well as rhythmic and intervallic conformity. If instead Henze had presented the I-10 unit in series order at 2/6, either the syncopated rhythm or the stream of dyads in thirds in the upper stave would have been interrupted.

After introducing a phrase from 1/11 to 2/13, Henze unfolds the music by means of mirror-inversion. Note that segment 2/6-13 and segment 2/14-21 are mirror-inverted, and they are I9 related (see Fig. 5-3). This inversional relation mirrors that of the components of the distinctive <Bb,B> 01 dyad: I9 maps Bb and B onto each other. In the old edition, at the beginning of the coda, the relation between P-1 and I-10 also enhances this I9 relation (see Example 5-1).

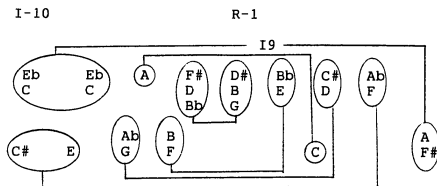


Fig. 5-3. I-10 and R-1

Besides articulating the same <Bb2,B6> dyad periodically, Henze sometimes re-introduces certain motivic fragments to ensure structural unity and musical continuity. For example, the segment at 5/1-3 is a return of segment 4/1-5. The repeated segment is by no means a continuation of I-0; instead, it constitutes the H2 of P-0. Due to the segmental relation A' of P-0 and I-0, the five preceding members of I-0 at 4/11-12 can also function as a pentachordal series segment of P-0. As a result, Henze can generate musical continuity and motivic cohe-

siveness at the same time.

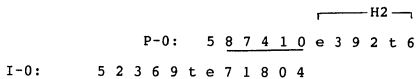


Fig. 5-4. Segmental relation A, P-0 and I-0

Notice also that this repeated segment (P-0:H2) contains three pitch-classes <F#,A,Bb> which also appear in the following I-4:H1. In order to provide continuity and unity, Henze presents these three pitch-classes on the same pitch levels in both series units. Moreover, in I-4:H1, he interchanges the third member G and the fourth member Bb, so that the resultant <F#,A,Bb> verticality at 5/4 can present a 3-5 (014) trichord echoing the preceding 3-5 statement <Bb,B,D> in P-0:H2 at 5/2-3. The segment at 8/2-4, for another example, is obviously a simplified re-statement of the segment at 7/4-10. Note that Henze, following an <E,F> dyad, also uses the [D6,Eb6] to start this returned statement as he did at 7/4. The reason that Henze elects to restate these four pitch-classes is interesting. First of all, these four pitch-classes constitute a member of set-class 4-1 (0123) overlapping the preceding one, <D,Eb,E,F>, at 8/1-2. In addition, both of these two 4-1 members represent an ordered series segment:

8/1-2	<u>T1I-0:</u>	$\overbrace{4\ 5\ 2\ 3\ 6\ 9\ t\ e\ 7\ 1\ 8\ 0\ 4}$
8/2-4	<u>T1I-10:</u>	$\overbrace{2\ 3\ 0\ 1\ 4\ 7\ 8\ 9\ 5\ e\ 6\ t\ 2}$

Fig. 5-5. Two Members of 4-1 in 8/1-4, Movement IV

Note that I-0 and I-10 are the two most often used series in this movement. This instance thus demonstrates that Henze also treats primary musical ideas as secondary materials at certain spots.

At times, by omitting series members, Henze can also produce a "secondary" series unit. In the segment at 7/7-8/1, a statement of T1R-9, Henze omits the seventh member G#. As a result, the sixth, eighth, ninth, tenth, eleventh, and twelfth members constitute an ordered I-7:H1:

<u>T1R-9:</u>	2 3 7 e 6	<table style="border-collapse: collapse; text-align: center;"> <tr> <td style="padding: 0 5px;">0</td> <td style="padding: 0 5px;">8</td> <td style="padding: 0 5px;">9</td> <td style="padding: 0 5px;">t</td> <td style="padding: 0 5px;">1</td> <td style="padding: 0 5px;">4</td> <td style="padding: 0 5px;">5</td> <td style="padding: 0 5px;">2</td> </tr> <tr> <td colspan="8" style="padding: 5px 0 0 0;">x</td> </tr> </table>	0	8	9	t	1	4	5	2	x							
0	8	9	t	1	4	5	2											
x																		
I-7:H1		<table style="border-collapse: collapse; text-align: center;"> <tr> <td style="padding: 0 5px;">0</td> <td style="padding: 0 5px;">9</td> <td style="padding: 0 5px;">t</td> <td style="padding: 0 5px;">1</td> <td style="padding: 0 5px;">4</td> <td style="padding: 0 5px;">5</td> </tr> </table>	0	9	t	1	4	5										
0	9	t	1	4	5													
		(x = omitted member)																

Fig. 5-6. I-7 as a secondary series

A collection may sometimes function as a pivot to

"modulate" into another series unit. The roll-passage at 6/18-7/3, for example, spans two series units: T1R-4 and T1R-9. At 7/2, the <A,Bb>, the nexus of these two series units, serves as the first and second members in the T1R-4 and the eighth and ninth of the T1R-9. As a result, this roll-passage can be divided into two halves (two tetrachords). Since both series are of the same family (T1R), these two tetrachords are members of the same set-class: 4-8 (0156). A close examination also reveals other similarities between these two tetrachords: both of them contain two 01 dyadic verticalities, and their upper linear dyads feature unordered pitch-class interval 6 while their lower feature 4.

Another example of a pivotal collection occurs at 12/11. An ordered I-8:H2 is clearly presented at 12/9-20. The <G#,A,C,E> verticality at 12/11, serving as the last four members of I-8, is indeed a pivot for "modulating" into the upcoming R-6 unit where it serves as the first, second, third, and fifth members. As a result, two R-6 unit frame Section I and Section II and thus make these two sections sound like a large-scale self-contained entity. Note that the [Bb2,B6] dyad that opens Section I and closes Section II also enhances such formal closure.

The recitativo passage 9/1-12/6 consists of three parts (A, B, C) and they are transpositionally related:

A: 9/1-10/3

B: 10/4-11/8

C: 11/9-12/6

A = T₀, B = IeT₆(A), C = T₁₁(A)

Fig. 5-7. Series structure, 9/1-12/6, Movement IV

However, there is a three-note segment at 9/14-16 that is not transpositionally answered in other counterparts (at 10/16-17 in Part B and 11/22-24 in Part C). Since this segment, in both Part A and Part C, contains three notes, it is obvious that its counterpart in Part B comes short by one note. In addition, the segment [A#-F#-D-C#] at 9/16-19 is related by transposition and retrograde to the [G-Ab-C-E] at 10/13-16. Therefore, the [F-Db-C] at 11/25-27 needs an A to fulfill such transpositional relation. There are two possible ways of emending the music as shown in Table 5-1. Option 1 needs to change two notes; Option 2 needs to change only one and would therefore be preferable.

9/1-25

```

      8 9 5 e 6 t 2 3 0 1 7 8 5 9 7 t 6 2 1 8 5 6 9 0 1
                |           x x
                T11
11/9-12/6    |
              7 8 4 t 5 9 1 2 e 0 6 7 4 8 9 8 5 1 0 7 4 5 8 e 0
                |           x x

```

(x = inconsistent note)

Fig. 5-8. T1/T11 relation of segments 9/1-25 and 11/9-12/6

Table 5-1.--Options of emendation

Location	Option 1	Option 2
9/14-16	A-G-F#	A-G-A#
10/16-17	E-C#-(D#)	E-C#-(D#)
11/22-24	G#-F#-A	G#-A-Gb

(circled notes are suggested emendations,
and (D#) is a missing note).

Section II contains fifteen members of 4-19 (0148). Two of them are vertical statements and six of them are not contiguous series segments (Table 5-2). Among these fifteen 4-19 members, three in particular attract the listener's attention: (1) <F,F#,A,C#>, one of the vertical statements, presented consecutively three times at 8/9-11; (2) <G#,A,C,E> at 12/11-20 and 13/5-6, another

vertical statement, presented ten times consecutively right after the recitativo passage; (3) [E-B-G-Eb], the last four notes of the recitativo passage isolated from the passage's transpositionally tri-partitioned structure. (Marimbists should intentionally point up these four notes during the performance.)

Table 5-2.--Members of 4-19, Section II,
Movement IV

Members of 4-19 (0158)	Location
<F,F#,A,C#>	8/9-11
[B-F#-A#-D]	9/4-7
[G-A#-F#-D]	9/15-18
[A#-F#-D-C#]	9/16-19
[G-Ab-C-E]	10/13-16
[Ab-C-E-C#]	10/14-17
[G#-E-C-F]	11/2-5
[B-Eb-D-G]	11/6-9
[Bb-F-A-C#]	11/12-15
[F-A-C#-D]	11/13-16
[A-Gb-F-Db]	11/23-26
[G3-B-C-E]	12/4-7
[E-B-G-Eb]	12/7-10
<G#-A,C,E>	12/11-20, 13/5-6

While the segment 2/1-10 provides primary set-types of this movement, the initial phrase 1/1-10 establishes the transposition levels by which members of distinctive set-classes in this movement are developed. This opening phrase consists of an incomplete statement of a rotated series T4R-6 and the first nine members (in serial order)

Note that the first four statements are contained by the structurally important segment 2/1-10, and the last occurs after the well-articulated, [D4,C#6] at 2/17-19 and returns at 14/1-2 to opening the coda.

Set-class 3-8 (026), on the other hand, mirrors the set of transposition levels of the (01) dyadic verticalities. As described previously, the [Bb2, B6], <E,F> which appears twice at the close of Section I, and <D,Eb> which opened Section II are the three most distinctive (01) dyads in this movement. Note that if <Bb,B> is considered as T0, then <D,Eb> will be T2 and <E,F> will be T6; and set (T0,T4,T6) is a member of set-class 3-8 (026).

1/1 6/18 7/3 7/4 13/11

T0 (T6) T3 T0

Example 5-2. Transpositions of (01) dyads, Movement IV

In addition, notice that the collections made up of transposition levels which govern the (01) dyadic verticalities in the roll-passage, [T0,T5,T7], and the three most distinctive 4-19 members in Section II, [T10,T0,T3], are subsets of 4-23 (0257).

F	B	Bb	E
E	C	A	F
(T0	T7	T5	T0)

Fig. 5-11a. (01) dyads in the roll-passage, Movement IV

<F#,A,C,C#> at 8/9-11, T0
 <Eb,E,G,B> at 12/7-10, T10
 <G#,A,C,E> at 12/11-20, T3

[T10,T0,T3] = {0,2,5}

Fig. 5-11b. 4-19 members in Section II, Movement IV

The pitch structure of Section III strongly enhances its summary character as a coda. As the early analysis discloses, the beginning of this section recapitulates the segment first introduced at 2/1-10. At the end of this section, a verticality <G,Ab,C,D#>, a member of 4-20 (0158), is extensively represented. Although no other member of this set-class has been articulated in this movement, the ending of Section III is still strongly associated with Section II because of the (R2,Rp) relation of 4-19 and 4-20.

In Section I, series are also transposed in accordance with (026) relation:

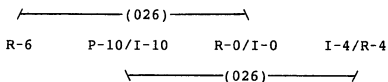


Fig. 5-12. Series transpositions, Section I, Movement IV

Within each of the three parts that make up the recitativo passage in Section II, the transpositions outline set-class (016). The same set-class is found between the sections. If Part A as a whole is called T0, Part B will become T6 and Part C become T11. As a result, the set of series transpositions in each part exactly mirrors the large-scale transpositions operated on these three parts:

Part A:	I-10, I-4, I-3	<10,3,4>=(016),	T0 \
Part B:	RI-9, RI-10, RI-4	<4,9,10>=(016),	T6 (016)
Part C:	I-9, I-3, I-2	<9,2,3>=(016),	T11 /

Fig. 5-13. Series transpositions, recitativo passage, Section II, Movement IV

It should be noted that two discernible members of set-class 3-5 (016) occur in the opening phrase. In the bass line, the first three notes [Bb-B-F] constitute a member of 3-5, as do the next four notes [Bb-Eb-Bb-A].

Rhythm, Meter and Duration

If the conventional metronomic tempo for "allegretto" (MM. $\text{♩} = 110$) is adopted in this movement, and the duration of three freely rhythmic elements in Section I is estimated as follows:

- (1) each unstemmed note at 5/9-10 occupies 2 ♩ 's;
- (2) since the duration of the five-second fermata at 7/3 is equal to that of 18 ♩ 's (MM. $\text{♩} = 110$), the duration of the roll-passage (6/18-7/3) is figured as 6+6+6+18 ♩ 's;
- (3) $\text{♩} = 5''$, $\text{♩} = 4''$, $\text{♩} = 3''$, $\text{♩} = 2''$, $\text{♩} = 1''$;

the duration of each section can be deduced as shown in Table 5-3. The sectional proportion is very close to 6:3:2, and the proportion ratio of two rhythmically contrasting sections, Sections I and II, is 2:1. In addition, the duration of the shortest Section III is more or less one-third of that of Section I.

Table 5-3.--Sectional duration, Movement IV

	Contents	Duration
Section I	140.5 \bar{f} 's + γ + \square	38.3" + 3" + 2" = 43.3"
Section II	uncountable	80" - 43.3" - 15.3" = 21.4"
Section III	56 \bar{f} 's	15.3"

What follows now will be a closer look at each of the phrases. Generally speaking, in Section I, phrasing is largely determined by dynamic contour and pauses:

Table 5-4.--Phrasal structure, Section I, Movement IV

Phrase	Location	Dynamic Contour	Number of 16th Notes
1	1/1-1/6R	$p \rightarrow mf, f$	14.0
2	1/11-3/1	$mf \rightarrow p \rightarrow f - sf$	28.5
3	3/2R-3/4R □	$p \rightarrow, mf \rightarrow sf$	14.5
TOTAL =			57.0
4	4/1-4/4R□	$\leftarrow p, ppp$	9.0
5	4/6-5/1R	$p \rightarrow sf$	8.5
6	4/2R-4/5R	$p \rightarrow, mf$	9.0
TOTAL =			26.5
7	5/8-5/11	$sf \rightarrow p$	8.0
8	6/1-6/3R	$pp \rightarrow sf$	6.0
9	6/5-7/3	$pppp \rightarrow ppppp$	43.0
TOTAL =			57.0

Table 5-4 shows that Section I can be divided into three subsections. The first subsection (1/1-3/4R) features a 14- \bar{f} unit, whereas the second features 9- \bar{f} . Moreover, the duration of the second subsection is more or

less half of that of the first and that of the third. Therefore, the internal sectional proportion of Section I is 2:1:2. In Section I, each subsection contains three phrasal units; the approximate proportions of which are 1:2:1 in the first subsection, 1:1:1 in the second, and 4:3:21 in the third. Note that the proportion ratio 4:3:21 implies that the sum of the first two components is one-third of the last: $(4+3):21 = 1:3$.

Functioning as sectional articulator, two fermatas " \square " also divide Section II into three subsections. Since the rhythm of the first two is variable, no definitive idea of phrasing can be established. Performers can have numerous ways of phrasing the musical elements in these two subsections. For example, one may interpret each of the attacks as an isolated sound, or group them in accordance with the series units, to suggest only two. Adding a little "rhythmic weight" to those notes in the upper stave at 9/1-12/10 is highly recommended because of Henze's specific way of notating them.

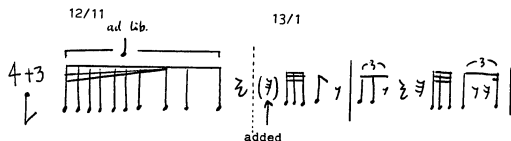


Fig. 5-14. 12/11-13/11, Movement IV

As shown in Fig. 5-14, one may treat the third subsection (12/11-13/11) as two phrasal units of equal length by mentally adding a 32nd-note rest prior to 13/1. As a result, the initial decelerated figure is of quarter-note value, and could be sustained ad libitum. The tempo of the third subsection should be somewhat different from that of Section III, so that the return to the original "allegretto" tempo can be discernible. However, the tempo of the third subsection can be either faster or slower than that of Section III, depending upon the playing time of the former two subsections. The most significant point is to adjust the total playing time of the entire Section II to about twenty-one seconds (see Fig. 5-15). The phrasing of Section III is quite straightforward, as what the dynamic contour suggests--Section III contains one single phrase spanning the entire section.

Texture

Table 5-5 shows that the DA (density of attacks) plays a very important role in articulating the formal divisions. The DA's of three sections are markedly contrasting to one another. In addition, the movement's high DS sharply differentiates this movement from the others. Moreover, this movement features dyadic sonority as its SL

shows.

Table 5-5.--Texture of Movement IV

Section	NA	NS	SL	Duration	DA	DS
	49	28	20-5-3	17.5"		
	20	13	8-5-0	10.2"		
	25	6	4-2-0	15.1"		
I	94	47	32-12-3	43.3"	2.17	1.08
	18	13	9-1-3			
	84	0	0-0-0			
	21	13	1-0-12			
II	123	26	10-1-15	21.4"	5.78	1.21
III	47	42	41-0-1	15.3"	3.07	2.75
TOTAL	264	115	83-13-19	90.0"		
				MEAN	2.93	1.28

CHAPTER 6

THE FIFTH MOVEMENT

Series Forms and Misprints

The series forms employed in this movement are displayed in Appendix I. In general, the emendation of errors is quite easy to justify because each error clearly violates the explicit serial order. The only perplexing correction in the revised edition is the six-note chord at 5/1. In order to execute this chord, one must either hold six mallets from the very beginning of this movement, or change from four-mallet to six-mallet playing within the very short time-span of the quarter-note rest at 5/1R. As every marimbist realizes, it is extremely awkward to perform this movement with six mallets; therefore, neither above-mentioned method is practical. Henze intends to build an P-5 unit between 5/1-5L/7. As a result, one can have three ways of rendering this six-note chord by holding four mallets: (1) arpeggiation; (2) segmentation; or (3) modification by making reference to the first edition--omitting A3 as well as C#5, and replacing E#3 with F#3 (see Example 6-1).

m. 13, Movement V

The image shows a musical score for measure 13 of Movement V. It consists of two staves: a treble clef staff on top and a bass clef staff on the bottom. The key signature has one sharp (F#). The first two measures are labeled (1) and (2), and the last two are (3). Above the first two measures is the text "1st edition" and above the last two is "emendation". Below the first measure is "misprint". The notation shows a six-note chord in each measure, with various accidentals and stems. In measure (2), there is a circled note in the bass clef staff. In measure (3), there is a circled note in the bass clef staff.

Example 6-1. Three ways of rendering the six-note chord at m. 13, Movement V

Formal Structure and Pitch Organization

The ternary division of this movement is overtly suggested by a single factor: the change of the rhythmic quality (regulated pulse versus variable rhythm). In fact, the entire movement presents a large-scale pulsational disruption:

Section I (1/1R-5/1)	with barlines and regular pulse
Section II (5/2R-11L/3R)	with regular pulse, but without barline
Section III (11/3-the end)	variable rhythm--without barline or regular pulse

Fig. 6-1. Sectional division, Movement V

In Section I, the sectional division (mm. 1-7 and 8-13) is greatly enhanced by the sudden break in textural consistency at mm. 8-9. The first subsection contains two phrases, each consisting of two phrase units. The second subsection, on the other hand, contains one uninterrupted phrase spanning six measures. The outline of the phrases in Section I may be summarized as follows:

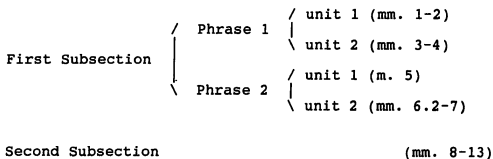


Fig. 6-2. Phrase structure, Section I, Movement V

In Sections II and III, the most evident sectional articulators would appear to be pauses (fermatas) and/or timbral changes occurring at 7U/3, 9U/1R, and 10L/5R in Section I, as well as 13/1, 15/8, and 16/14 in Section III. Fig. 6-3 outlines the subdivision of Sections II and III:

Section II	/	Phrase 1	(5/2R-7U/3R)
		Phrase 2	(7U/3-8U/3R)
		Phrase 3	(9U/1R-10U/1R)
	\	Phrase 4	(10L/5R-11L/3R)
Section III	/	Subsection 1	(11/3-12/28)
		Subsection 2	(13/1-15/7)
		Subsection 3	(15/8-16/13)
	\	Subsection 4	(16/14-the end)

Fig 6-3. Subdivision of Sections II and III, Movement V

The first subsection of Section III is clearly delineated into three phrases. The first phrase (11/3-11/22) opens with a <F,G,Ab> 3-2 (013) trichord and closes with a Bb2. The second phrase (12/1-12/12) also opens with a 3-2 trichord--<E,F,G>, T11 of the <F,G,Ab> of the first subsection--and again closes with a Bb2. Notice that the registral and intervallic spacing of these two 3-3 trichords are identical. The third phrase is the shortest one (12/23-12/28), and recalls the opening materials of this movement.

The top voice is the primary melodic part in Section I accompanied by a subordinate fabric underneath. Later in Section II, it is challenged by a secondary voice in the left-hand part. The contents in the top voice at mm. 5-6.1 and 10.3-11.1 have certain intervallic and rhythmic

similarities. Both of them feature ordered pitch interval +1, syncopated rhythm, and repetition (Example 6-2). It is important to note that the first two above-mentioned characteristics have already been presented in the initial <E,F,G,Ab> tetrachord of this movement. This tetrachord is also synopated, and is partitioned into two dyads, <E,G> and <F,Ab>, which are separated by ordered pitch interval +1. This initial tetrachord is a member of set-class 4-3 (0134) which contains the most prominent (01) dyad and 3-3 (014) trichord of Section I. The (01) dyad is the ultimate linear element in the top voice. A close examination reveals that in Section I, of sixty-three intervals formed by adjacent members within a sixty-four-attack-point top voice, twenty-four belong to interval-class 1. As for the 3-3 (014) trichord, it serves as the primary unifying element of Section I, both as a structural melodic and harmonic set; the significance of this will become evident during the course of the discussion of Section I's harmonic structure below.

mm. 5-6.1

mm. 10.3-11

Example 6-2. Similarities of mm. 5-6.1 and mm. 10.3-11.1, Movement V

- I. Set-class: 3-3 (014)
Criteria of Segmentation
1. registral proximity
 2. registral prominence
 3. linearity
 4. order of appearance

- II. Set-class: 3-3 (014)
Criteria of Segmentation
1. verticality
 2. functional similarity (harmony)

Example 6-3a. Set-class 3-3 (014) in mm. 1-2.1, Movement V

- I. Set-class 3-10 (036)
Criteria of Segmentation
1. verticality
 2. registral proximity
- II. Set-class 3-10 (036)
Criteria of Segmentation
1. registral proximity
 2. functional similarity (harmonic bass)
 3. order of appearance

Example 6-3b. Set-class 3-10 (036) in mm. 1-2.1, Movement V

5. andante cantabile (*♩* ca. 75)

The musical score shows three segments of music. Segment I is a single quarter note G4. Segment II is a quarter note A4. Segment III is a quarter note B4. The score includes a treble clef, a bass clef, and various musical notations such as dynamics (p), articulation (accents), and fingerings (5).

- I. Set-class: 4-3 (0134)
 1. registral proximity
 2. order of appearance
 3. structural similarity
 (two (03) dyads)
 4. functional similarity
 (anacrusis)
- II. Set-class 4-3 (0134)
 Criteria of Segmentation
 1. registral prominence
 2. registral proximity
 3. order of appearance
 4. functional similarity
 (melody)
- III. Set-class: 3-4 (015)
 Criteria of Segmentation
 1. registral prominence
 2. functional similarity
 (melody)
 3. order of appearance

Example 6-3c. Set-classes 3-4 (015) and 4-3 (0134)
 at mm. 1-2.1, Movement V

5. andante cantabile (♩ ca. 75)

The image shows a musical score for a piece titled "5. andante cantabile (♩ ca. 75)". The score consists of two staves: a treble clef staff on top and a bass clef staff on the bottom. The music is written in a key signature of one sharp (F#) and a time signature of 3/4. The tempo is marked "andante cantabile" with a quarter note equal to approximately 75 beats per minute. The dynamics are marked "p" (piano). The score includes several measures of music, with handwritten annotations in black ink. These annotations include large circles around specific notes and groups of notes in both staves, and a bracketed group of notes in the treble staff. The annotations appear to be highlighting specific musical elements, likely related to the set-class 3-3 (014) mentioned in the caption.

Example 6-4. Members of set-class 3-3 (014)

Based upon various musical domains (registral proximity, order of appearance, functional similarity, and intervallic association, to name only four), different segmentations of the musical materials at mm. 1-2.1 reveal that this passage contains some potential collectional properties. (see Example 6-3a,b,c and Example 6-4). In fact, as the following analysis shows, all of them are to be re-employed and articulated at various spots later in Section I. Some, such as 3-3 (014) and 4-3 (0134), are of greater structural importance. Others, like 3-10 (036) and 3-4 (015), will only be re-employed momentarily for harmonic purpose. However, it is still safe to say that mm. 1-2.1 presents the genesis of the pitch structure of the entire Section I.

As the above analysis reveals, the ultimate (01) dyad of Section I is presented linearly by two (03) dyadic verticalities which are separated by ordered pitch interval +1 at the outset of this movement. In the top voice, the linear [G-Ab] dyad is followed by a B; as a result, another structurally important set--trichord 3-3--is formed. Furthermore, this [G-Ab-B] trichord produces another 4-3 (0134) tetrachord with the upcoming Bb in the top voice echoing the initial <E,F,G,Ab> of the same set-class. A close look at the subordinate harmonic fabric in m. 1 reveals that both the B and Bb in the top voice are harmonized by a 3-3 (014) trichord. In the same measure,

presented in the bass is a 3-10 (036) trichord formed by C#, G, and Bb. Note that the 3-3 and 3-10 set-classes presented in this measure will later be made prominent at the close of Section I (see Fig. 6-4).

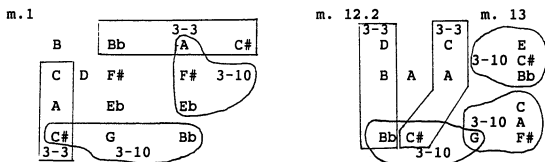


Fig. 6-4. Set-classes 3-3 and 3-10 in m. 1 and mm. 12.2-13, Movement V

Fig. 6-4 also shows that within the harmonic fabric at m.1, ordered pitch interval +6 is extensively represented: [C#3-G3] in the bass, [A3-Eb3] in the tenor, and [C4-F#4] in the alto. It should be noted that these (06) dyads are preparation for the dyads of the same set-class and members of 3-5 (016) which play a very prominent role at mm. 4-5 for sake of variety. Since the D4 at m. 1.1 is introduced alone, it is very tempting to perceive this note as a part of the top voice, instead of as a part of the alto. As a result, this D4 can be heard as a component of another 3-3 set formed by the surrounding B4 and Bb4 together with this D4. In fact, such melodic curve is

later firmly established in the top part at m. 2, with an extended intervallic span. (Compare with [C#5-D4-C5] at m. 2.) From a musical standpoint, these two linear tri-chords--[B4-D4-Bb4] and [C#5-D4-C5] play a very important role in generating continuity and cohesiveness in this phrase. First of all, they share a common member D which is presented at the same pitch level. Second, they have similar melodic contour. When the D4 at m. 2 is approached from the C#5, listeners would expect a forthcoming melodic ascent by recalling the similar melodic contour projected by the former [B4-D4-Bb4] linear trichord. Interestingly, with respect to rhythm, they are inversionally-related. Note that the rhythmic of the [B4-D4-Bb4] is long-short-long, and that of [C#5-D4-C5] is short-long-short. In m. 2, as shown in Example 6-4, set-class 3-3 continues to function as linear and harmonic generator. Also note that in m. 2, the (01) dyad is articulated as a vertical component for the first time--<F,F#> and <G,G#> at m. 2.2.

At mm. 3-6.1, set-class 3-3 (014) gradually quits the scene and 3-5 (016) starts to take over. At m. 3, 3-3 and 3-5 set-classes are more or less equally prominent; however, at m. 4-6.1, set-class 3-5 totally governs the melodic line. Note that at this moment, the harmonic materials are basically derived from those of m. 1, namely, set-classes 3-10 and 4-3 (see Example 6-5). At the

end of the first subsection (mm. 6.2-7), set-class 3-3 comes on the scene again; it permeates the melodic line and sometimes extends vertically into the lower voice. It is also important to note that at mm. 6.2-7, set-class 4-19 (0148) serves as the basic harmonic material for the first time, framing this concluding phrase of the first subsection. This phrase opens with two 4-19 tetrachordal verticalities. In addition, the concluding $\langle D, F\#, Bb \rangle$ trichord in the lower voice can form four different members of 4-19 (0148) with the notes (except the E) in the upper voice (see Example 6-6). To sum up, members of set-classes 3-3 and 3-5 alternately serve as the primary unifying elements in the first subsection; however, equally important to the pitch structure is the 4-3 (0134), the member of which constantly functions as a superset containing the structurally important 3-3 sets, or sometimes co-exists with the members of 3-3 and 3-5 set-classes sharing one or two of their pitch-class components. (See m. 3 and m. 7 as shown in Example 6-5 and Example 6-6 respectively.)

Example 6-5. Measures 3-5, Movement V

members of 3-3

Example 6-6. Measures 6.2-7, Movement V

Henze employs another member of 4-3 to open the second subsection at mm. 8-9. In these two measures, this six-note single line can be partitioned into two members of 3-2 (013)--[G-A-F#] and [Bb-C-A]--according to their order of appearance and rhythmic similarity. In fact, set-class 3-3 was articulated previously in m. 7 (see Example 6-6). Note that 3-3 is also a subset contained by the 4-3; however, it does not emerge at the musical surface until the end of the first subsection. After functioning as primary linear element at mm. 8-9, it no longer plays a prominent role in the second subsection. In general, 3-3 (014) governs the melodic line from m. 10 to m. 12 (see Example 6-7). At mm. 11-12.1, the melodic line is accompanied by three consecutive members of set-class 3-4 (015), a set that was briefly introduced in the melodic line at mm. 1.1-2.1 (see Example 6-3c, III).

The image shows a musical score for two staves, likely piano and violin/viola. The top staff contains the melodic line. Annotations include '3-3' above a circled group of notes in measure 10, and '3-4' above circled groups of notes in measures 11 and 12. The bottom staff shows accompaniment with various rhythmic markings and dynamics like 'mf' and 'p'.

Example 6-7. Measures 10-12, Movement V

Extending this examination into Section II, one can find out the (01) dyad still dominant the upper voice. (Look at 5U/7-6U/1, 6U/8-7U/2, 7U/4-8U/12, and 9U/9-14.) However, one cannot find any trichordal or tetrachordal set-class constantly articulated for large stretches of music. Every time members of a set-class are presented for one or two beats, the pattern is suddenly interrupted by members of a new set-class. Therefore, harmonic organization in Section I is enhanced by set-class saturation, whereas harmonic variety in Section II is fostered by unstable pitch structure. Only one common characteristic shared by these two sections is the prominence of the (01) dyad in the top voice.

The (01) dyad, both horizontal and vertical, is also very prominent Section III. In addition, as in the former sections, it still serves as the common subset of those articulated trichords in this section. Speaking of tri-chordal pitch-class set, primary emphasis is given to a member of set-class 3-2 (014); receiving secondary stress in this section are members of 3-4 (015) (see Example 6-6). This movement ends on a 6-Z36 hexachord that is partitioned into two widely separated trichords --<A,Bb,C#> 3-4 (015) and <B,C,E> 3-3 (014). In addition, notice that 6-Z36 is the set-class that closed the first movement. The remaining portion of this section rather freely presents members of set-classes such as 3-2 (013)

and 3-5 (016) intermittently throughout this movement.

The most prominent characteristic of Section III is the reiteration of B6 and Bb2. Most of the time, pitch-classes Bb and B are frozen on the same pitch level in this section (Bb is presented as Bb2, and B as B6.) Notice that these two pitches have already been given great emphasis in Section I of the fourth movement; they are never presented simultaneously as in the preceding movement, and their frequent occurrences in these two registral extremes certainly attract listeners' attention. (Note that in a standard 4-1/3 octave marimba, Bb2 is the second lowest note and the B6 is the second highest.) The structural background of these two notes is also worth discussing. As Table 6-1 shows, of twenty-two Bb2's and eighteen B6's presented in this section, only three of each are correctly placed members in their series units; the remaining are either misplaced members, repetitions, registral retentions, or anticipations. As a result, the serial order in this section is disrupted mainly by these two distinctive pitches.

Table 6-1.--Harmonic background of B6's and Bb2's
in Section III, Movement V

Location	B6	Bb2	Location	B6	Bb2
11/7	1		14/1	2	
11/13	1		14/2		1
11/16		2	14/3		4a
11/19	1		14/5	4a	
11/22		3	14/10		1
12/4	1		14/15		4b
12/6		5	14/19		4b
12/12	4b		14/24		4b
12/13		2	15/7	2	
12/20	1		15/13	2	
12/22		4a	15/14		5
13/7	3		15/17		1
13/9		3	15/19		4a
13/10	4a		16/3	1	
13/12	4a		16/4	1	
13/13		4a	16/5	4a	
13/14	4b		16/23		1
13/16		2	16/24	1	
13/18		4a	16/25		4a
13/2	1		16/26		4a

- (1) misplaced member;
(2) correctly placed member;
(3) repetition;
(4a) registral retention, in the same series unit;
(4b) registral retention, in other series unit;
(5) anticipation.

Each section has its own characteristic series progression. As Fig. 6-5 shows, the first subsection of Section I is characterized by two progressions that are I10 related. The set of their transposition levels is a member of 3-9 (027). Besides, by this I10 operation, they can be mapped onto each other.

Linking the second subsection of Section I and Section II together, one can find out that this large stretch of music contains two groups of series; the set of transposition levels within each group is a member of set-class 3-5 (016). The combination of both is a member of (0167) which is the primary musical idea in the first movement. Finally, in Section III, the set of transposition levels features set-class 4-23 (0257) which contains the subset (027) featured by Section I. Notice that not only the set of transposition levels, but also the succession of these levels (0-7-2-9) is identical to that of the first four levels in the second movement. In other words, set-class (0257) governs the transposition levels at the outset of the second movement, the third movement, and Section III of the fifth movement.

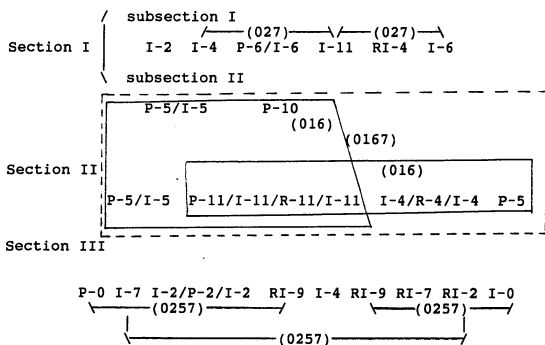


Fig. 6-5. Series transpositions, Movement V

Duration and Rhythm

Since Section I contains thirty-four \downarrow 's and Section II contains thirty-two \downarrow 's and two \square 's ($\square = 2''$), based on the metronomic tempo (MM. $\downarrow = 75$) suggested by Henze, the duration of Sections I and II are 27.2" and 25.6" respectively. Furthermore, the duration of Section III is therefore 127.2" ($3' - 27.2'' - 25.6'' = 127.2''$). As a result, this movement is characterized by formal imbalance. The durational proportions of these three sections are as follows:

$$(1) \text{ Section I : II : III} = 1.55 : 1.45 : 7$$

$$(2) \text{ Section (I+II) : III} = 3 : 7$$

$$(3) \text{ Section I : II} = 1.06 : 1$$

Even though there is no single definitive view of the form of Section III, the following chart, based on the above-mentioned proportional ratios, is one plausible solution.

Section III, subsection			
I	II	III	IV
(11/3-12/28)	(13/1-15/7)	(15/8-16/13)	(16/14-the end)
46"	43"	27"	11"
(1.06 : 1)		(7 : 3)	
89"		38"	
	(7 : 3)		

Fig. 6-6. Suggested playing time of each section, Movement V

The first subsection of Section I features phrase contraction. Notice that the durations of those phrases contained in this subsection are 6 ↓'s, 5 ↓'s, 4 ↓'s, and 4 ↓'s. By contrast, the second subsection contains only one phrase spanning fifteen ↓'s. Therefore, one can create remarkable musical contrast by clearly delineating each phrase in the first subsection as opposed to the long, continuous, and unfolding character of the second subsection. Such a continuous, unfolding manner should be maintained in the first two phrases in Section II as suggested by the dynamic contour (a gradual long-drawn crescendo from "p" to "fff"). Although there are various ways to phrase Section III, one must articulate the difference between the unstemmed notes and stemmed notes in terms of the rhythmic weight as in the third and fourth movement. Because of the constant reiteration of the Bb2 and B6, when these two notes appear alone (as a single note rather than a member of a chord), one could well treat them as punctuations by slightly delaying the entrance of the following notes, so that their already distinctive character could be more emphasized.

Texture

Each section in this movement has a distinctive texture. The sudden break in textural consistency at mm. 8-9 divides Section I into two subsections (mm. 1-7 and 8-13). In fact, Section I presents a large-scale textural recession and then progression; mm. 8-9 is the mid-point of this process. The overall texture of the first subsection is basically homophonic with the melody in the upper voice all the time. The first noticeable textural change in the first subsection occurs at m. 7 where a four-voice homophonic texture suddenly becomes two-voice polyphonic. The number of voices is further reduced to 1 at mm. 8-9; however, the texture immediately progresses again, first reaching a two-voice polyphonic level, then a four-voice homophonic, and finally climbing to a point of maximal six-voice climax at m. 13, the close of Section I.

Unlike Section I, Section II contains no marked textural changes. The texture of this section is polyphonic, and it is greatly enhanced by rhythmic dissimilarity. In Section III, the number of voice fluctuates intensively. Since no interlinear independence can be traced, each note in Section III (except those at 12/13-28) could be treated as an isolated event.

As Table 6-2 shows, the subdivision of Section I is also enhanced by the marked contrast of its DA's. Section II is the only section that features extreme fluctuations of DS ranging from 0.56 to 5.00 in its various phrases. Section II is also characterized by its high DA, in particular its second phrase, which has the average of 8.99 attacks per second. Generally speaking, Section II, the central section, is the peak with respect to DA and DS. Subsequently, both DA and DS drop dramatically in Section III; therefore, the activity of Sections II and III contrasts greatly. The low DA and DS of Section III show that this section is the most discontinuous section and has the thinnest texture.

Table 6-2.--Texture of Movement V

	NA	NS	SL	Duration	DA	DS
subsection 1	62	22	10-0-12	15.2"	4.08	1.45
subsection 2	35	12	6-2- 4	12.0"	2.92	1.00
Section I	97	34	16-2-16	27.2"	3.57	1.25
subsection 1	40	10	7-3-0	10.4"	3.85	0.96
subsection 2	43	24	24-0-0	4.8"	8.99	5.00
subsection 3	26	16	9-0-7	7.6"	3.42	2.11
subsection 4	10	2	1-1-0	2.8"	3.57	0.56
Section II	119	52	41-4-7	25.6"	4.69	2.03
subsection 1	75	33	27-5-1	45.0"	1.67	0.73
subsection 2	61	25	18-6-1	44.0"	1.39	0.57
subsection 3	30	16	12-4-0	27.0"	1.11	0.59
subsection 4	13	11	2-7-2	11.0"	1.18	1.00
Section III	179	85	59-22-4	127.0"	1.41	0.67
TOTAL:	395	171	116-28-2	179.8"		
				MEAN	2.20	0.95

CHAPTER 7
PERFORMANCE ANALYSIS

Introduction




The present study now concludes with a discussion of performance problems inherent in the technical, structural, and expressive demands of the music along with the presentation of possible solutions to those problems. Before preceding to the core of the performance analysis, it is necessary to illustrate the symbols used in this chapter concerning performance techniques. It should be noted that this author employs the grip and technique innovated by Leigh Howard Stevens. The methodology of describing stickings, roll-types and mallet positions is that of Leigh Stevens: stickings are numbered as 1-2-3-4 from left to right, low to high: $\begin{matrix} \overset{rL}{\curvearrowright} \\ \textcircled{1} \\ | \\ 1 \end{matrix} \begin{matrix} \overset{lL}{\curvearrowright} \\ \textcircled{2} \\ | \\ 2 \end{matrix} ; \text{ the horizontal line dividing some of the stickings separates the numbers that refers to the upper and lower parts of the great staff; arrows indicate that the preceding group or individual mallet is to be repeated. Symbols of roll$

types and mallet positions are also borrowed from Stevens's notation system as shown in Table 7-1.¹ Mallets of ten different kinds of hardness are to be employed in the performance, though only three are suggested by the composer. In order to ensure a more comfortable grip and to minimize the time for mallet changing, at 14/1-16/11 in the fourth movement, mallet handles will be replaced by four timbale sticks or four rattan shafts. Mallet-types are labeled in accordance with the model numbers of Stevens's products (Table 7-2).

Table 7-1.--Symbols of roll types and mallet positions

$\} \}$	indicates	double-lateral roll;
$\} \}$	indicates	traditional roll;
$\} \}$	indicates	independent roll;
$\} \}$	indicates	mandolin roll;
+	indicates	dead stroke;
\oplus	indicates	play on the nodes;
\circ	indicates	play on the center or the end of the bar; ²
$\oplus\circ\oplus$	indicates	movement from the nodes to the center and back;
\odot	indicates	halfway to the nodes.

Table 7-2.--Suggested mallet types

Symbols used in this study	Composer's suggestions	Remarks
LS 1	very soft mallets 	chorale type, very soft, bass range
LS 5		chorale type, very soft, general use
SR		soft rubber mallets
LS 10	medium soft mallets 	soft to medium hard
LS 15		medium soft to hard
MR		medium rubber mallets
LS 20	very hard mallets 	medium to very hard
LS 25		hard to extremely hard
LSZ 17		two-tone, very soft and medium hard
LSZ 27		two-tone, very soft and extremely hard
HR		hard rubber mallets
TS		timbale sticks

Three mallet trays--Tray A (left), Tray B (middle), and Tray C (right)--and a mallet bag hung on the marimba (in front of the soloist) are needed to place mallets. In order to avoid mallet congestion on the trays, during the interval between each movement the marimbist should put all of the mallets used in the previous movement in the mallet bag and set up a new mallet arrangement for the next movement. The mallet-type-list indicates mallet-type of each mallet gripped in the hands as shown in Fig. 7-1:

Mallet-type of mallet No.	1	2	3	4
Mallet-type-list:	LS10-LS10-LS10-LS20			

Fig. 7-1. Mallet-type-list

The routine of changing mallets is displayed by symbolic shorthand: "+" indicates "picking up mallets" and "-" indicates "putting down mallets," the integer before the mallet-type symbol indicates number of mallets, the integer after the mallet-type symbol indicates mallet-number, "L" and "R" denote the "left" and "right" sticks in two-mallet playing respectively, and the last capital letter indicates the referred tray. When neither integer nor mallet-type symbol is shown, the mallet-changing operation affects all mallets gripped in the hands. When the oper-

ated mallets will become members of a set (or a pair) of the mallets of the same type, no mallet-number (or L,R in two-mallet playing) will be shown after mallet-type symbol. For example,

- (- A) is expressed as:
put down all mallets on Tray A;
- (+ 3 LS5 1,2,3; C) is expressed as:
pick up three LS5's which will serve as
mallet no. 1, 2, and 3 from Tray C;
- (+ 2 LS15 1,r; A) is expressed as:
from Tray A, pick up two LS5's which will serve
as left and right mallets in two-mallet
playing; and
- (+ 4 LS25, B) is expressed as :
pick up four LS25's from Tray B.

It should be noted that suggestions for roll types, mallets positions, and mallet types are based on this author's analytical comprehension of the piece, his performance decisions and personal taste. The performer may vary these decisions as seems appropriate. Chapter 7 only deals with performance problems; for detailed information regarding phrasing, metric structure, tempo, and sectional duration, readers should consult the rhythmic analyses discussed in previous chapters.

Movement I

Expressive Markings: misteriously, tempo of a funeral march

Henze's Suggested Playing Time: ca. 2'

Analytical Summary:

1. Misprints:

2/10R

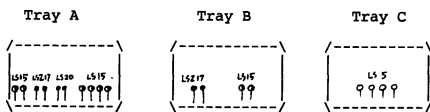
6/14-16

2. Formal Division and Duration

	SECTION	APPROX. DURATION
I	(1/1-3/38)	26"
II	(4/1R-5/2R)	10"
III	(5/3R-7/30)	24"
IV	(7/31-8/32)	17"
V	(9/1-the end)	44"

3. Deduced Metronomic Tempo

\downarrow = ca. 60



(start with LS1-LS10-LS1-LS10)

Fig. 7-2. Suggested choice of mallets
Movement I

Table 7-3.--Flow chart of mallet changing, Movement I

Location	Mallet Changing
1/1-2/7	LS1-LS10-LS1-LS10 (- mallet bag)
2/8-14	Finger-nails (+ 2 LS5; A)
3/1-4	2 mallets: LS5
3/5-15	Finger-nails
3/16-38	2 mallets: LS5 (+ 2 LS20 2,3; A)
4/1-5/4	LS5-LS20-LS20-LS5 (- A) (+ 4 LS15; A)
5/5-7/30	LS15-LS15-LS15-LS15 (- 3 LS15 1,2,3; C) (+ 3 LS5 1,2,3; C)
7/31-8/32	LS5-LS5-LS5-LS15 (- C)
9/1-17	Knuckles (+ 2 LSZ17 1,2; 2 LS15 3,4; B)
9/18-the end	LSZ17-LSZ17-LS15-LS15

Performance Problems

Since this movement is characterized by frequent timbral changes, the primary dilemma which the marimbist will face is mallet changing. Although the entire routine of changing mallets has already been illustrated in Fig. 7-5, there are two spots that need to be singled out and further discussed. First, between 3/4 and 3/5, a 32nd-note rest obviously is not long enough for mallet changing. The only way to solve this problem is to hold the mallets while using finger-nails to perform the following "finger-nail" passage (3/5-15). Since passage at 3/1-4 can be performed with only two mallets, after this passage, immediately holding each mallet like the inside mallet of the traditional grip is therefore the most efficient way to avoid hindering the finger motion (Fig. 7-3). In addition, gripping the mallets in this way can also eliminate the chance of striking the keyboard by mallets in "finger-nail" passage since each mallet has already been pushed away from the keyboard (toward the marimbist's body).

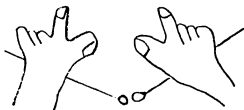


Fig. 7-3. Mallet gripping, after 3/1-4, Movement I

Second, between 9/17 and 9/18, the time for changing mallets is again very inadequate. However, one can arrange the mallets (LSZ17) on Tray B right in front of the Bb3 bar so that the traveling time of the mallets from the tray to the Bb3 bar will be minimized. The reaching for the other pair of mallets (LS15) is less problematic, because while the left hand is executing the Bb3's (9/18-20), the right hand can have plenty of time to bring the mallets from the tray to the A4 and E5 bars. The mallet indication from 9/18 to the end is obscure. It seems that the soft-mallet sign (ϕ) basically governs the notes in the lower stave as well as the Eb4 at 9/21, and the medium-mallet sign (ϕ) governs the notes in the upper stave as well as the A3 at 11/14.

As the analysis in Chapter 2 reveals, Section I is differentiated from the other sections chiefly by its discontinuity. The marimbist, therefore, must pay full attention to the durational values of the rests throughout this section. Moreover, during the period of silence, if no mallet changing is required, one must freeze his body in order to enhance the effect of discontinuity theatrically (visually) rather than only musically (aurally). Such practice will look extremely effective in the first two events (1/1-2/1R, 1/3R-1/4R), since they are primary elements to set up the mysterious atmosphere of this

movement (see also Example 2-8). On the other hand, Sections III and V are characterized by their constant eighth-note beats; therefore, the eighth-note figures of these two sections should be performed as evenly and mechanically as possible, without any fluctuation of tempo.

It should be noted that the dynamic markings in this movement are sometimes misleading. For example, Henze has marked the "finger-nail" passage at 3/5-15 "forte". As every marimbist realizes, however, in terms of loudness, the "forte" performed by finger-nails is in no way equivalent to any other "forte" performed by mallets. In other words, the "forte" in this "finger-nail" passage only serves to instruct the marimbist to perform this passage with great amount of power, rather than to indicate the exact level of loudness. The same reasoning applies to the segments at 3/16-38 and 7/11-30. Superficially, the former segment ends much louder than the latter ("fff" as opposed to "ff"). However, taking into consideration that the latter segment is placed at the center of the movement and the former segment is performed only by very soft mallets, one should treat the latter segment as the dynamic climax of the movement regardless of the fact that the former is marked "fff."

As Example 7-1 shows, sequential stickings play a very important role in executing many runs in this movement. At times, however, alternate stickings will be employed to avoid awkward hand position (e.g., 5/5-23).

5/5, Movement I

ppp

3 2 4 1 3 2 3 2 4 1 2 3 4 1 2 3 4

123

p

8/1, Movement I

sim.

2 4 3 2 1 3 2 3 2 4 1 2 3 4 2 3 2 3 4 3 1 2 4 1 2 4

Example 7-1. Sequential stickings

Movement II

Expressive Marking: very fast

Henze's Suggested Playing Time: ca. 90"

Analytical Summary:

1. Misprints.

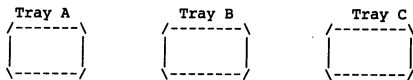
1/2	Ab3 instead of Bb3
5/26	Gb6 instead of G6
6/18	E#5 instead of E5
7/1	G3 instead of F3
7/16-19	32nd-notes
7/24	B4 instead of D5
8/7	F#5 instead of G#5
8/14	F3 instead of A3
8/24	D#3 instead of E#3
The tenth system, lower stave, bass clef	
10/1	F#6 instead of F6
10/5	D#4 instead of F#4

2. Formal Division and Duration

	SECTIONS	APPROX. DURATION
I	(1/1-7/5R)	45"
II	(7/25-the end)	46"

 $\text{♩} = 5", \text{♪} = 4", \text{♫} = 3", \text{♬} = 2", \text{♭} = 1"$

3. Deduced Metronomic Tempo

 $\text{♩} = \text{ca. } 170$


(start with LS25-LS25-LS25-LS25)

Fig. 7-4. Suggested choice of mallets, Movement II

Table 7-4.--Flow chart of mallet changing, Movement II

Location	Mallet Changing
1/1-9/10	LS25-LS25-LS25-LS25 (- B)
9/11-37	hands (+ 4 LS25; B)
10/1-the end	LS25-LS25-LS25-LS25

Performance Problems

Due to the very fast tempo and high level of rhythmic activity, the entire movement should be played with very light strokes. That is to say, one has to move the mallets to and from the bars very rapidly. As the analysis in Chapter 3 reveals, the formal structure of this movement is binary. The first section (1/1-7/5R) is characterized by continuity and the second section (7/25-the end) by discontinuity. The marimbist can actually use his body movement to enhance such musical differentiation. For example, while performing the first section, one should keep his body movement smooth and flowing with the music. Even during the silent period caused by the mini fermata (□) at the end of the third system, instead of freezing his body, the marimbist should slowly bring both hands from the high/medium register (F6/Ab4 at 3/29-30) to the low/medium register (G3/E4 at 4/1-2) so that the continuous body movement can appear to keep the music going. By contrast, the marimbist should freeze his body at every fermata in the second section when no mallet changing is required.

This movement is also characterized by sudden textural changes. Whenever the textural fabric suddenly becomes complex, the marimbist should be able to distinguish the principal voice from the others. Usually the series forms illustrated in Appendix I can offer the

best answer. For example, when segment 2/19-27 suddenly implies polyphony, the marimbist should bring out the top voice which is indeed the continuation of the series. The bottom voice serves as another contrapuntal line made up of free elements and therefore is of secondary importance. The A4 in the inner voice is a registrally retained member and should not be emphasized at all. The marimbist can therefore assign the top line, the principal voice, to the right hand (Mallets 3 and 4) which should be constantly louder than the rest. In the left hand, the secondary voice (except the final F#4) is handled by mallet 1 which should be constantly slightly accentuated (Example 7-2a). Under this circumstance, such imbalance of dynamics in one hand can be achieved by moving the axis of stroke closer to the mallet having the lower dynamic level. The same approach holds for this segment's counterpart at 7/16-24 as well. At this moment, however, the secondary voice is in the top line and the principal voice encompasses the inner and bottom voices. As a result, at 7/16-24, all of the notes (except G#3) covered by the left hand should be louder than those covered by the right (Example 7-2b).



Example 7-2a.
2/19-27, Movement II



Example 7-2b.
7/16-24, Movement II

In the same manner, the marimbist should be aware that the principal voice at 10/16-19 is [F3-D6-C#4-C5] instead of [F#4-D5-G#5-C5]. In fact, articulating the top and bottom notes of consecutive dyads alternately at this spot can point up the structural framework and generate musical excitement.

In the chordal passages at 8/1-12 and 10/1-12, the 3-12 trichordal sonority presented linearly by the sixteenth-note figures should not be obscured by those three-note chords. Therefore, one should sharply differentiate the grace-note nature of those three-note chords from the main-note nature of the sixteenth-note linearities by performing those chords with much lighter strokes.

The rhythmic profile of the first chordal passage (8/1-12) looks very perplexing at the first sight. The main challenge for the marimbist is to speed up and slow down those chords while maintaining the constant sixteenth-note beats in the bottom part. The approach shown in Fig. 7-5 leads to the best solution of this rhythmic problem. Note that in the second chordal passage (10/1-12), the degree of rhythmic fluctuation is much lower. One may therefore interpret it more or less like a single sixteenth-note part ornamented by chordal grace-notes (Fig. 7-6).

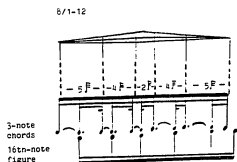


Fig. 7-5. Rhythmic interpretation, 8/1-12, Movement II



Fig. 7-6. Rhythmic interpretation, 10/1-12, Movement II

In the first chordal passage, although the left hand basically employs double-lateral strokes all the time, because of the rhythmic fluctuation and frequent changes of direction of wrist rotation, there exists a technical problem regarding mallet control. One should practice the

left hand alone as shown in Example 7-3 before trying to combine both hands together. Note that the sticking for segment D-D# is 2-1 instead of 1-2 in order to avoid awkward wrist rotation.

double-lateral stroke (left hand only)

1 2 (2 1) 1 2 2 2 1 1 2 1
(or 2 2 1)

Example 7-3. Left hand practice, 8/1-12, Movement II

On the other hand, both hands are involved in the preliminary exercise for the second chordal passage. Due to the rhythmic regularity and the lack of directional change, this passage presents fewer technical problems than the first.

R.H. 3 4
L.H. 2 1

Example 7-4. Preliminary exercise, 10/1-12, Movement II

Movement III

Expressive Marking: Very slowly, extremely quiet, whispering

Henze's Metronomic Mark: \downarrow = ca. 50

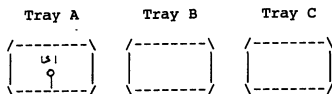
Henze's Suggested Playing Time: ca. 2'

Analytical Summary

1. Misprint
7/4, D5 instead of C5
2. Formal Division and Duration

SECTIONS	APPROX. DURATION
I (1/1-4/22)	85"
II (5/1-6/26)	25"
III (7/1-20)	11"
IV (8/1-22)	5"

\curvearrowright = 5" \circ = 4" \curvearrowleft = 3" \square = 2" \rangle = 1"



(start with LS5-LS5-LS5-LS5)

Fig. 7-7. Suggested choice of mallets, Movement III

Table 7-5.--Flow chart of mallet changing, Movement III

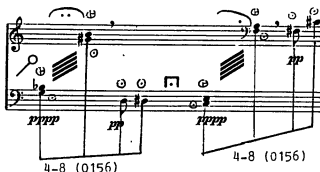
Location	Mallet Changing
1/1-4/22	LS5-LS5-LS5-LS5 (- 3 LS5 2,3,4; B)
5/1-6/15	LS5-∅ - ∅ - ∅ (+ 3 LS5 2,3,4; B)
6/16-7/13	LS5-LS5-LS5-LS5 (- B)
7/14-20	finger-tips (+ 1 LS1 l; A) (+ 1 LS5 r; B)
8/1-the end	2 mallets: LS1, LS5

Performance Problems

Variations in roll speed and roll type should be used throughout this movement to maintain balance between the voices, to generate musical varieties, and to enhance the progression and recession of musical tension. For example, at 1/1, in comparison with the lower <G,Bb> dyad, the upper <G#,B> dyad is presented in a less resonant register; therefore, the roll of the upper <G#,B> should be faster and louder than that of the lower <G,Bb>. The same technique should also be applied to the <A,Bb,D,Eb> at 4/14 and <C,C#,Eb,E> at 6/26. In other words, an independent roll is required to interpret these four-note chords. On the other hand, at 1/4, both <C,E> and <F,A> dyads are presented in the same low resonant register; a double-lateral roll would thus make this chord more effective.

Between 1/1 and 1/6, selecting different playing spots for rolling can ensure harmonic unity. For example, if the bottom notes of each dyad (G3, G#4, C3, and F3) as well as the linearities D3-D#3, and F#3-C#4 are played at the center--the most sonorous spot--of the bars, two 4-8 (0156) sets would therefore be articulated (Example 7-5). Note that other members of set-class 4-8 will indeed appear at 3/19-22 and 4/14.

1/1, Movement III



Example 7-5. 1/1-6, Movement III

In order to rotate both hands more efficiently, under certain circumstances, one has to abandon the normal 1-2-3-4 (low to high) sticking for chord rolling. For example, chords such as $\langle G, G\#, Bb, B \rangle$ at 1/1 and $\langle C, C\#, Eb, E \rangle$ at 6/26 would sound much smoother if 2-1-3-4 (low to high) sticking is employed. Whenever a chord is reiterated within a short time-span such as at 2/12-13 and 4/19-22, one may alter the roll speed, roll type, and playing spots to generate musical variety and to enhance progression or recession of musical tension. For example, at 2/12, one can bring out the $[B3, C4]$ (01) dyad to echo the preceding $[C\#3, D3]$ of the same set-class. The roll at this moment should sound intense. At 2/13, for the sake of musical variety, the same chord can be performed with a double-lateral roll, with decelerated roll speed to match the decrescendo. In addition, instead of B3 and C4, now the $[F3, Ab3]$ (03) dyad can be brought out to prepare for the appearance of the $[G3-E3]$ (03) dyad at 2/14-15.

The notes notated staccato such as <G3,B> at 3/17, <F#,G> at 3/18, and C# at 4/18 should be executed with a firm quasi-dead-stroke. Unstemmed notes should have no rhythmic weight; they should sound light and spontaneous. By contrast, stemmed notes should have rhythmic gravity; they should sound focused and their rhythmic value should be precisely calculated.

The two runs in this movement may entail a few sticking problems. The suggested stickings in Example 7-6 can effectively facilitate the wide leaps at 4/6-8 in addition to minimizing the gap between the accelerated scalar run and the sustained chord at 6/26. By employing the sticking indicated in this example, the left hand is able to remain only over the black-keys and the right hand over the white-keys. Such sticking keeps the hands comfortably separated in this accelerated run.

4/1, Movement III

2 4 3 1 3 2 4 2 1 4 3 1 2

6/16, Movement III

3 4 2 3 4 1 2 3 1 2

Example 7-6. Stickings for 4/1-12 and 6/16-26,
Movement III

The polyphonic implications of the last section (8/1-the end), the coda, need to be enhanced by the use of different mallets in each hand. In addition, the entire upper line, particularly the eighth-note figure, should be played with a relaxed stroke at the center of the bar, while the lower line with a staccato stroke should be played closer to the node.

Movement IV

Expressive Marking: Allegretto (with grace, no rush)

Henze's Suggested Playing Time: ca. 80"

Analytical Summary:

1. Misprints:

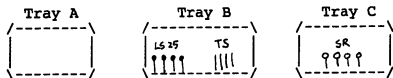
2/12	F3 instead of G3	
3/4	C5 instead of A4	
3/9	G3 instead of A3	
4/12	C3 instead of E3	
13/5-6	bass clef	} lower stave
13/8	treble clef	
13/11	bass clef	

2. Formal Division and Duration

SECTIONS	APPROX. DURATION
I (1/1-7/3)	43"
II (7/4-13/11)	21"
III (14/1R-the end)	15"

3. Deduced Metronomic Tempo

♩ = ca. 110



(start with LS15-LS15-LS15-LS15)

Fig. 7-8. Suggested choice of mallets, Movement IV

Table 7-6.--Flow chart of mallet changing, Movement IV

Location	Mallet Changing
1/1-7/3	LS15-LS15-LS15-LS15 (- A) (+ 4 LS25; B)
7/4-8/12	LS25-LS25-LS25-LS25 (- B) (+ 4 SR; C)
9/1-12/20	SR-SR-SR-SR (- 4 SR; A) (+ 4 LS15; A)
13/1-11	LS15-LS15-LS15-LS15 (- A) (+ 4 TS; B)
14/1-16/11	TS-TS-TS-TS (- 4 TS; B)
16/12	hands

Performance Problems

As the expressive marking "with grace, no rush" indicates, the entire movement must be performed with graceful body movement and rapid, light strokes. In fact, graceful body movement implies a relaxed muscular coordination, which is the key to dealing with the primary technical difficulty in this movement: the [Bb3, B6] dyad with wide registral space. This dyad is very difficult to maneuver because the Bb3 bar and the B6 bar are so far apart that the marimbist can not check their positions simultaneously. One can either develop his eye muscle to check the bar positionings one by one (to check the bars by turning his eyes instead of his head), or visually focus on one bar and "sense" the other. Furthermore, in order to achieve superb accuracy, one must avoid all unnecessary body motion, employ the exact amount of muscular tension necessary to accomplish the task, and employ the same body position and movement all the time so that the distance of traveling of both hands can be memorized.

A set of medium soft mallets which will not produce any contact noise in the extreme upper register is necessary in Section I. In addition, because the extreme upper register is not as resonant as the lower register, while performing the dyads with wide registral space, one should accentuate the top note to achieve dynamic balance. To

play the passage between 9/1-12/1, the mallets should be soft and must be capable of articulating the notes in the very high register and at a very soft dynamic level. A set of soft rubber mallets seems to be able to meet such requirements perfectly.

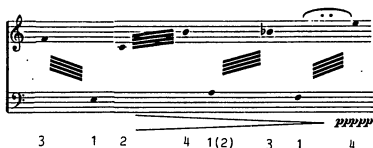
Although Henze indicates mallet changing at 13/1, it should be put into effect as early as 12/11, since the decelerated <G#,A,C,E> 4-19 (0148) set at 12/11-20 is part of the final phrase (12/11-13/11) of Section II. At 14/1, Henze indicates the use of mallet handles. Since the marimbist is holding four mallets at this moment, it is extremely awkward and time consuming to switch each mallet from mallet end to handle. As a result, the marimbist had better put down the mallets he is holding, and pick up a set timbale sticks or rattan shafts to perform the remainder of this movement.

In the first phrasal unit (1/1-1/6R), since members of interval-class 6 are quite prominent in the upper voice (e.g., [F-B-F] at 1/5-7, and [C#-G] at 1/9-10), the marimbist should also anticipate this interval-class in the lower voice at 1/2-4. (Note that the <B,C> and <F,Gb> dyads are separated by interval-class 6.) Therefore, at 1/2-4, do not let the sound of the upper dyads cover that of the lower dyads. However, at the same time, bring out the [A-B-F] linearity of 3-8 (026) in the top voice at 1/4-6 which will be answered by the [A-C#-G] linearity of

the same set-class at 1/8-10.

Henze intentionally employs two vertical 3-12 (048) trichords--<Bb,D,F#> at 2/13 and <G,B,D#> at 2/14--to mark the mid-point of the first subsection (1/1-3/4R) of Section I. The marimbist can actually help delineate such formal subdivision by putting a slight ritardando at 2/11-13 and returning to the old tempo at 2/14. The [Bb3,B6] at 3/13 should be the loudest in the first subsection so that the ending of this subsection can be punctuated clearly. In order to present a sharp contrast to the first subsection, the marimbist should maintain the overall dynamic level of the second and the third subsections between "pppp" and "mf." The "sf" in these two subsections should not be overplayed.

Besides the prominent [Bb2,B6] dyad, much of the pitch elements of this movement are based on set-class (01) and thus infuse into this movement forward momentum and tension. As a result, components of all (01) vertical dyads in this movement should be at equal dynamic level. In addition, the roll at 6/18-7/3 should be played with full intensity. The roll speed should be very fast and without any break when the pitch content is changed. To obtain a smooth roll within this passage, one should utilize the potential of four-mallet playing as shown in Example 7-7.



Example 7-7. Sticking for 6/18-7/3, Movement IV

The use of different articulations within a verticality can help bring up implicit structural similarities at the musical surface. For example, two [C#5, Bb5, D6] appear at 5/11 and 6/4 respectively; if the marimbist accentuates the D6 at 5/11 and C#5 at 6/4, two linear members of 4-21 (0246) will thus be articulated (Example 7-8).



Example 7-8. 5/11-6/4, Movement IV

In the earlier rhythmic analysis in Chapter 5, this author proposed to add a little rhythmic weight to those notes in the upper stave between 9/1-12/10. The following discussion develops this suggestion in more detail. Since the passage 11/9-12/6 is the transposition of the passage 9/1-25 down a semitone, their rhythmic profile should be more or less similar in order to supplement their close structural relationship. It means that the marimbist should apply the same rhythmic interpretation to 11/9-12/6 as he did at 9/1-25. At 12/7-10, the last four notes of this recitativo passage, which constitute a 4-19 (0148) set, should be clearly singled out so that they can serve as an anticipation of the upcoming 4-19 verticality at 12/11.

In Section III (12/1R-the end), the marimbist should be aware of the contact of the sticks with the bars. All four sticks should strike the bars simultaneously; no "flam" (quick alternate sound) should be produced.

Movement V

Expressive Marking: Andante cantabile

Henze's Suggested Playing Time: ca. 3'

Henze's Suggested Metronomic Tempo: \downarrow = ca. 75

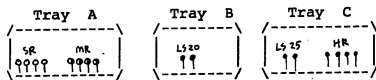
Analytical Summary:

1. Misprints

10L/1-6	treble clef
10L/7-12	bass clef
10L/12	D#3 instead of C#3
11/4	E3 instead of G3
12/16	D3 instead of E3
13/3	G4 instead of A4
13/12	D5 instead of E5
14/23	G4 instead of F4
15/8	G4 instead of A4
15/10	F3 instead of G3
16/6	G5 instead of F5

2. Formal Division and Duration

SECTIONS	APPROX. DURATION
I (1/1R-5/1)	27"
II (5/2R-11L/3R)	26"
III (11/3-the end)	127"



(start with LS10-LS15-LS15-LS15)

Fig. 7-9. Suggested choice of mallets, Movement V

Table 7-7.--Flow chart of mallet changing, Movement V

Location	Mallet Changing
1/1-5/1	LS10-LS15-LS15-LS15 (- 1 LS15 4; B) (+ 1 LS20 4; B) (+ 1 LS20 4; B)
5L2-7U/2	LS10-LS15-LS15-LS20 (- B) (+ 2 HR 3,4; C) (+ 2 LS25 1,2; C)
7U/3-8U/19	LS25-LS25-HR-HR (- C) (+ 2 LS20 3,4; B) (+ 2 LS15 1,2; B)
9U/1-10L/6	LS15-LS15-LS20-LS20 (- B) (+ 4 SR; A)
10L/7-15/7	SR-SR-SR-SR (- A) (+ 4 MR; A)
15/8-16/13	MR-MR-MR-MR (- C) (+ 4 HR; C)
16/14-the end	HR-HR-HR-HR

Performance Problems

Although Henze indicates to use very soft mallets in Section I, this author suggests using much harder mallets (e.g., LS15) in order to project the notes in the upper register at mm. 2-6 and m. 12. As for mallet no. 1, it should be a little softer than the other three, so that the bass voice can be greatly differentiated from the others, particularly at m. 4 and m.10. Due to Henze's free manipulation of textural changes--his sudden adding or obliterating voice/s--the major performance problem in Section I is to trace the direction of each voice. For example, the alto voice suddenly drops out at m. 2.1 and reappears at m. 2.2. Moreover, at m. 3.1, it seems very difficult to decide which voice the septuplet should belong to. Based on the fact that at m. 4, the alto, tenor, and bass all feature wide leaps by sevenths, however, it is logical to conclude that the septuplet at m. 3.1 is in the soprano voice so that its final Gb4 also creates a leap of seventh with the following F5. In the same manner, the E4 in the lower stave should be included in the bass so that the Eb-E creates another leap of seventh in the bass. As a result, the tenor at m. 3.2-3.3 [Ab-D-C#], bass at m. 3.2-3.3 [Eb-E-Bb], and bass at m. 4.1 [Bb-A-Eb] are members of set-class 3-5 (016) (Example 7-9). The marimbist should therefore carefully articulate the con-

nectedness between the Gb4 and F4 by relying on the notated crescendo. Treating the linear segment [B3-D4-C#4-Bb4-G4-Gb4-F5-C6] as a part of a melodic line, he should make sure that the dynamic level of each note is higher than that of the previous one. In addition, the A4 in the alto voice at m. 3.3 should be much softer than the upper F5 and even the preceding G4 and Gb4.

m. 3, Movement V

m. 4, Movement V

Example 7-9. Measures 3.2-3.3 and 4.1, Movement V

At mm. 7 and 8, the number of voices suddenly drops to two and one respectively. Henze does not indicate which voices they are. The two at m. 7 seem to be soprano and tenor based on the similarity of their semitonal link with the preceding notes at m. 6 (Example 7-10). The single line at m. 8 seems to be a continuation of the upper line at m. 7 based on the fact that the G4 serves as a link.

Example 7-10. Measure 7, Movement V

Between mm. 9 and 13, the realization of the identity of voices can confirm and enhance the directedness of each voice. In addition, it can also help articulate the harmonic structure of the music as in m.4. The single melodic line at mm. 8-9 ends on the F#5 instead of the A4 at m. 10.1. The A4 at m. 10.1 is actually the initial note of the alto voice which also contains the following B4, Bb4, D5, and Eb5. This alto line stops abruptly at m. 11 where the melodic line is taken over by the soprano. Note that between m. 11.1 and 12.1, both the soprano and alto voices contain members of 3-5 (016). As for the bass, it starts at m. 10.1, stops at the Ab3, and resumes at the A#4 (m. 11.2). The Bb3-C#4-G3 at m. 12.1 is also part of the bass line. Note that the tenor from mm. 10.2-12.1 and the bass from m. 11.1-12 (excluding the final G3) are the members of the same set-class 5-27 (01358). (See Example 7-11, mm. 10-12 re-notated.)

The image shows a musical score for three staves (Soprano, Alto, Bass) across measures 10, 11, and 12. The score is annotated with set-class labels and circled regions:

- Measure 10:** The Soprano staff has a circled region labeled "3-5 (016)". The Bass staff has a circled region labeled "5-27".
- Measure 11:** The Soprano staff has a circled region labeled "3-5 (016)". The Bass staff has a circled region labeled "5-27".
- Measure 12:** The Soprano staff has a circled region labeled "3-5 (016)". The Bass staff has a circled region labeled "5-27 (01358)".

The annotations indicate that the Soprano and Alto voices in measures 10-12 contain members of the set-class 3-5 (016), while the Bass voice contains members of the set-class 5-27 (01358).

Example 7-11. Measures 10-12, Movement V

The main technical problem in Section I is at m. 7 where the right hand, while executing rhythmic counterpoint (5:3) against the left, should operate smooth single alternating strokes with changing intervals. Under such circumstances, the marimbist should rely on his fingers to generate power and speed for achieving fast interval changes. At the same time, the lower part should be performed only by mallet no. 2, closer to the node, in order to produce timbral contrast and enhance independence of the voices.

In Section II (5L/2-13/11), the task of tracing voices is even harder. This author suggests that the quintuplet and sextuplet at 5U/9-14 should be in the alto voice so that the alto, which starts at 5U/6, and temporarily stops at 5U/14, contains three units of three attacks--[F#-F#-Bb], [E-G-F#], and [D#-C-B]. On the other hand, the soprano voice, which starts at 5U/2, contains two units of two attacks from 5U/6 to 6U/1. From 6U/2, where the alto resumes on the E4, onwards, soprano and alto share each group of two attacks in the top part, with the former taking the first note and the latter taking the last. The exclusive use of a much harder mallet for the soprano is highly recommended because it can enhance the independence of the voices at the outset of this section and clarify the identity of the voices particularly at

5U/6-7U/2.

The same approach of selecting mallets holds for the next phrase (7U/3-8U/19). The materials in the upper stave, if played by hard rubber mallets, will be sharply differentiated from those in the lower stave played by hard yarn mallets. Imagine how confusing the lines would sound particularly at 8L/2-4 if all four voices are played by mallets of the same hardness. The main technical difficulty in this passage is the fast double vertical stroke. In order to obtain the maximum speed, the marimbist should keep his fingers relaxed during the strokes, make sure that the mallets bounce back to the position at which they start, and never employ any arm motion in the stroke. The mathematical analysis of the rhythmic counterpoints of this passage, in addition to the one at 5L/2-7, is illustrated in Fig. 7-10. In this and the following phrases, there is a recessive decline in linear independence in approach to Section III, and the identity of the voices is difficult to define.

The use of the rubber mallets can produce dry, crisp tone and thus can enhance the isolated nature of the notes in Section III. As the rhythmic analysis in Chapter 6 reveals, the marimbist should adjust each subsection of Section III to approximately 46", 43", 27", and 11" respectively. Each note-without-stem should not have any rhythmic weight. In order to emphasize the isolated

nature of each note, the body movement should not ensure smooth trajectory; instead, it should be slightly interrupted between each note.

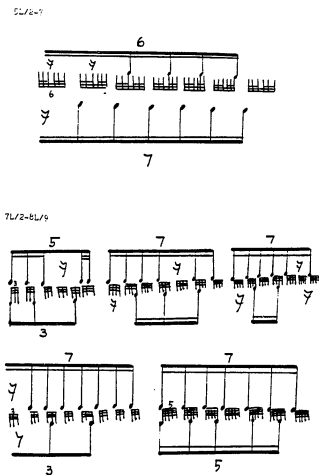


Fig. 7-10. Mathematical analysis of the rhythms in 5L/2-7 and 7L/2-8L/9, Movement V

The Relations of Analysis to Performance

The present analysis reveals many structurally important elements upon which performance decisions can be based:

- (1) the pitch organization, formal structure, and sectional proportions of each movement, as well as the inferred metronomic tempo based upon Henze's suggested playing time;
- (2) the anomalous status of the first movement related only obliquely to the twelve-tone concerns of the rest of the piece, and the background structure of this movement;
- (3) phrasing based upon pitch structure and Henze's use of rests despite the abandonment of barlines;
- (4) the treatments of unstemmed notes and free rhythmic passages;
- (5) the thirty-one misprints;
- (6) this author's interpretive decisions.

It should be noted that not all of the analytical results can be expressed overtly. Meanwhile, emphasis on the deeper structure may overstate its occurrence with regard to the context and sometimes impair the foreground continuity. The symmetrical rhythmic structure illustrated in Fig. 2-9, for example, should not be further elucidated or emphasized in the performance. It is a self-

evident structure and does not require deliberate projection. Any musical intervention may endanger the dynamic balance and rhythmic flow of this passage.

The possibilities of interpreting a piece are numerous because there is no unique concept of the structure in any given composition; in addition, there may be diverse reasonable realizations of any analytical result. As a consequence, the present study by no means points to a unique, paramount direction of interpretation. The ultimate goals of this study are to present a rich detail of this piece's deeper structure, and to shed light on some specific instances of interpretive latitude.

NOTES

1. Leigh Howard Stevens, "Musical Shorthand--A Personal Notational System," Percussive Notes 22, no. 4 (1984): 25-27.

2. "O," Henze's symbol for "playing with hands," is also Stevens's symbol for "playing on the center of the bar." Therefore, in the present study, Stevens's "O" is replaced by "0" in order to avoid confusion.

APPENDIX I

SERIES FORMS AND SERIES MEMBERS

(FROM MOVEMENT II TO MOVEMENT V)

2. very fast

3 4 11 12 10 12 1 2 3 7 8 9 10 11 12

11 12 10 11 12 2 3 4 5 6 7 8 9 10 11 12

12 2 3 4 5 6 10 11 12 2 3 4 5 6 10 11 12

12 3 4 6 8 9 10 11 12 2 3 4 5 6 7 8 9

10 11 12 2 3 5 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12

10 11 12 2 3 5 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12

RI-0 RI-0 RI-0 RI-1 I-7:H1 I-7:H2 I-1 (seg.)

(In Appendix I, order numbers are expressed as 1-12 instead of 0-e, and "x" = missing note.)

APPENDIX I (continued)

9

[I-7] 6 7 8 9 10 [R-7]
 p → pp → ppp
 rall. (non-serial)
 [R-1-7]
 [R-2] [P-9] very fast x x [I-1]
 pppp p
 [I-11]
 [R-8] ff [R-3] [I-1] pppp
 pp pppp
 ca. 50"

APPENDIX I (continued)

3. very slowly, extremely quiet, whispering (J ca. 80)

L-5(B) **R-5(B)**
F-2(B) **L-2**
R-7
L-0 **R-0** (it can be interpreted as T1(R-0))

(r.t. = registral retention)

APPENDIX I (continued)

The musical score consists of four systems, each with a piano (P) and bass (B) staff. The notation includes notes, rests, and dynamic markings such as *ppp*, *pp*, and *p*. Fingerings are indicated by numbers 1-5. Circled sections highlight specific musical phrases or techniques.

System 1: Starts with a circled **P-6** in the piano staff and a circled **I-6** in the bass staff. Dynamics include *ppp* and *pp*. Fingerings are shown for notes 6, 7, 8, 9, 10, 11, 12, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12.

System 2: Features circled annotations **R-3:H2** and **I-10 (seg.)** in the piano staff, and **R-3:H1** in the bass staff. Dynamics include *ppp*. Fingerings include 7, 8, 9, 10, 11, 12, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12.

System 3: Contains circled annotations **P-10:H1 (seg.)**, **R-5 (seg.)**, **P-2:H1 (seg.)**, and **I-2 (seg.)** in the piano staff, and **P-10:H1 (seg.)** in the bass staff. Dynamics include *ppp*. Fingerings include 3, 4, 5, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12.

System 4: Includes circled annotations **P-9:H2** and **P-9:H1** in the piano staff, and **P-9:H2** in the bass staff. Dynamics include *p*. Fingerings include 11, 12, 7, 10, 8, 9, 3, 2, 1, 7, 9, 10, 11, 12, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12.

The page is numbered **ca 27** at the bottom right.

APPENDIX I (continued)

4. allegretto (with grace, no rush)

Musical score for "4. allegretto (with grace, no rush)". The score is written for two staves (treble and bass clef) and includes various performance markings and technical instructions.

Staff 1: Starts with a treble clef and a key signature of one sharp (F#). The piece begins with a piano (*p*) dynamic. Fingerings are indicated with numbers 1-5. A box labeled "R-6" is above the first measure, and "P-10" is above the second measure. The first system ends with a *mf* dynamic.

Staff 2: Continues the piece. A box labeled "L-10" is above the first measure. Dynamics range from *p* to *f*. A box labeled "R-1" is above the fifth measure, and "L-1" is above the eighth measure. The system ends with a *f* dynamic.

Staff 3: Continues the piece. Dynamics range from *mf* to *pp*. A box labeled "P-9" is above the fifth measure. The system ends with a *pp* dynamic.

Staff 4: Continues the piece. Dynamics range from *p* to *ppp*. A box labeled "L-0" is above the fifth measure. The system ends with a *ppp* dynamic.

Additional markings include:

- Rehearsal marks: (7), (11)
- Tempo/Character: *ppp* (pianissimo)
- Performance instructions: "with grace, no rush"

APPENDIX I (continued)

P-0 (seg.) I-3 13

(1) (in the first edition)

III-R-4: (9t26173458e0)

IIIR-9: (237e5089t145) *very quickly (molto rubato)*

IIIR-9 (seg.) I-5

I-10

Detailed description of the musical score: The score consists of four systems of music. The first system, labeled 'P-0 (seg.)' and 'I-3', shows a melodic line with notes numbered 8, 10, 11, 9, 10, 11, 2, and 3, and a bass line with notes 11, 5, 4, 3, 2, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11. The second system, labeled 'III-R-4: (9t26173458e0)', has a treble clef with notes 7, 8, 9, 6, 4, 11, 9, 11, 2, 3, 4, 9, and a bass line with notes 12, 5, 6, 7, 8. The third system, labeled 'IIIR-9: (237e5089t145) very quickly (molto rubato)', features a treble clef with notes 10, 12, 11, 10, 12, 3, 4, 5, 6, 7, 8, 9, 10, and a bass line with notes 1, 0, 10, 12, 3, 10. The fourth system, labeled 'IIIR-9 (seg.)' and 'I-5', has a treble clef with notes 11, 2, 10, 6, 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, and a bass line with notes 4, 5. The page number '13' is in the top right, and 'I-10' is in a box at the bottom right.

APPENDIX I (continued)

14

pp

СОННИН
СРЕД

I-10

I-4:II1

I-3

II-9

II-10:II2

II-3

I-3

I-2:II1

I-3

b3
Cb

b3
Cb

APPENDIX I (continued)

R-6

15

5 7 11 12

6 3 2 10 11 9

tempo I (allegretto)

P-1 (seg.) P-10 (seg.) I-10:H1 P-10 (seg.)

3 2 11 11 3 6 5 6 10

repetition of I-10:H1

ca. 80°

APPENDIX I (continued)

5. andante cantabile (♩ ca. 78)

P-6 (seg.) P-6

[I-2(B)] [I-4] [I-6] [I-11] [RI-4] [I-6] [P-5] [I-5 (seg.)] [P-10]

p *fff* *mf* *f*

APPENDIX I (continued)

Musical score for Appendix I (continued), page 17. The score is written for guitar and includes four systems of music. Each system consists of a treble clef staff and a bass clef staff. The key signature is one flat (B-flat). The score is marked with various dynamics and articulations, including accents (>), accents forte (f), accents fortissimo (fff), and accents fortissimo con sordina (fff sord.).

The score is divided into sections by brackets and labeled with letters and numbers:

- P-5**: First system, measures 1-5.
- I-5**: Second system, measures 6-10.
- P-11**: Third system, measures 11-15.
- I-11**: Fourth system, measures 16-20.
- I-11**: Fifth system, measures 21-25.
- I-1**: Sixth system, measures 26-30.
- P-1**: Seventh system, measures 31-35.

The score includes various musical notations such as slurs, ties, and fingering numbers (1-5). The page number 17 is located in the top right corner.

APPENDIX I (continued)

18

19

20

21

gracefully, smoothly, swiftly, without rushing

22

APPENDIX I (continued)

19

as before - than gradually more agitated

accel

greatly agitated

wild

CG. 31

Young & Rubicam's Edition, Mass. 4738

APPENDIX II
MATRIX OF SERIES FORMS

	I-0	I-3	I-2	I-e	I-8	I-7	I-6	I-t	I-4	I-9	I-5	I-1
P-0	5	8	7	4	1	0	e	3	9	2	t	6
P-9	2	5	4	1	t	9	8	0	6	e	7	3
P-t	3	6	5	2	e	t	9	1	7	0	8	4
P-1	6	9	8	5	2	1	0	4	t	3	e	7
P-4	9	0	e	8	5	4	3	7	1	6	2	t
P-5	t	1	0	9	6	5	4	8	2	7	3	e
P-6	e	2	1	t	7	6	5	9	3	8	4	0
P-2	7	t	9	6	3	2	1	5	e	4	0	8
P-8	1	4	3	0	9	8	7	e	5	t	6	2
P-3	8	e	t	7	4	3	2	6	0	5	1	9
P-7	0	3	2	e	8	7	6	t	4	9	5	1
P-e	4	7	6	3	0	e	t	2	8	1	9	5

APPENDIX III

LETTER FROM HENZE

HANS WERNER HENZE
 <KORRESPONDENZADRESSE:
 -ELEN GROS
 HEDISACH-STRASSE 58
 8032 ZURICH TEL. 01 55 27 24

Mr. Yiu-kuong Chung
 President Chinese Percussion
 Development Centre
 543 East 24th Street
 Brooklyn, NY 11210

25/9/90

Dear Mr. Chung,

thank you very much for your letter of August 13 and for the care you took at looking at my "5 Scenes". Here are my answers to your questions:

- 1) I never met Miss Takahashi personally, consequently she did not show me any technical things. I did not hear her first performance.
- 2) I composed it in December 1977 in Stuttgart (West Germany) during a weekend, while snow was falling constantly. I took various walks in the snow. The piece has some personal references to Japan, especially to the mountainous area of Niigata (called the Snow Country).
- 3) I have forgotten.
- 4) Up to the player.
- 5) No, except: try to make each piece sound entirely different from the others. Make long enough brakes after each piece. There are 5 different moods and atmospheres.
- 6) I checked the manuscript myself and found that you were 99 % right: my compliments and thanks.

Best wishes for your dissertation and good luck with future (and now entirely correct) performances of my little piece.

Yours sincerely,



Hans Werner Henze

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