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978-0-521-10692-4 - Arnold Schoenberg: Notes, Sets, Forms  
Silvina Milstein  
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In this thought-provoking study, Silvina Milstein proposes a reconstruction of Schoenberg's conception of compositional process in his twelve-tone works, which challenges the prevalent view that this music is to be appropriately understood exclusively in terms of the new method.

Her claim that in Schoenberg we encounter hierarchical pitch relations operating in a twelve-tone context is supported by in-depth musical analysis and the commentary on the sketch material, which shows tonal considerations to be a primary concern and even an important criterion in the composition of the set itself.

*Arnold Schoenberg: notes, sets, forms* addresses the conflicting interaction between theory and practice in Schoenberg exploring the extent to which the techniques of developing variation, the notion of formal prototypes, and the use of balancing phrase-construction, as described in his didactic writings, represent the elements of his actual compositional thought.

The core of the book consists of detailed analytical studies; yet its heavy reliance on factors outside the score (such as the sketch material, the composer's theoretical and philosophical writings, his musical development, and cultural milieu) places this work beyond the boundaries of textual analysis into the field of the history of musical ideas.

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GENERAL EDITOR: ARNOLD WHITTALL

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This series offers a wide perspective on music and musical life in the twentieth century.

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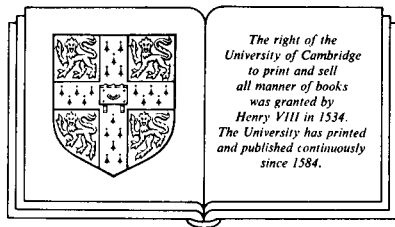
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# *Arnold Schoenberg: notes, sets, forms*

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SILVINA MILSTEIN



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- Plate 3 Wind Quintet, Op. 26: MS 1110
- Plate 4 Wind Quintet, Op. 26: MS 1112b
- Plate 5 Septet, Op. 29 in *Skizzenbuch V*: MS 576
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- Plate 19 String Trio, Op. 45: MS 1055
- Plate 20 String Trio, Op. 45: MS 1057

In order to provide the fullest information, the MSS listed above are presented in their entirety, untrimmed.



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## Preface

At the very beginning, when I used for the first time rows of twelve-tones in the fall of 1921, I foresaw the confusion which would arise in case I were to make publicly known this method. Consequently I was silent for nearly two years. And when I gathered about twenty of my pupils together to explain to them the new method in 1923, I did it because I was afraid to be taken as an imitator of Hauer, who, at this time, published his *Vom Melos zur Pauke*.<sup>1</sup> I could show that I was on the way to this method for more than ten years and could prove so by examples of works written during this time. But, at the same time, already I did not call it a 'system' but a 'method', and considered it as a tool of composition but not as a theory. And, therefore I concluded my explanation with the sentence: 'You use the row and compose as you had done it previously.' That means: 'Use the same kind of form or expression, the same themes, melodies, sounds, rhythms as you used before.'<sup>2</sup>

More than half a century after Schoenberg enthusiastically proclaimed that his method would 'assure the supremacy of German music for the next hundred years',<sup>3</sup> his twelve-tone works remain as exhilarating but almost as little understood as in his own time. Even putting aside the intrinsic difficulties of the extreme conciseness of Schoenberg's mode of expression, evident even in his early tonal works,<sup>4</sup> the precise nature and scope of twelve-tone thought in his compositions remain largely unexplained. For although the particular twelve-tone set and the operations for its systematic transformations are readily available to the analyst, the syntactical relevance and the precise levels at which the set determines the composition are not explicit and often require explanation outside twelve-tone theory itself.

1 'Schoenberg most likely means *Vom Wesen des Musikalischen*, which was published in 1923, rather than *Vom Melos zur Pauke*, which appeared in 1925 – and was dedicated to Schoenberg.' Editor's note, Schoenberg, *Style and Idea*, p. 523

2 Schoenberg, 'Schoenberg's Tone Rows', in *Style and Idea*, p. 213

3 Quoted by Rufer, in *The Works of Arnold Schoenberg: A Catalogue of His Compositions, Writings and Paintings*, p. 48

4 See Berg, 'Why Is Schoenberg's Music So Difficult to Understand?'

### Preface

A glance at the various efforts to deal even just with the genesis of the method shows the complexity of the subject. Existing accounts range from Reich's historical approach,<sup>5</sup> and Goehr's inquiry into its philosophical motivation,<sup>6</sup> to Babbitt's textual analysis, which is geared towards describing the self-referential elements in Schoenberg's atonal works and their relation to the twelve-tone idea.<sup>7</sup>

On the strictly musical side, the problematic nature of the relation between the systematic aspects of the twelve-tone method and the particular way in which Schoenberg achieved musical continuity has been the subject of extensive controversy. Initially the discussion of these compositions was restricted to the identification of set forms, and to the enumeration of their formal analogies with traditional models, which were regarded as self-evident proof of the artistic worth of the music.<sup>8</sup> But since the late forties the systematic aspects of these compositions have been generalized in a series of articles by Babbitt and other American theoreticians.<sup>9</sup> Babbitt abstracted constructional principles latent in Schoenberg's music, and proposed new extensions to them, which inspired a generation of American analysts and composers. His writings on the twelve-tone method provided the theoretical basis for dealing with its constructional aspects. But perhaps more fundamentally they constitute the basis for a theory of the twelve-tone system which American composers have been exploring 'since Schoenberg'. Babbitt's comments on 'Composition with Twelve Tones (1)' illustrate the abyss separating the post-War generation from Schoenberg:

On the basis of Schoenberg's preoccupation with questions of historical derivation, and his insistence on negative rather than positive aspects of the system, one is obliged to conclude that the system's demonstrable consistency is an astounding fortuity, and that Schoenberg, like many other great innovators, was not, at least at this point, entirely aware of the implications of his own discovery. This is, in no sense, to minimize his achievement; on the contrary, it makes the achievement appear all the more remarkable.<sup>10</sup>

It is a truism that in his music Schoenberg integrated traditional principles of musical discourse with the constructional potential of the method, but there

5 Reich, *Schoenberg: A Critical Biography*, pp. 130–1. See also Smith, *Schoenberg and His Circle: A Viennese Portrait*, pp. 173–219.

6 See Goehr, 'The Idea behind the Music: Schoenberg and Karl Kraus'.

7 See Babbitt's analysis of Op. 23/III in 'Since Schoenberg', pp. 3–7.

8 See Rufer, *Composition with Twelve Notes Related to One Another*, and Leibowitz, *Schoenberg and his School*. For a critique of Leibowitz's approach see Babbitt's review of *Schoenberg et son école* and *Qu'est ce que la musique de douze sons?*, p. 58.

9 See in particular: Babbitt, 'Some Aspects of Twelve-Tone Composition', 'Twelve-Tone Invariants as Compositional Determinants', and 'Set Structure as a Compositional Determinant'; Lewin, 'A Theory of Segmental Association in Twelve-Tone Music', 'A Study of Hexachordal Levels in Schoenberg's Violin Fantasy', and 'Inversional Balance as an Organizing Force in Schoenberg's Music and Thought'; Rochberg, 'The Harmonic Tendency of the Hexachord'; and Perle, *Serial Composition and Atonality*.

10 Babbitt, review of *Quatrième Cahier (n.d.): Le Système dodécaphonique*, p. 266

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are conflicting views as to the nature and extent of such integration. Boulez and Perle maintain in different ways that archaic tonal idioms and twelve-tone procedures stand in a capricious relationship. Yet Schoenberg's practice has been justified from two radically different angles. On one hand, Rufer and Leibowitz consider the twelve-tone method itself as a vehicle of historical continuity. Since their analyses do not explore the relationship between detail and the whole, they fail to expose the constructional scope of the twelve-tone method in Schoenberg's conception. On the other hand, Hyde claims that the generative force of detail in Schoenberg relies solely on the twelve-tone method itself. Since Hyde regards thematic and formal elements exclusively as vehicles for twelve-tone relations, her work constitutes more an account of coherence between music and a generating set than an explanation of musical thought.<sup>11</sup>

The eighties have witnessed an impressive development of research on the systematic aspects of Schoenberg's music.<sup>12</sup> While occasionally displaying genuine historico-analytical concerns, this work generally exhibits a marked pre-occupation with matters of mainly theoretical interest. Schoenberg's music has proven an inexhaustible well of compositional procedures, which have been generalized, formalized, and turned into the core of the corpus of twelve-tone theory. A survey of this literature reveals a wide spectrum of theoretical preoccupations ranging from the interpretation of sets in multiple dimensions<sup>13</sup> and isomorphic partitioning,<sup>14</sup> to the function of recurring pitch-class collections for establishing long-range connections,<sup>15</sup> and the comparison of twelve-tone with tonal large-scale formal strategies.<sup>16</sup> But common to the new generation of American twelve-tone scholars is the conviction that behind the immediate fact that

Schoenberg's twelve-tone compositions display surface features that strikingly invoke large-scale tonal forms

lies a much deeper truth:

despite surface similarities to tonal idioms, Schoenberg's twelve-tone music represents a distinctly different form of musical life.<sup>17</sup>

Much of the recent American research deals with the compositions discussed in this book and often touches on matters obviously related to my task. Nevertheless I have chosen not to deal directly with each of these studies one by

11 See in particular: Hyde, *Schoenberg's Twelve-Tone Harmony: The Suite Op. 29 and the Compositional Sketches*.

12 See the bibliography in Mead's 'The State of Research in Twelve-Tone Music', which provides a comprehensive survey of recent American writings on the subject.

13 Peles, 'Interpretations of Sets in Multiple Dimensions: Notes on the Second Movement of Arnold Schoenberg's String Quartet no. 3', pp. 303–52

14 Haimo and Johnson, 'Isomorphic Partitioning and Schoenberg's Fourth String Quartet', pp. 47–72

15 Mead, 'Large-Scale Strategy in Arnold Schoenberg's Twelve-Tone Music' and "'Tonal" Forms in Arnold Schoenberg's Twelve-Tone Music'

16 Mead, "'Tonal" forms in Arnold Schoenberg's Twelve-Tone Music'

17 *Ibid.*, p. 67

*Preface*

one; my discussion is addressed almost exclusively to the ideas of Babbitt, which seems pertinent given their seminal position in the development of twelve-tone theory.

Schoenberg's dismissive statement that 'you use the row and compose as you have done it previously'<sup>18</sup> is at least partly responsible for the idea that set-theoretical analysis is irrelevant to the appreciation of his music. Although Schoenberg discouraged 'note-counting', the distinct mark left by the twelve-tone method on the music suggests that we are not dealing with a mere pre-compositional prop but with a powerful 'means to fortify the [musical] logic'.<sup>19</sup>

Central to Schoenberg's preoccupation with matters of musical logic is the question of 'comprehensibility'. This question refers to the relationship between compositional idea and listener's response, the subject addressed by Berg in 'Why is Schoenberg's music so difficult to understand?' I shall deal with this area only indirectly when commenting on the motivations behind Schoenberg's conception of the twelve-tone method. A critical assessment of matters of comprehensibility would probably question the perceptibility of many aspects of Schoenberg's practice: whether it is possible to comprehend aurally large-scale tonal relationships in chromatically saturated music, or to perceive complex principles of twelve-tone association. These considerations are concerned with psychology, and therefore lie beyond the scope of my enquiry, which aims at explaining the genesis of the music.<sup>20</sup> Successful reconstruction of musical structure involves complex and multifarious paths between real-time auditory experience and analysis. As an attempt to characterize the lines of thought – the type of musical logic and syntax – manifested in the compositions, this book may ultimately contribute to developing sympathetic modes of listening to Schoenberg's dodecaphonic works.

This study does not purport to be an account of either my own phenomenological experience, or that of an idealized listener; and though primarily based on standard twelve-tone analytical procedures, its heavy reliance on factors outside the score itself – such as the composer's own statements, his musical development and cultural milieu – extends its scope beyond the boundaries of textual analysis. My aim is to reappraise the extent and nature of the integration of traditional principles of musical discourse and twelve-tone principles of association in Schoenberg. I have also attempted to establish whether the categories described by Schoenberg in his philosophical, theoretical, and didac-

18 Schoenberg, 'Schoenberg's Tone Rows', in *Style and Idea*, p. 213

19 The full passage from 'Schoenberg's Tone Rows', p. 214, reads:

Although I have warned my friends and pupils to consider this as a change in compositional regards, and although I gave them the advice to consider it only as a means to fortify the logic, they started counting the tones and finding out the methods with which I used the rows.

20 Recent studies on the perception of twelve-tone music include Krumhansl, Sandell, and Sergeant, 'The Perception of Tone Hierarchies and Mirror Forms in Twelve-Tone Serial Music', and Lerdahl, 'Cognitive Constraints on Compositional Systems'.

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tic writings apply to his twelve-tone music. An important part of this study has involved the examination of sketch material, which has proven a fascinating route into Schoenberg's own understanding of the music. In short, this book proposes a hypothetical reconstruction of Schoenberg's conception of compositional process. It does not belong, at least in the first instance, to the debate on either the 'purity' or perceptibility of twelve-tone structures in Schoenberg; it belongs to the field of the history of musical ideas.

My interest in Schoenberg's music and ideas originated during my undergraduate studies with Stephen Arnold. Early versions of the manuscript were improved by suggestions from Oliver Neighbour, Julian Rushton, Hugh Wood, and an anonymous reviewer. I am particularly indebted to David Lambourn and Neil Boynton for their comments on sections of this book. Remaining errors are, of course, entirely my responsibility.

My thanks are due to both Jesus College and King's College, Cambridge, for their financial support and special intellectual environment.

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## *Symbols and conventions*

The integers 0 to 11 are used to indicate pitch-classes as well as the order number of an element within a set.

Order numbers are always in italics; e.g.: *0* signifies order number 0 (i.e. the first element of a set), and *3* signifies order number 3 (i.e. the fourth element of a set).

The following pairing between pitch-class numbers and pitch-class names was adopted: 0=C, 1=C#, 2=D. . .and 11=B. Thus,

- $P_0$  the prime form beginning on C
- $I_0$  the inversion beginning on C
- $R_0$  the retrograde ending on C
- $RI_0$  the retrograde inversion ending on C

Therefore,  $P_0(3-5)$  symbolizes the segment of  $P_0$  starting with the pitch-class with order number 3 and ending with the pitch-class with order number 5.

Pitch-levels are indicated in relation to the C two octaves below middle C; e.g.:

- $C^0$  = the C two octaves below middle C
- $C^1$  = the C one octave below middle C
- $C^2$  = middle C
- . . .
- $C^3$  = the C three octaves above middle C
- $C^{-1}$  = the C three octaves below middle C

Thus,  $G^2$  symbolizes the G a perfect fifth above middle C.

A succession of arabic numerals separated by a colon indicates step progression in terms of an implicit diatonic scale; e.g., 5:1 denotes linear progression from the fifth to the first degree.

A succession of roman numerals in italics indicates in some instances bass-line progression and in others large-scale formal relation in terms of an implicit diatonic scale.

*Symbols and conventions*

Bar numbers are indicated by 'b.'. When reference is made to an event which does not coincide with the beginning of the bar a stroke followed by a roman numeral indicates the beat where it occurs; e.g., b. 3/ii = second beat of bar three.

'Trichord' refers to any collection of three different pitch-classes, while 'triad' specifically refers to the common three-note chords of the tonal system, i.e. major, minor, diminished, and augmented triads.

Pitch-class sets are said to be 'equivalent' when their normal order forms reduce to the same prime form by transposition, or inversion followed by transposition. This study adopts Forte's method for deciding on the best normal order of sets and his list of prime forms and interval-vectors.<sup>1</sup>

I refer to 'interval-class' when the distinction between complementary intervals is irrelevant, and refer to 'interval' when referring to a specific interval.<sup>2</sup>

'Interval' refers to the absolute (positive) distance in semitones between two pitch-classes.

In the graphs dealing with pitch hierarchies, which should not be confused with voice-leading graphs, the following conventions have been adopted (unless otherwise specified):

- open and beamed notes: pitch-level representing a principal pitch-class centre and the pitch-class a perfect fifth apart
- darkened notes: pitch-level representing a subsidiary pitch-class centre and the pitch-class a perfect fifth apart, and pitch-level functioning as a leading-note
- darkened and beamed notes: pitch-level representing a subsidiary pitch-class centre and the pitch-class a perfect fifth apart which are locally prominent
- slurs: fifth support (i.e. 5:1)
- ↓ : lower leading-note relation
- ~ : upper leading-note, often as an appoggiatura

The following books by Schoenberg are referred to by their shorter or original titles:

- Theory of Harmony/Harmonielehre*
- Fundamentals of Musical Composition/Fundamentals*
- Structural Functions of Harmony/Structural Functions*

Full publication details of books and articles quoted in footnotes can be found in the bibliography (pp. 205–10).

<sup>1</sup> See Forte, *The Structure of Atonal Music*.

<sup>2</sup> For a definition of 'interval class' and 'intervallic vector', see *ibid.*, p. 210.



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## *Editorial method for the presentation of sketch material*

In most instances, I have chosen to present the sketch material in diagrammatic transcription. In order to show the different layers in the development of the material, the transcriptions often combine on a single sheet extracts from different sketch sheets while trying to convey the original layout of the autograph as much as possible. Photographs of the majority of autographs discussed are included for reference (Plates 1–20, between pp. 184 and 205). The Arnold Schoenberg Institute reference number appears on the upper left corner of the transcriptions and autographs preceded by ‘MS’. Editorial additions and comments are indicated by brackets, i.e. [ ]. Deletions in the autograph are indicated in the transcription by a double stroke over the originally crossed-out area.

In the sketches for the Septet, Schoenberg indicated set forms with the following abbreviations: *T*: prime, *TK*: retrograde, *U*: inversion, *UK*: retrograded inversion. Transposition levels were identified by the interval formed between the pitch-classes with order number 0 of the untransposed prime and the other set form (retrograded forms are regarded as starting on the pitch-class with order number 11). Schoenberg’s transposition figures refer to the generic size (e.g., +3: major third, and 5: perfect fifth) as opposed to the distance by semitones. Schoenberg indicated transpositions in two different ways:

when the interval of transposition is to be added, a figure follows immediately the set form either at the same level or above, or is placed over an oblique stroke (e.g. T5K: T<sup>5</sup>K: T<sup>5</sup>/K: retrograde ending a fifth above the prime);

when the interval is to be subtracted, it is in some cases written as a subscript and in others placed under an oblique stroke (e.g. U<sub>-7</sub>: U/-<sub>7</sub>: inversion starting a minor seventh below the prime)