

A SURVEY OF THE PIANO SONATAS OF PIERRE BOULEZ

by

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MARK WILLIAM WAIT

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A MASTER'S REPORT

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requirements for the degree

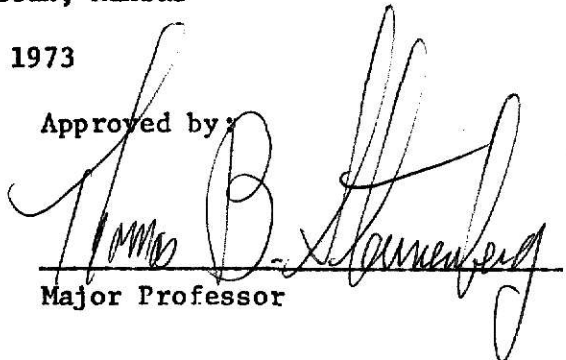
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## CHAPTER I

### THE EDUCATION OF PIERRE BOULEZ, 1944 - 1948

The piano sonatas of Pierre Boulez were composed between 1946 and 1957. It was during that decade that Boulez became, before the age of 25, the undisputed leader of the European avant-garde. Among traditional music circles, performances of his compositions occasioned both praise and derision, and his essays were hailed by young composers as manifestos of the New Music and its techniques. He was undoubtedly Europe's most controversial new composer, and his various styles influenced others throughout the Continent.

The decade following World War II also witnessed transformations of Boulez's philosophies and techniques--changes apparent in the three sonatas. Prior to the discussions of the individual works, therefore, it will be helpful to review certain facts of Boulez's life and education which pertain to his development as a composer. Figuring prominently in his development are the influences of Olivier Messiaen, Arnold Schoenberg, and Anton Webern.

In October, 1944, Boulez entered the Paris Conservatoire as a student of Olivier Messiaen. In the context of French music at the time, Messiaen was an outsider. He was the only notable composer then experimenting with Oriental and Hindu rhythms and exotic instruments; the combination of these factors and his mysticism (e.g., *Vingt Regards sur*

l'Enfant-Jesus, Quartet for the End of Time) made his style unique.

It should be noted that this style was not warmly regarded by his colleagues, and his position at the Conservatoire allowed him to teach only harmony, not composition.<sup>1</sup>

Messiaen's class attracted promising students, among them Karlheinz Stockhausen and Yvonne Loriod, Messiaen's future wife and noted interpreter of his music. It was this class that Boulez joined. He was an exceptionally brilliant pupil, graduating from the Conservatoire with a first prize in harmony after remaining with Messiaen only one year. Messiaen's principal contribution to Boulez's development, however, was through extramural sessions of analysis in which Messiaen and his students examined works such as Bartok's sonatas for violin and piano, Berg's Lyric Suite, Schoenberg's Pierrot Lunaire, and, most significantly, Stravinsky's Le Sacre du Printemps. To Boulez, who had first heard a symphony orchestra in concert only at the age of 16, these sessions proved enormously influential, for they introduced to him the music of the twentieth century and the forms his own development would follow.<sup>2</sup>

In Messiaen's own music, however, Boulez was influenced above all by what he termed "rhythmic unrest".<sup>3</sup> Messiaen's study of Hindu rhythms and the pre-1914 music of Stravinsky had convinced him that rhythm, which had traditionally played a secondary role in Western music, might be subjected to a rational discipline and could become a primary, even an autonomous, element of composition.

Boulez shared his teacher's interest in and application of Oriental

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<sup>1</sup>Peter Heyworth, "Pierre Boulez," The New Yorker Magazine, March 24, 1973, p. 53.

<sup>2</sup>Ibid., p. 54.

<sup>3</sup>Ibid.

and Hindu rhythms, but Messiaen's harmonic idiom, consisting frequently of juxtaposed blocks of sound, was too narrow and not sufficiently inventive to serve him as a model. In this respect, Boulez felt that Messiaen had, in his non-rhythmic elements, accomplished nothing more progressive than Stravinsky's use of those elements in Le Sacre du Printemps.<sup>4</sup>

It was at this point that Boulez first encountered the dodecaphonic music of Arnold Schoenberg. In 1945, he heard a private performance of Schoenberg's Wind Quintet, which was composed in 1924 and was one of the first major works in which Schoenberg deployed his tone rows. It was a revelation to Boulez. The music obeyed no tonal laws, as did Messiaen's music, and he found in it an ability to generate, develop, extend, and vary ideas. Before he had heard of tone rows, Boulez had known that his own music could not be tonal, and Schoenberg's methods provided a framework of rational laws for the development of inventive atonality. Schoenberg himself lived in the United States, and the only person Boulez knew of in Paris who had studied with him was the conductor and composer Rene Leibowitz. Boulez subsequently organized a group of Messiaen's students to study each Saturday afternoon with Leibowitz.

Boulez, however, soon began to have doubts about the use that Schoenberg had made of dodecaphonic technique, as expounded by Leibowitz. He observed that while Schoenberg had adopted it as his basic means of composition, he had reverted to classical forms. In Boulez's opinion, such classical devices as the sonata form, which originated in the harmonic tensions implicit in tonality, were irrelevant to a technique devised precisely because those tensions had been stretched to the uttermost limit. Such a practice, he felt, was analagous to the trend toward neo-classicism

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<sup>4</sup>Ibid.

followed by Stravinsky, generally considered Schoenberg's antithesis, after 1918. It seemed that the two arch-revolutionaries of pre-1914 music had become reactionaries since the 1920's.<sup>5</sup>

Satisfaction with Schoenberg's technique and discontent with its application led Boulez to the music of Anton Webern. Analysis of the concise, transparent scoring of Webern, then regarded as an eccentric miniaturist, introduced Boulez to the manifestation of serialism that he had been seeking. ★

It will be helpful at this point to review, compare, and contrast characteristics of dodecaphonic composition as developed by Schoenberg and Webern (especially as the latter's methods would influence Boulez's style). In Schoenberg's system, the twelve notes of the chromatic scale are arranged into a row, or series. This series may be transposed, inverted, or treated in retrograde. Successive notes may be combined horizontally, into a line, or vertically, into a chord. Furthermore, rhythmic augmentation and diminution may increase the number of possible exploitations of the row. The composer, however, is always committed to the series as a whole; that is, no note may occur anywhere in the composition which is not part of some statement of the entire series or one of its variations. The series manifestation affects pitch only, not rhythm, dynamics, or texture. There is, in addition, a strict delineation of thematic and accompanimental functions. Schoenberg ultimately conceived of the tone row as an ultrathematic function, as seen in a letter to Nicolas Slonimsky dated June 3, 1937:

My conscious aim was always to build up my musical structures from one unifying idea which was the source of all the other ideas and also governed the accompaniment and chords, or the 'harmonies'. I made many attempts to achieve this.<sup>6</sup>

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<sup>5</sup>Ibid., p. 55.

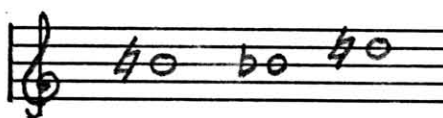
<sup>6</sup>Stuckenschmidt, H. H., Twentieth Century Music, translated by



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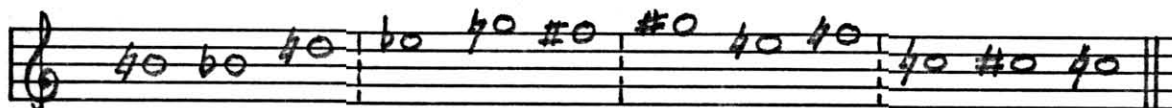
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Webern, on the other hand, regarded the row merely as a series of intervals, which he manipulated without trying to fashion into themes. A row, therefore, could be divided into cells of notes, each providing a germ for future development. Each cell could be related to other cells through intervallic symmetry or manipulation. The most interesting series of this type is that of the Concerto for Nine Instruments, Op. 24, which can be reduced to the following three-note figure:



Example 1

This figure and its three mirror forms (retrograde inversion, retrograde, and inversion), each transposed, constitute the twelve-note series:



Example 2

Each of the four cells consists of a semitone and a major third, and there is manifest symmetry among the cells. The compositional style is, as a result, extremely concise.

Webern's statement and manipulation of the series are not limited to a traditionally narrow pitch range of one or two octaves, as Schoenberg's tone rows are. In addition, statements of the row may be divided among several instruments or timbres (an extension of Schoenberg's Klangfarben-

melodien). Through his substitution of intervals for themes, Webern effectively abolished the distinction between the vertical and the horizontal dimensions of music (i.e., the notion of a horizontal theme accompanied by vertical harmony) which had dominated Western music since the age of Monteverdi.<sup>7</sup>

With his discovery of Webern's music, Boulez was thus liberated from the need to construct themes. He now recognized the synthesis of pitch serialism and rhythmic organization he had sought. By matching Webern's use of tone rows to the vastly increased rhythmic resources exploited by Messiaen, he had a means of integrating, to a theretofore unexplored degree, the two principal components of music--pitch and rhythm.

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<sup>7</sup>Heyworth, op. cit., p. 59.

## CHAPTER II

### THE FIRST SONATA

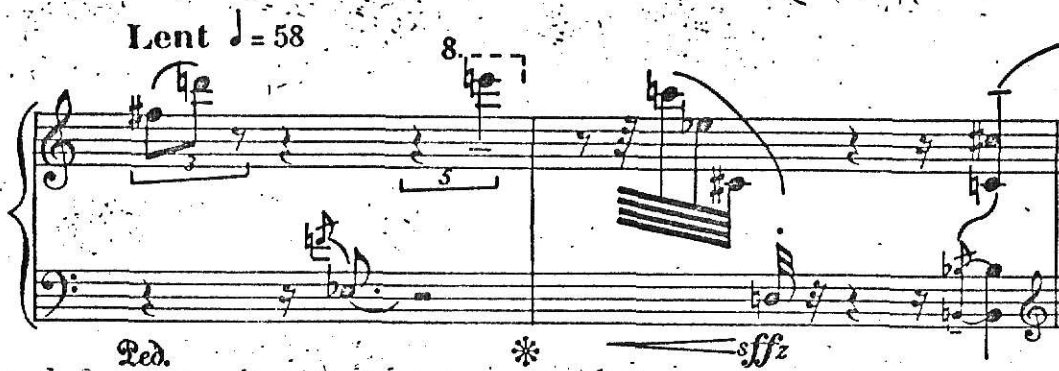
The first works in which Boulez attempted to match tone rows to Messiaen's rhythmic structures were the Sonatine for Flute and Piano and the First Piano Sonata, both completed in 1946. The complexity of rhythmic organization in the latter work is such that detailed discussion here is impractical and beyond the scope of this paper; it should be noted, however, that lack of meter, obscurity of pulse within the measure, and irregular and assymmetrical subdivisions of the basic unit combine to create a complex structure requiring extreme precision from the performer. Evidence of this complexity will be seen in subsequent examples.

The First Sonata consists of two movements, each containing many tempo changes and expressive markings. While Boulez disapproved of Schoenberg's adaptation of serial elements to classical forms, his own use of the sonata form is structural only, without the implications of harmonic tensions evident in Schoenberg's use of the form. The first movement, for example, contains only suggestions of the larger functions of sonata-allegro form. A slow introduction of ten measures precedes the main body of the movement, which begins with a statement of the row and increases in rhythmic activity and complexity. A final section, analagous to a recapitulation, begins with a transposed inversion of the row, restates transposed sections of the development (i.e., the most complex portion of the movement), and closes with contrasting vertical and horizontal statements of the row.

The second movement, a rapid perpetuum mobile, develops increasing speed and complexity in two-voice counterpoint, and obeys no classical form. In this movement (as, indeed, throughout the sonata), Boulez demonstrates the sensitivity to clarity of texture that is typical of all his works. The influence of Webern and Debussy, whom he regards as a principal musical ancestor, is clear. 2nd m. 2nd

The pitch organization of this sonata follows the influence of Webern in that the row divides into cells with unique and collective properties. However, a significant departure from serial practice at the time is immediately apparent. Webern's tonal cells were always part of a complete twelve-tone row; Boulez has limited his row to two cells comprising only seven different pitches. These cells combine and interact to include other pitches and to form larger musical elements. Before examining the slow introduction to the first movement, it will be helpful to discuss the cells and their properties.

Example 3 contains the cells as they are stated in the first two measures of the sonata.



Example 3

These may be simplified, as shown in Example 4 (page 9).



Example 4

The following observations may be made:

1. Cell (a) may be defined as a central pitch (E-natural, which is last in the sequence) surrounded by its upper and lower semitones and wholetones (E-flat, F-natural, D-natural, F-sharp). Its pitch levels are symmetrical; i.e., the first two notes of the cell are equidistant from the central pitch, and are narrowed to the central pitch by alternating chromatic motion.

2. Cell (b) consists of four adjacent chromatic tones forming two intervals (minor third and semitone), encompassing a minor third. The first two notes of the cell comprise the outer register and the first interval; the final two notes comprise the second interval. The connecting interval between the first and last pitches of the cell is a wholetone (C-natural - D-natural), as is the interval between the second and third pitches (E-flat - C-sharp).

When (a) and (b) are considered together as a unit, new connecting relationships are apparent, as shown in Example 5.



Example 5

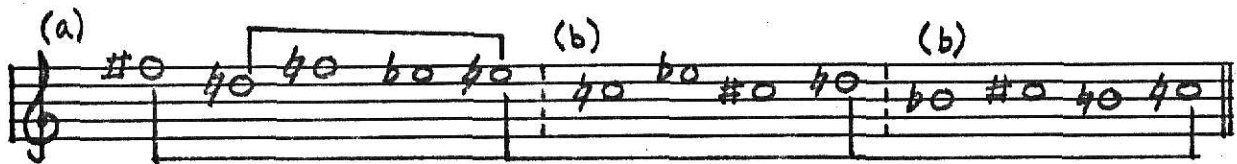
1. Cell (a) appears twice, with E-natural serving as the last note

of the first cell, and as first note of the second cell. The pitch center of the second cell, D-natural, is the last member of the sequence, thereby comprising a transposition of the original (a).

2. Cell (b) may be derived from the second through fifth notes of cell (a) (D-natural, F-natural, E-flat, E-natural). There are, therefore, two consecutive appearances of (b).

3. The intervals connecting (a) and (b) (E-natural - C-natural) and the final note of (b) with the first note of (a) (D-natural - F-sharp) are the same, a major third.

Furthermore, when the chord in the second measure (see Example 3) is added to the original statements of (a) and (b), as in Example 6, the following observations may be made:



Example 6

1. The chord comprises a transposed statement of (b) (B-flat, C-sharp, B-natural, B-natural).

2. From the final note of the original statement of (b) and the notes of the chord, a third, transposed statement of (a) may be obtained, with the central note, C-natural, last in the sequence. Considering (a), (b), and the chord as a unit, therefore, it will be seen that there exist three statements of (a) which share connecting notes, and three consecutive statements of (b). The original (a) is thus a self-generating motive.

As will be observed later, particularly in the Third Sonata, cells containing networks of developmental possibilities through inherent intervallic relationships are characteristic of Boulez's music.

Boulez's application of tone-cell technique may be seen in an analysis of the slow introduction to the first movement. For convenience of reference, it is reproduced with measure numbers added in Example 7.

The musical score for Example 7 consists of three systems of piano music. The first system is marked "Lent" with a tempo of 58. It features a complex melodic line in the right hand and a more rhythmic accompaniment in the left hand. The second system is marked "4" and the third "8". The score includes various musical notations such as notes, rests, and dynamic markings like "pp", "p", "mf", "ff", "sffz", and "incisif". There are also handwritten annotations and a "Large" marking at the end of the third system.

Example 7



The following observations may be made:

1. Mm. 1-2: Statements of original (a) and (b), as noted before.
2. Mm. 2-3: The chord at the end of measure 2 and the notes in measure 3 constitute a retrograde statement of (b) (a).
3. Mm. 3-4: The F-sharp in measure 3 and the notes of measure 4 form the original tones of (a).
4. Mm. 4-6: Including the D-natural from measure 4, measures 5-6 constitute a retrograde statement of (b) (a).
5. Measure 7: These notes are a transposition of (a). E-flat, the last member of the sequence, is the central pitch.
6. Measure 8: (a) is presented in different order, but with the central pitch, C-natural, last.
7. Measure 9: (a) and (b) are presented in mixed order.
8. Measure 10: The chord represents a statement of (a), with the central pitch, A-flat, occurring last in the sequence. Following the chord, (a) appears in the treble notes (E-natural, D-natural, E-flat, F-natural, C-sharp), sharing the C-sharp with a lower register statement of (b) (D-natural, B-natural, C-sharp, C-natural).

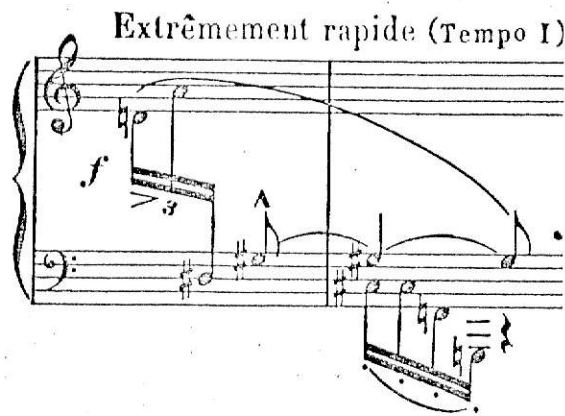
The above observations represent typical use of serial techniques in Boulez's early works. Also evident is the aforementioned rhythmic complexity.

### CHAPTER III

#### THE SECOND SONATA

The Second Piano Sonata (1948) is the largest of the three, and is one of Boulez's most important works in any medium. Structurally, the sonata as a whole follows the traditional four-movement sonata or symphony form. There is a serious, energetic first movement; a slow, generally legato second movement; a short, light scherzo; and, finally, a closing movement employing great textural variety and a strong climax.

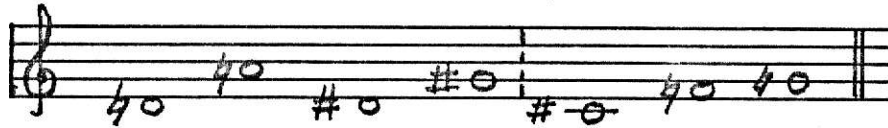
As in the first sonata, tone-cells replace twelve-tone rows. Two cells serve as germ motives for the first movement, the first two measures of which are reproduced in Example 8.



Example 8

The two cells shown above have four and three notes, respectively. The interval patterns are those of a perfect fourth enclosed within a perfect

fifth (a), and a major third with an added major second (b). Some of the notes in each cell are subject to octave displacement, and the wide spacing evident in the First Sonata is also characteristic of the Second. A simplified statement of the cells follows in Example 9:



Example 9

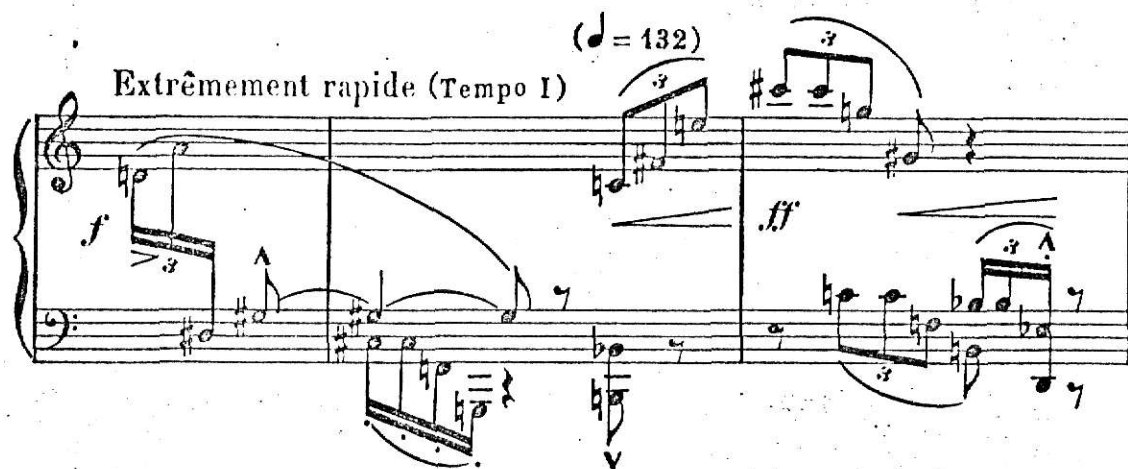
It will be seen that each of the cells is brief and distinctive, the first because of the contrast between the dissonance of the two half-steps and the openness of the two perfect intervals, the second because of the whole-tone sound. Consequently, the cells act as clearly recognizable motives. It should be noted that, unlike cell appearances in the First Sonata, certain notes of each cell (usually the first or last) may be repeated in the Second. An example of Boulez's development of tone-cell technique, similar to his practice in the First Sonata, may be seen in measure 69:

Tempo I<sup>o</sup> (extrêmement rapide)

Example 10

In Example 10, each of the two cells appears twice, the second appearance an inversion of the first one. In both statements of the second cell the first note is repeated. The four figures constitute a brief and clearly shaped phrase.

In Example 11, another, somewhat more complex, demonstration of Boulez's technique appears at the beginning of the movement:



Example 11

In this case, the two cells are stated one after the other. The second cell appears again, without the repeated note, followed by three descending figures related to the second cell through the use of the repeated note. In the last of the descending figures, the third and fourth notes are played together. The six figures therefore generate a phrase with a clearly marked ascending and descending shape.

An additional manifestation of tone-cell technique is evident in a portion of the movement which contains material contrasting the relatively horizontal construction of the original cells. This material, shown in Example 12 (page 16), is somewhat analogous to contrasting theme groups in traditional sonata-allegro form, and is chordal rather than contrapuntal.



Example 12

Each body of material (contrapuntal and chordal) undergoes a recapitulation in inversion near the end of the movement.

Other movements of the Second Sonata also recall traditional sonata forms. The second movement, for example, begins simply, increasing in intensity to a broad climax, then gradually diminishes in intensity and complexity; these sections, therefore, clearly suggest an arch form (ABA).

The third movement is the most formally traditional. It is an expanded scherzo-trio form which may be described as ABACA<sup>1</sup>DA<sup>1</sup>.<sup>8</sup> The various sections are divided by double-bars. The second A is a retrograde inversion of the first; A<sup>1</sup> is an ornamented but recognizable variation of A; and the second A<sup>1</sup> is a retrograde inversion of the first A<sup>1</sup>. The movement may be said, therefore, to be an application of serial technique to cyclical form.<sup>9</sup>

The fourth movement is episodic in form and is characterized by virtuosity, textural variety, and rhythmic complexity. There are four

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<sup>8</sup>William Heiles, "The Second Piano Sonata of Pierre Boulez," The American Music Teacher, XX, No. 3 (January, 1973), 37.

<sup>9</sup>Ibid.

main episodes. The first is comprised of short figures with extreme and sudden changes of tempo and dynamics (similar to the First Sonata); the second is legato, with several continually interacting voices; the third contains great rhythmic complexity; and the fourth serves as a slow coda to conclude the movement. The performance indications are most profuse in the fourth movement. At the beginning, the performer is directed to play "very freely, with brusque oppositions of movement and of nuances". Later, a pianissimo marking in the lower register is marked "furtive". As the movement approaches a climax, the directions reflect increasing agitation: "abrupt", "harsh", "rude", "exasperated", "brutal", and "violent". Finally, the performer is ordered to "pulverize the sound".

The greater expressiveness and complexity of the Second Sonata are indicative of trends in Boulez's development at the time. He was convinced that serialism would rule the music of the future. During the next decade, he would lead the technique to its culmination, then begin to turn from it.

## CHAPTER IV

### INTERIM: 1948 - 1957

The serial techniques which Boulez first exploited in his first two piano sonatas were expanded to include parameters other than pitch after 1948. His principal influence in this regard was Olivier Messiaen, whose first serial work, Mode de valeurs et d'intensites, was composed in 1949 in Darmstadt. The work is strictly and serially constructed from the following:

1. Melodic series of 36 notes
2. Rhythmic series of 24 durations
3. Dynamic series of 7 intensities
4. Timbre series of 7 modes of attack.

Messiaen had thus succeeded in applying Schoenberg's conception of a rwo not only to pitch and rhythms, but to dynamics and timbre (inasmuch as the latter is possible in piano performance) as well.

Boulez was fascinated by Messiaen's work. "As soon as I saw it, I jumped at it," he later said.<sup>10</sup> Music was on the verge of total serialism, and he felt that that the compositional means of the future had been discovered. As Boulez later stated, he wanted "to see how one

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<sup>10</sup>Heyworth, op. cit., p. 59.

might construct a musical language from scratch."<sup>11</sup>

His first attempt with the new "musical language" was Polyphonie X, a work for chamber ensemble, which was first performed in October, 1951. The composition was nearly unanimously scorned, even by an audience and critics generally sympathetic to the avant-garde. Boulez was not present at the performance, but a tape of it subsequently convinced him that he had overestimated the potential of the instruments involved, and that the work was nearly unperformable.<sup>12</sup>

The instrumental limitations led him to experiment in a Paris studio with the production of musique concrete from various recorded sounds. He produced two studies, but decided they were unsatisfactory, and he scornfully dismissed that primitive form of electronic music as "a sonic flea market."<sup>13</sup>

Boulez again turned to serialism, and the result was Structures for two pianos, which was first performed by Boulez and Messiaen in 1952. The work is rigidly serial in all parameters and represents the culmination of his serial exploitation. Music circles took note of the work, and one of the sections received a twenty-six page analysis by György Ligeti in an issue of Die Reihe, a journal devoted to contemporary music and the avant-garde.<sup>14</sup>

Through his manifestation of serialism, however, Boulez had become convinced that total control of music was impractical. Some

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<sup>11</sup>Ibid.

<sup>12</sup>Ibid., p. 61.

<sup>13</sup>Ibid.

<sup>14</sup>György Ligeti, "Decision and Automism in Structure Ia," Die Reihe, IV (1958), pp. 36 - 62.



parameters, he felt, are of more importance than others, and therefore cannot all be subjected to the same serial techniques. A composer's function, he decided, is to choose between a number of possibilities that will ultimately result in a musical statement of coherence. The serial experience had served its purpose for him in that it abolished the concept of music as necessarily thematic. As a self-contained language, however, it was, he felt, inadequate; serial techniques should be regarded as a manner of thought, not as a rigid system of laws. He scorned "timetables of trains that never leave"; i.e., works which existed on paper but which were unable to succeed as aural experiences.<sup>15</sup>

The result of Boulez's desire for a coherent musical statement was his most widely known work, Le Marteau sans Maître, which was composed in 1954. The work is scored for alto voice, flute, viola, guitar, vibraphone, xyloimba, and percussion. The sensitivity to texture which is characteristic of Boulez's style serves in this work to place serial technique into the context of expressiveness. It marked a major turning point in his career, for it represented an admission of the futility of total organization.

It was during the mid-1950's that Boulez directed his attention to the music and practices of John Cage, the American composer who had introduced into music chance elements. The result was Cage's abandonment of rational control over many aspects of the act of composition. He used dice, the Chinese I Ching chance manual, random plotting on the imperfections of a piece of paper, the tossing of coins, and other chance means in the

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<sup>15</sup>Heyworth, op. cit., p. 62.

selection and ordering of his materials. A typical and famous example of his endeavors in this area is Imaginary Landscape for twelve radios. In a performance of this composition, random noise assemblages may occur in any combination, regardless of content, texture, or any other properties of sound. Performance, therefore, is replaced by activity; the same may be said of the compositional process.

In other manifestations of chance performance, scores or parts may be played separately or not at all. Instruments are objects to be acted upon, and sounds may be produced by a series of unpredictable disturbances and interferences. Under such a scheme, traditional concepts of musical composition, performance, communication, and art are destroyed or drastically altered. In their places are substituted a concept in which the listener becomes directly involved in an activity which rests on uncertainty and accident, on reflection of happenings in the "real" world.

Boulez was intrigued by Cage's experiments with chance elements in music. The previously mentioned Imaginary Landscape fascinated him, not for the result but as an experiment in combining exactitude and chance. Cage's practice of tossing coins in accordance with rules laid down in the I Ching as a means of introducing chance operations into music also interested him.<sup>16</sup> Boulez had major reservations, however, about Cage's concept of the role that chance operations should play in music, and he formulated his concept in the Third Piano Sonata, which was composed in 1957.

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<sup>16</sup>Ibid., p. 66.

## CHAPTER V

### THE THIRD SONATA

Boulez's conception of the role of chance was somewhat more precise than Cage's, as is evident in his Third Piano Sonata. During the composition of this sonata, Boulez was influenced by the Livre of the French poet Mallarme. The purpose of the Livre was to use words and syllables as musical elements irrespective of their conventional meaning. These elements could then be combined in different ways so that different poems would be produced.

In Boulez's Sonata, there are five movements (Antiphonie, Trope, Constellation-Miroir, Strophe, and Sequence) which can come in different orders, and each movement is composed of particles which can themselves be interchanged. In other words, there are variations of chronological sequence in performance, in addition to variations of other kinds. The performer becomes a contributor (indeed, the determining factor) in the eventual configuration of the work. His task may be compared to that of an organist or pianist realizing a figured bass, with the exception that the constants and variables are different.

Examples of the traits mentioned above may be seen in the second movement (or formant), Trope. (It should be noted here that at the Sonata's first performance, all five formants were played,

although only three had achieved their final form. Since that time, only two formants have been published, Trope and Miroir, the latter of which no longer carries its full original title. The other formants are being revised; eventual publication date is uncertain.) Trope consists of four "developments", which shall be called A (Texte), B (Parenthese), C (Commentaire), and D (Glose). The form is conceived as a circle; each development may serve as the beginning or the end of the formant. According to Boulez, a general curve is thus described each time "by the chosen registers, the density of the writing, and the preponderant dynamics."<sup>17</sup>

The four development sections are separated by an interstitial binding which permits turning to any section as the beginning of the formant. It should also be mentioned that within two of the sections, Parenthese and Commentaire, there are divisions of the music into episodes with and without parentheses. The performer is directed to choose only those sections with or without, and is instructed not to mix the orderings. In addition, there are two Parenthese sections which are identical, but which occur at different places in the sequence of development sections. Again, the performer must select one, not both. The performer's selection thereby contributes to the eventual formal configuration of the formant.

In his essay, "Sonate, que me veux-tu?", Boulez discusses in general terms his acceptance and modification of chance elements in music. His opening premise is that Western music, with its predilection for the closed cycle, follows a single line of development that is always

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<sup>17</sup>Stuckenschmidt, op. cit., p. 220.

reproduced in an identical way. Consequently, classical Western works prohibit active participation on the performer's part and rule out the element of surprise or personal solution in performance. By contrast, the music of the East, with its conceptions of elaborations, allows music to be "a way of being in the world, an integral part of existence."<sup>18</sup> From this system Boulez derived the concept of the "labyrinth", which he considers an extremely important notion in recent Western art.

To me, the labyrinth notion in a work of art is like Kafka's idea in the short story called The Burrow. Everyone creates his own labyrinth; ...resources are constantly shifted about so that everything can be kept secret, and new routes are forever being chosen to mislead. Similarly, the work must provide a certain number of possible routes, thanks to these very precise devices, with chance playing a shunting role at the last moment....This notion of shunting does not belong in the category of pure chance, but in that of non-determinate choice, and this difference is fundamental; in a construction that is as ramified as works written today, there could not possibly be total indeterminacy, for such a phenomenon is contrary--absurdly so--to all organizing thought and to all style.<sup>19</sup>

Boulez, therefore, conceives of the function of chance elements as one of choice on the part of the performer, not of pure chance.

The third formant, Miroir, is extremely complex; as in the second formant, the performer ultimately determines the configuration. The music is printed in two colors, red and green. Green refers to the groups of music entitled points, red to those called blocs. Points consist of structures based on isolated pitches, with chords resulting only from the simultaneous meeting of two or more points. Blocs are structures based on aggregates of sound, either struck together or constructed horizontally in very rapid succession. There are three points

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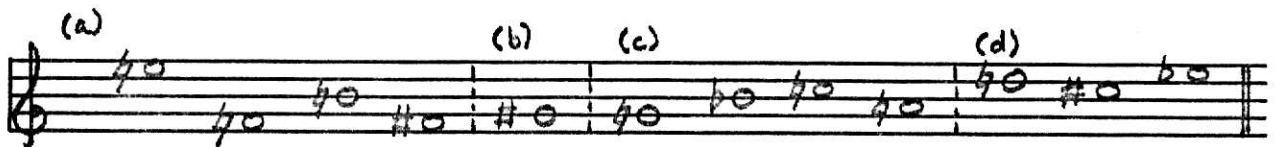
<sup>18</sup>Pierre Boulez, "Sonate, que me veux-tu?", Perspectives of New Music, I, No. 2 (1963), p. 34.

<sup>19</sup>Ibid., pp. 34-35.

and two blocs, which are alternated in the order in which they appear. Connecting the structures is a system of shaped arrows guiding the performer to alternate destinations. Certain directions are obligatory, others are optional, but all the music must be played in a single performance. The route through the sections is left to the performer, but the ultimate destination (i.e., performance of all the music) remains the same.

It should be mentioned that the texture of both published movements is complex; the music is printed on three staves, not the traditional two, throughout.

Unlike the first two sonatas, the second formant, Trone, of the Third Sonata is based on a complete twelve-tone row. Of the four development sections, Texte contains the most evident presentation of the row. The twelve notes, simplified within the range of an octave, are shown in Example 13.



Example 13

The following observations may be made:

1. The series is divided into four groups of four, one, four, and three notes, respectively. These have been designated (a), (b), (c), (d).
2. For purposes of identifying intervals within the respective cell, the following designations will apply:

Vertical relationships: those intervals connecting the first and second, and third and fourth notes of the cells.

Horizontal relationships: those intervals connecting the first and third, and second and fourth notes of the cells.

Connecting relationships: those intervals connecting the second and third, and fourth and first notes of the cells.

From Example 13, therefore, it will be seen that cell (a) contains vertical and horizontal relationships (vertical: E-natural - F-natural; B-natural - F-sharp; horizontal: E-natural - B-natural; F-natural - F-sharp) which reduce to the intervals of a semitone and a fourth. The connecting intervals are the augmented fourth and the whole tone (F-natural - B-natural; F-sharp - E-natural).

3. Cells (b) and (d) combine to form a third four-note cell.

In the figure (b/d), the vertical relationships are the augmented fourth and the whole tone (G-sharp - D-natural; C-sharp - E-flat). The horizontal relationships and the connecting intervals are the semitone and the fourth (G-sharp - D-sharp; D-natural - E-flat; D-natural - C-sharp, E-flat - G-sharp).

4. Cell (c) is composed of two minor thirds (G-natural - B-flat, C-natural - A-natural), separated by a whole tone. The horizontal relationships again yield intervals of a fourth and a semitone (G-natural - C-natural, B-flat - A-natural).

5. Cell (c), which is symmetrical, divides (b/d) into asymmetrical fragments. There is, therefore, manifest symmetry within (c), and disrupted or concealed symmetry between (a) and (b/d). Furthermore, the intervals which relate the groups to each other are the same as the fundamental intervals of the groups: whole tone (a - b), semitone (b - c),

and fourth (c - d).

The row in the second formant, Trope, therefore, is a relatively complex structure of several cells which are individually and collectively related by three intervals.

The combination of serial techniques and Boulez's concepts of "labyrinth" structure in the Third Sonata results in an extremely complex composition requiring careful precision from the performer. Detailed discussion without the score, which is too large for reproduction here, is necessarily limited; however, the general description of basic concepts mentioned above demonstrates the evolution of Boulez's style from the mid-1940's. The transformation of that style is important, for it included the increasing manifestation of serial technique, introduction of chance elements into music, and, as a result, a reconsideration of the function of form in music.



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A SURVEY OF THE PIANO SONATAS OF PIERRE BOULEZ

by

MARK WILLIAM WAIT

B. M., Wichita State University, 1971

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AN ABSTRACT OF A MASTER'S REPORT

submitted in partial fulfillment of the

requirements for the degree

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Manhattan, Kansas

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The piano sonatas of Pierre Boulez were composed between 1946 and 1957. It was during that decade that Boulez became, before the age of 25, the undisputed leader of the European avant-garde. The decade also witnessed transformations of Boulez's philosophies and techniques which are apparent in the three sonatas. Figuring prominently in his development are the influences of Olivier Messiaen, Arnold Schoenberg, and Anton Webern.

In 1944, Boulez entered the Paris Conservatoire as a student of Olivier Messiaen, whose principal contribution was through extramural sessions of analysis in which Messiaen and his students examined important works of twentieth-century music. These sessions were enormously influential, for they introduced to Boulez the forms his own music would follow. In Messiaen's own music, the parameter of rhythm, which had traditionally played a secondary role in Western music, became a primary, even an autonomous, element of composition. Boulez considered his harmonic idiom, however, too narrow and not sufficiently inventive to serve him as a model.

In 1945, Boulez first heard the music of Arnold Schoenberg. The music obeyed no tonal laws, and he found in it an ability to generate, develop, and extend ideas. He observed, however, that Schoenberg had reverted to classical forms. In Boulez's opinion, such devices were irrelevant to a technique devised precisely because those tensions had been stretched to the uttermost limit.

Satisfaction with Schoenberg's technique and discontent with its application led Boulez to the music of Anton Webern, whose concise, transparent scoring and dodecaphonic cell technique provided the manifestation of serialism he had been seeking. Boulez now recognized the synthesis of pitch serialism and rhythmic organization he had desired.

The First Sonata, composed in 1946, consists of two movements, each containing many tempo changes and expressive markings. The first movement contains only suggestions of the larger functions of sonata-allegro form. A slow introduction of ten measures precedes the main body of the movement, which begins with a statement of the row and increases in rhythmic activity and complexity. A final section, analagous to a recapitulation, begins with a transposed inversion of the row, restates transposed sections of the development, and closes with contrasting vertical and horizontal statements of the row. The second movement develops increasing speed and complexity in two-voice counterpoint, and obeys no classical form. This movement bears evidence of the sensitivity to clarity of texture that is typical of all Boulez's works.

The Second Sonata (1948) is the largest of the three. Structurally, the sonata as a whole follows the traditional four-movement sonata or symphony form. There is a serious, energetic first movement; a slow, generally legato second movement; a short, light scherzo; and, finally, a closing movement employing great textural variety and a strong climax. As in the first sonata, tone-cells replace tone-rows, and two cells serve as the germ motive for each movement.

Boulez's introduction of chance elements into his music is evident in the Third Sonata (1957). There are five movements (Antiphonie, Strophe, Constellation-Miroir, Trope, and Sequence) which can come in different orders, and each movement is composed of particles which can themselves be interchanged. In other words, there are variations of chronological sequence in performance, in addition to variations of other kinds. The performer becomes a contributor (indeed, the determining factor) in the eventual configuration of the work. The combination of serial techniques and variable form in the Third Sonata results in an extremely complex,

difficult work requiring careful precision from the performer.